Dragon Medical One:

The Unofficial User Guide

A guide by and for physicians seeking to optimize efficiency using cloud-based speech recognition.

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Introduction

With the dramatic push from paper to electronic medical records during the last decade or so, physicians have struggled with EMR-associated inefficiencies and imposition of the computer in the patient-provider relationship. For many, the ability to document the clinical narrative and complex medical decision-making has been particularly challenging. Strategies involving mouse-click generated narrative fail to capture the complexity of the clinical presentation and history. Hand-typing of narrative is time-consuming and cuts into valued time with patients. The result for many providers has been a clear deterioration in the quality of the documentation and interference with the patient-provider relationship. Many records today, the result of "copy-paste" culture, are often long but often of minimal worth.

Increasingly, medical providers are fighting technology-related woes with technology-based solutions. Nowhere has this been more evident than in the use of speech recognition technology. Refined over several decades, speech recognition technology is now highly matured and in its latest iteration can accurately convert speech to text literally at the "speed of talk."

Complicating these changes in documentation has been a wholesale switch from computer to server-based implementation of electronic health records. In today's world, the electronic health record often lives on a "farm" of institutional servers and medical providers are interacting remotely with the EMR using virtualization software such as Remote Desktop and Citrix which allow visualization and interaction with the EMR from a variety of operating systems and devices. With this new complexity has come unique challenges for the makers of speech recognition technology, since the process tends to work best when both the speech recognition software and target application (EMR) reside on the same computer.

Dragon Medical One: The Evolution of Medical Speech Recognition

Although medically oriented speech recognition products have been available for more than a decade, during the last few years Nuance Communications has extended their PC-based product to a fully cloud-based product. Simpler in interface and functionality, this newer software platform, termed Dragon Medical One (DMO), is available for direct use by Windows users and through virtualization software for Mac and mobile device user.

Key features of this product include:

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1. Small application size, facilitating installation and updating
2. Auto-updating features
3. Highly level of accuracy (better than seen with traditional versions of NaturallySpeaking)
4. Speed almost identical to that seen in the full Dragon NaturallySpeaking client-side software
5. Lack of need for user training
6. Automatic adjustment for user accent
7. Automatic microphone gain adjustment
8. Automatic integration with a variety of microphones including the PowerMic II, Philips SpeechMike Premium, and others
9. Availability of versions for use with applications on both a local computer and for virtualized (Citrix based) applications
10. Ability to create text commands (termed "Auto-Texts") to allow insertion of large segments of pre-defined text with a single verbal command
11. Ability to create step-by-step commands for computer control and other complex tasks
12. Full "text control" to allow navigation, selection, and correction of text
13. Unique ability to anchor upon a document and place dictated text in this document even when computer focus has changed

How it works

Without digging deeply into the technology, the basic function of the Dragon Medical One involves capturing your voice, digitizing and compressing it, sending it to a Nuance "cloud server", converting the data to text, and then sending it back to the user where it is either inserted as text or accepted as a command to accomplish tasks on the computer. Unique to the technology is that the entire process is highly accurate and almost instantaneous.
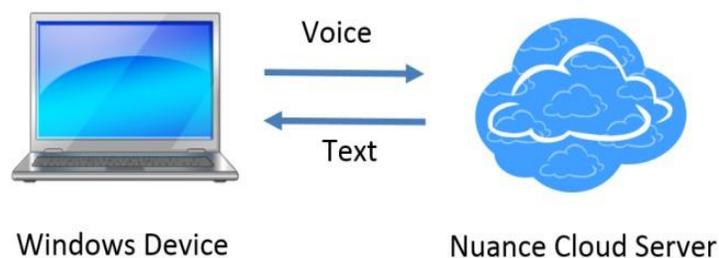
The product itself represents a combination of several "layers" of functionality including the basic speech recognition technology, medical vocabularies, and a series of added functions which are unique to the workflow and needs of the medical provider.
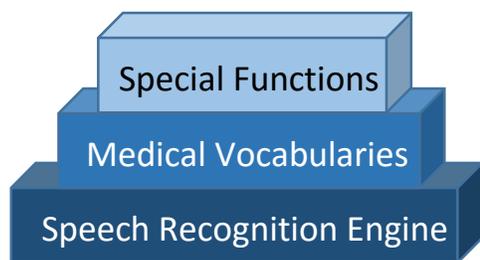
Two Flavors

Currently, Dragon Medical One comes in two "flavors" or versions. At the root of the need for two versions is the fact that Dragon Medical One tends to work only when both the DMO application and target word-processing window reside on the same computer. If an electronic medical record resides on a distant server, a locally placed version of DMO will not insert text into the EMR on the server. Likewise, a server-placed version of DMO which will work well in applications on the server (the EMR), will not insert text in documents on a user's personal computer.
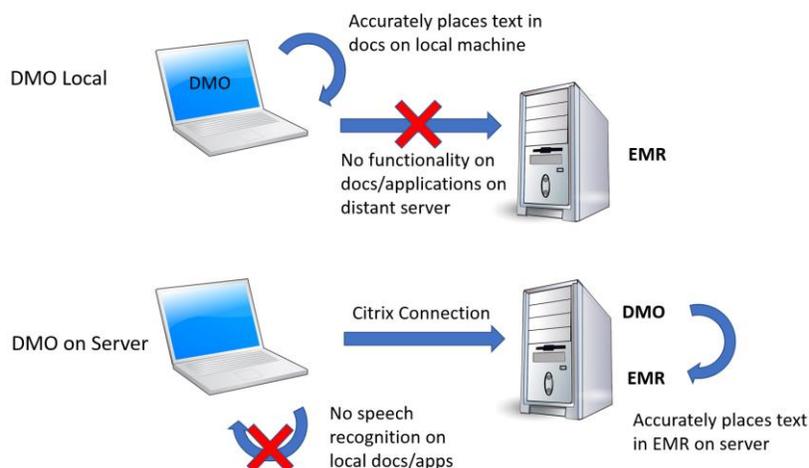
To resolve the potential challenge of needing to send dictation to either a locally based application or to a server based application, Nuance has created two versions of Dragon Medical One. In most respects, the two versions are identical and the distinguishing feature is *where the DMO application is located.* It is entirely feasible for an institution to make both available to users.

An overview of the two versions of Dragon Medical One is shown in the figures below. It is important to know that a user can have access to both versions at the same time. The local version can be used for speech recognition in documents on the local machine, and the server versions (typically presented via Citrix) is used for speech recognition on the server based EMR.

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- Local Version: also called the "Click-once" version, this is for installations in which the application is installed directly on the user's computer and the application is launched and used locally. This type of set up is simple and is best suited for situations in which the target text entry window arises from an application actually running on the computer and not being presented virtually with Citrix or a remote desktop technology.

Click Once Installation

- Server Version: also called the "Stand-alone" version, in this scenario, the application is installed centrally on a server and is accessed by users by means of Citrix or another virtual methodology. This arrangement is used if an electronic medical record is presented virtually to a user and in this scenario the application is placed directly on the Citrix server and not on the local computer. Although the logistics are different, from the user's perspective, operation is nearly identical.

Stand Alone Installation

What it can do

For those new to speech recognition technology, these are the basic functions Dragon Medical One can accomplish:

1. Convert your words into text
2. Use your voice to insert chunks of pre-defined text
3. Use your voice to navigate from place to place on a document with pre-defined "navigation fields"
4. Manipulate text with such activities as selecting, deleting, correcting and formatting text
5. Use your voice to accomplish a variety of tasks on your computer, including opening documents, applications and web pages, controlling the microphone, pressing keyboards keys, entering text, and doing any of the above in a sequential way.

What it doesn't do

For those accustomed to using the full versions of Dragon installed on your computer, you should know that Dragon Medical One is a somewhat pared down version of Dragon and does not include many of the advanced functionalities seen in the full version of Dragon NaturallySpeaking. Among the things that it <u>cannot</u> do are the following:

1. Accept digital speech files/recordings from a recorder or mobile phone (a mobile phone can, however, be used as a wireless microphone in conjunction with the "PowerMic Mobile" app)

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2. Allow addition of user specific words as a list (words can be added only one at a time by a user; via the administrative panel words can be added as a list)
3. Allow import or export of commands for sharing on the user level (but this can happen centrally)
4. Allow use of formatted text in text commands

The above notwithstanding, most of the above are functions that most NaturallySpeaking users never contemplate and the loss of these functions does not take away from the fact that Dragon Medical One truly shines in its simplicity, accuracy, and preservation of the most important functions.

Installation

Downloading and installing the application:

The Dragon Medical One installation procedure depends upon whether you will be using the local version or server based version and whether you are obtaining Dragon Medical One from a reseller or through your institution.

Local ("Click Once") Version: If purchasing DMO on your own from a "value added reseller" you will receive a "Welcome Letter" which includes installation and log on instructions. The letter includes a link which will bring you to the formal download page (see image below). If receiving the local version is arranged by your practice or hospital, in all likelihood IT folks will take care of the entire installation process for you.

There are two important requirements for completing the installation onto your local machine:

1. The installer will only run from Internet Explorer
2. Your computer must have Microsoft .NET Framework 4.5 or higher installed

[What is .NET Framework? This is an extensive library of shared code (API's) that developers can call upon to run an application without having to write all the code from scratch. DMO needs this. Windows 8 and Windows 10 include versions 3.5 and 4 (the current version right now being 4.6.1). They are installed on a first-time-needed basis, so the first time you install an app that needs one of those versions, Windows will add it automatically. For more information on .NET Framework, visit this link: https://www.howtogeek.com/253588/what-is-the-microsoft-net-framework-and-why-is-it-installed-on-my-pc/]

If Internet Explorer is not your default browser, simply right click on the link in your welcome letter, copy the hyperlink, and then paste it into the address window in Internet Explorer.

CLICKONCE INSTALLATION DOWNLOAD PAGE

The link below is for clinicians who will be using Dragon Medical One. Distribute the link below to the users of Dragon Medical One if you want your users to install the software directly on their local machines. From this page, users can access the software as well as training videos. Clinicians simply click the download link on this page and can begin dictating a few minutes later.

Dragon Medical One Click-Once Installation Link

After being brought to the DMO installation page using Internet Explorer, click on the "Install Dragon Medical One" link as shown on the image below. This will lead to installation and placement of the application on your Start Menu.

Install Dragon Medical One

Dragon Medical One can be easily installed on your local PC by using the "ClickOnce" installation link below.

Install Dragon Medical One

Server Based ("Stand-Alone") Version: If DMO has been purchased by your group or institution and is to be installed on a central server, all aspects of the installation will happen remotely and there will be little for you to do. Once installed, you will access the application through the Citrix or other remote desktop application. The only thing that need to be installed on your local machine is a Nuance Citrix audio extension to facilitate movement of your audio signal from your local machine to the server. In addition, if you plan to use a microphone with programmable buttons, you will need to have dedicated extensions added to your computer to facilitate this process. Again, you should be guided through this process by your institutional IT department.

If your institution has purchased "PowerMic Mobile" functionality (allows use of your Apple or Android phone as a wireless microphone), use of this will require a few extra steps, including installing the application on your iOS or Android device and then "configuring" the application for your institution. A section dedicated to the PowerMic Mobile app is seen later in the Guide.

Initial Log-on

On the initial log-on (and each subsequent log-on) you will need to enter your user name (typically an email address) and your password. See image at right.

Thereafter, each time you launch Dragon Medical One you will see the start-up screen which includes an area to enter your log-on credentials (shown below) that provides you the opportunity to select a few key options, including the vocabulary and microphone.


Here's a brief look at the initial options:

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- Microphone Selection: All available microphone/sound sources will be shown in the drop down when using the local version of Dragon Medical One, including the PowerMic Mobile, any on-board microphones (typically present on a laptop computer), and any attached microphones or sound cards. In the server based version of Dragon Medical One you will see only the last USB sound source plugged into your PC. If you don't see the microphone you plan to use, it may be necessary for you to select this microphone as your system default input device from the Sound control panel. Select whichever microphone you plan to use.

- Language: Although there is a drop-down for language, in all likelihood this will have been chosen for you.

- Specialty: Here is where you can select the vocabulary appropriate for your medical specialty. The list is fairly meager at this point, but we expect Nuance will be expanding this in the near future. **If you are planning to do nonmedical dictation, you should select the "Clinical Administration" vocabulary.** If your specialty does not align with any of the listed specialty vocabularies, you are best to select "General Medicine".
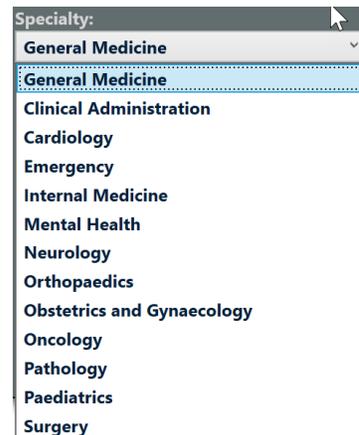
Basic Use

Dragon Medical One Console Controls

Fortunately, Dragon Medical One is an extremely simple application. This translates into a very straightforward user experience and little in the way of complicated controls. There are only a few things you need to know to "know it all" and only a single dropdown menu. To the right is an image showing all the accessible options on the Dragon Medical One console.
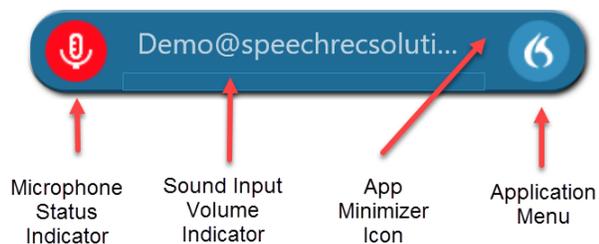
1. Microphone Icon: this indicates whether Dragon Medical One is listening or not. When red it is not listening and when green it is listening. You can toggle between the mic off and mic on mode using several methods: a) clicking on the icon with your mouse – it will sequentially cycle

between off and on with each click b) using an assigned keyboard hot-key, c) using a voice command and d) using a key on a hand-held microphone to cycle the microphone.

Toggle microphone on/off with:
- Mouse click on mic icon
- Verbal command "stop listening
- Click of keyboard hotkey
- Click of assigned key on handheld microphone
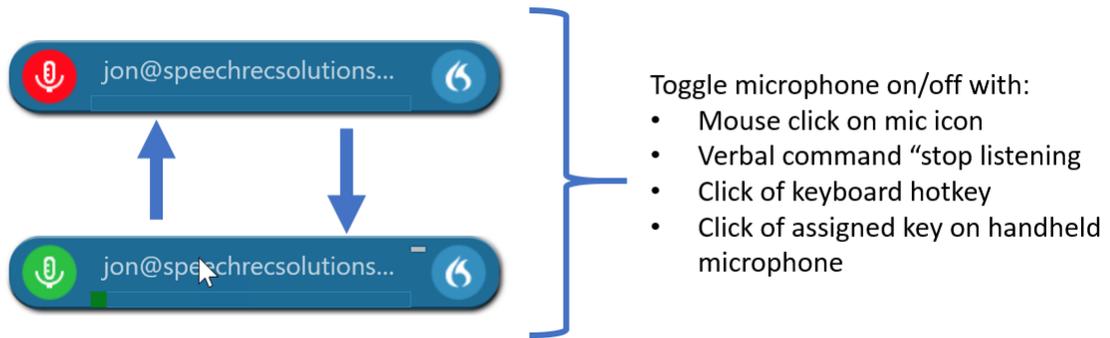
2. Sound indicator: this is the bar going across the main central part of the console (under where your user name shows up) and gives a visual indicator of sound volume when the microphone is on and a signal is being received. Because Dragon Medical One utilizes an "Auto Gain" technology, there is no reason for you to interact with the sound volume or to alter it. This is simply a visual indicator.

3. Minimizer icon: this icon does not become visible unless you hover in the area above and to the left of the Nuance icon on the right side of the console. When doing so, you will see a typical "minimizer" icon which, upon clicking, will cause the entire console to disa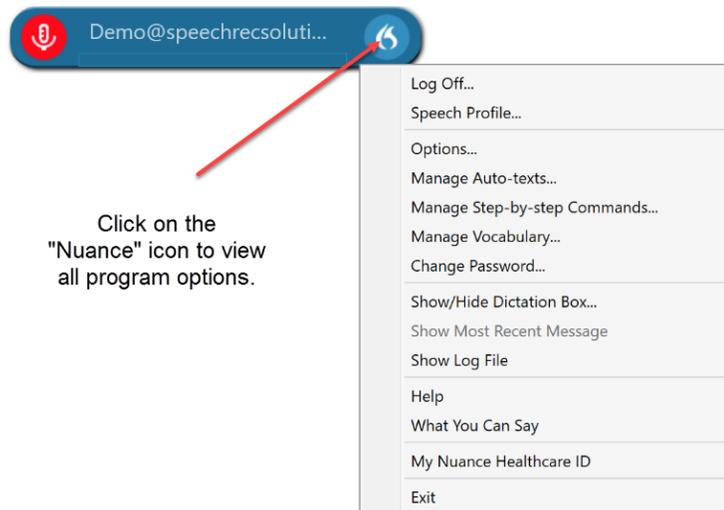ppear from view. It can be re-launched by clicking on Dragon Medical One icon in the tool bar on the right bottom of your screen. You should only minimize the console when you do not plan to use it. It needs to be visible to work.

Click on the "Nuance" icon to view all program options.

4. Nuance Icon: Clicking on the Nuance icon on the right side of the console provides you access to all configurable functions of the application as shown to the right.

Basics of Dictation

Once Dragon Medical One is opened, actual Dictation is as simple as this:

1. Turn on microphone using any of the methods described above
2. Place the cursor in the place you want text to be inserted
3. Talk

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It's as simple as that … but with a few caveats.

Optimizing Accuracy

Optimizing accuracy is the "Holy Grail" of speech recognition. And it's clearly in your hands. Here are the things you need to know to keep the process accurate:

- Speak with a normal volume (don't speak overly loudly or softly but in a simple conversational volume)
- Speak in phrases or complete sentences (it helps to think ahead before you begin dictating)
- Enunciate carefully! Without question, this is the most important key to high levels of accuracy. It is not necessary to speak slowly, as long as you are speaking distinctly. What you want to avoid is "mumbling".
- Use your microphone correctly. If using a headset, the mic element should be in the range of ¾ inch to 1 inch away from your mouth. If using a hand-held microphone, the proper position is typically in the 2-3 inch range. The proper range for a desktop microphone is dependent upon the design of the device.

Dictation Box: Basic Function

The "dictation box" is discussed up front both because is an integral part of Dragon Medical One, but also because it is likely to show up early in your use of the application and you should know why and what to do with it. In the simplest terms, the Dictation Box is a simplified word processing window into which you can dictate text which can later be transferred to a desired target document. The dictation box is not intended to be a stand-alone word processing window and you cannot save a document from it. When launched, either manually or automatically, the Dictation Box shows up directly below the Dragon Medical One control console.
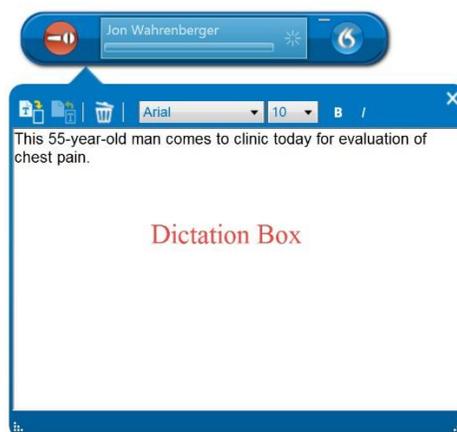
But the Dictation Box is more than just a simplified text entry box. It is also the place where DMO puts text when it can't go elsewhere – part of the "no speech lost" strategy and something you will come to appreciate.

There are several key things to know about the dictation box:

1. It is an environment in which Dragon Medical One works extremely well (no compatibility issues)
2. It will launch automatically if you are dictating into a non-compatible environment
3. It includes functionality which allows transfer of text from the Dictation Box to a desired location with a verbal command

Read more about the Dictation Box in "Advanced Topics" below, but for now realize that it is a useful aspect of Dragon Medical One which will become familiar to you.

Punctuation

Dragon Medical One is smart and highly accurate in creating text from speech, but it's not a replacement for your secretary. It won't correct your grammar and it does not know to add punctuation – it simply "types" what you say. It is necessary, therefore, for you to say required punctuation as you dictate.

To the right is an overview of common punctuation you may need. If there is something you need which is not listed below, chances are your best guess will work. A more comprehensive list of punctuation and special characters is listed in the appendix of this user guide.

Common Punctuation Commands	
New Line	Hyphen
New Paragraph	Question Mark
Comma	Exclamation Point
Period	Open Quote
Colon	Close Quote
Semicolon	Open Paren
Dash	Close Paren

Navigation

One of the beauties of DMO is the facilitation of navigating through a document by voice. This is helpful if you start you clinical note from a template and want to move sequentially through it as you document an encounter. Likewise, if you decide to insert something new into dictation you have already completed, you can move the cursor without touching the mouse.

- Navigation using predefined navigation fields: When movement through a document is planned, it is useful to insert navigation field into the template for a note. A field is defined by a left and right square bracket with optional enclosed text, such as "[text]".

  Moving sequentially through field can be done with voice commands as follows:

  Next field
  Previous field
  First field

SUBJECTIVE: [01]
OBJECTIVE:
Physical Exam: [02]
DIAGNOSES:
1.[03]
DISCUSSION: [03]
PLAN:
1.[04]

Navigate through predefined navigation fields using verbal commands ("Next Field", "Previous Field") or using a programmable button on either a hand-held microphone or PowerMic Mobile

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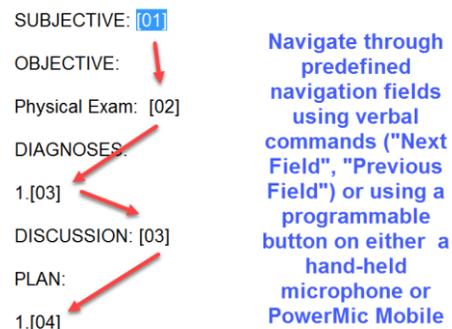
Last field
Accept defaults (removes all squared brackets)
Field complete (removes squared brackets only from selected field)

Navigation through fields can also be mediated by means of button depression on an attached hand-held microphone or by means of "virtual buttons" on a PowerMic mobile.

- Moving cursor to another location: Moving the cursor can be done by voice using the following commands (see appendix for a more expansive list of cursor movement commands):

Go to end of sentence
Go to end of paragraph
Insert before [text]
Insert after [text]

Editing, deleting and correcting text

While Dragon Medical One is amazingly good and won't misspell words, it will occasionally make a recognition error. Similarly, you might dictate something you want to change or delete. For these reasons, it's good to know the basic ways you can delete, change or correct text. Before reviewing these methods, it is important to realize that if the error was Dragon's (you said it correctly and DMO got it wrong) it is much better to formally "correct" the error rather than simply changing the incorrect word or phrase, so DMO learn and be less likely to make the same misrecognition error in the future.

What are your options when the wrong word or phrase is inserted by DMO? Here are the basic options:

Methods which change the word or phrase but no learning takes place:

1. Say "*Scratch that*", "*delete that*" or "*Undo that*" to delete the last thing you said
2. If a word is selected (either manually or by voice), say "*delete that*" or "*delete word*" to delete it
3. To re-dictate some text, select it by saying "*select <text>*" or "*select <text> to <text>*" and once selected, simply re-dictate.

Method in which DMO learns: To institute FORMAL correction (preferred method to avoid repeat misrecognitions), it is necessary to do the following:

1. Select the text to be corrected via voice command by saying either "*select <text>*" or "*correct <text>*". This will both select the text in question and bring up the "corrections menu".
2. The correction menu will show several alternative choices for the incorrect text and a few other options.
    a. If present, choose the correct text by saying "choose one", "choose two" as appropriate for the choice you desire

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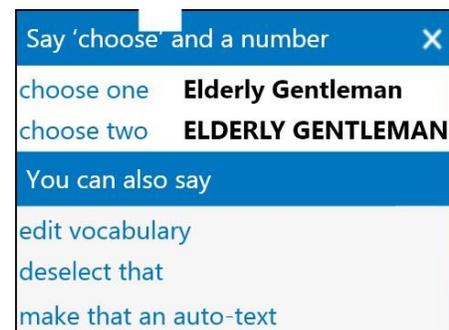
b. If the desired text is not listed in the corrections menu, you can either type or re-dictate the desired text
c. If you want to add the word or phrase to the Dragon Medical One vocabulary, say or select "add that to vocabulary"
d. The "make that an auto-text" function is used only if the phrase you selected is one which you use frequently and would like to trigger with a separate verbal command (see section on Auto-Text for more information on this.)

Controlling Dragon Medical One

There may be times when you don't want Dragon Medical One showing on your desktop but still want it available. The application can by minimized to the Taskbar by several means, including the following:

Hide Dragon Medical One	Make Dragon Medical One Visible
Say "Hide Dragon"	Say "Show Dragon"
Say "Close Dragon"	Say "Open Dragon"
Click on minimize icon on application	Click on app icon in Windows Taskbar

Other common DMO control functions are listed in the table below:

Command Name	Function or Action
Open dictation box	Opens dictation box
Close dictation box	Closes dictation box
Transfer text	Transfers text to target application
Discard Text	Deletes text in dictation box
Recall text	Rewrites text in Dictation Box
What can I say	Shows list of all commands, auto-texts, online help, and Manage Vocabulary page
Launch help	Opens Dragon Help
Manage vocabulary	Displays Manage Vocabulary Page
Manage words	Displays the Manage Words page
Manage commands	Displays the Manage commands dialog box
Manage Auto-Texts	Open the Manage Auto-Texts dialog box

When Dragon is minimized and visible only through the Taskbar, it will still work. While hidden, the microphone can still be controlled by a hand-held microphone and with a hot-key. The microphone status is indicated by the appearance of the icon in the Taskbar as shown below.

	Microphone Off
	Microphone On

Advanced Features

Although simple text dictation is what most users desire, familiarizing yourself with some of the advanced features of the application will go a long way in extending your productivity. Even if you decide to skip most of what follows, you are strongly recommended to at least skim the topics and read the section on creating text commands ("Auto-Texts"). This is the functionality that allows you to say "hypertension lifestyle measures" and instantly populate your note with documentation of the 10 minute discussion you had. Whether you think of this a method to get done a little earlier, to bill the visit at an appropriately higher level, or just better documentation is up to you.

You might also be surprised to know that creating a few step-by-step commands, which will take only a few minutes, will give you a quick way to open a folder, website, or application that you use regularly. Finally, if you really want to leverage your use of an EMR, you should be starting your notes with a template created within the EMR and containing "navigation fields" which will allow you to quickly work your way through a note in progress, dictating where you need to. Ten or 20 minutes of reading the topics below could easily contribute to saving you this much time every morning.

The Options Menu

As a reminder, all options and functionality beyond basic dictation are accessed by opening the DragonBar menu which is done by clicking on the Nuance icon on the DragonBar.

Click on the "Nuance" icon to view all program options.

You will see four general "Options" if you select Options from the drop-down menu. The following is provided as an explanation of the available options:

General Options:

1. Anchor the speech focus when
   recording is started: this is detailed below and when chosen means that text will flow to the window in which the cursor was live at the time the microphone was turned on even if that window is no longer on top or visible.
2. Voice commands: Visual Feedback – this gives you a visual feedback of a command completion and in a location of your choice. This is questionably useful feature since most commands accomplish something visible on your screen or computer and the secondary confirmation may be overkill.
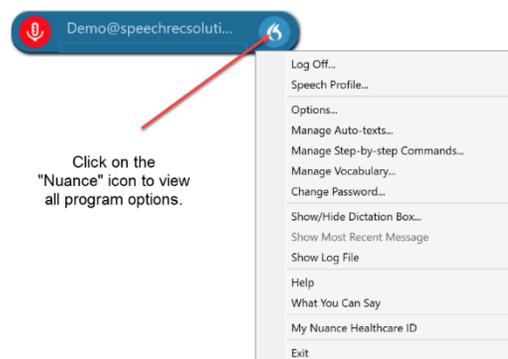
3. Voice commands: Audio feedback: this gives you the option of hearing a sound confirmation every time a command is recognized. Also perhaps overkill!

Auto-text field delimiters: Field delimiters are the symbols that define a "field" in DMO. A field is a place you can navigate to with a verbal command, hotkey, or push of a button on a handheld microphone. The default field delimiter is the left and right squared bracket, but you can change these if you prefer. If your application or document is already using squared left and right brackets for other functions (Epic does this with some aspects of a medication list entered into a note), this might be a good reason to change the default delimiter used by DMO. If you want, for instance, you can change the delimiters to double squared brackets ("[[ ]]").
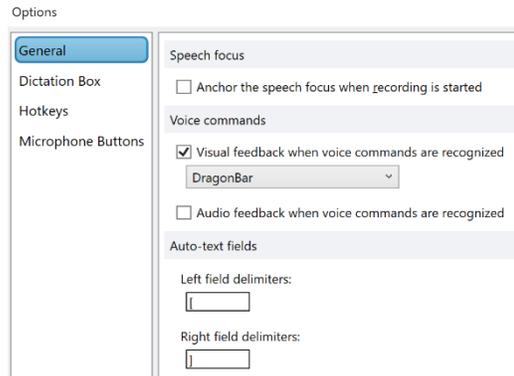
[Hint for Epic users: Epic uses left and right squared brackets on occasion in association with a medicine list inserted into your note. While this doesn't create problems when navigating through fields in a note (beyond the fact that you will cycle through these medications when navigating through a note), if you use the command "Accept Defaults" to remove any remaining field delimiters when your note is ready for signing, DMO will get stuck when it tries to remove the squared brackets around the medicines since they are not editable. One solution is to take advantage of Epics standard "wildcard" character (***). If you define the left field delimiter as a double asterisk (**) and the right delimiter as a single asterisk (*) this will allow you to toggle to standard Epic wildcards using DMO and define your own navigation fields containing text with the terminology of **text*.]

Dictation Box: As you will see, there are several configurable options related to the dictation box. The dictation is an optional text entry window which is used as a storage area for text before moving it to its final resting area. Most of the options in this area will be chosen based on your preferences and also based on what method will most successfully move text to your desired location.

Text Transfer Method: A series of methods to transfer text to its intended destination are offered for an important reason. Not all word processing environments on your computer will allow all means of pasting or transferring text. It may be necessary, therefore, for you to experiment a bit with the listed methods until you find one that works, or works best. The "Simulate Keystrokes" is generally the last resort since it tends to be slow.

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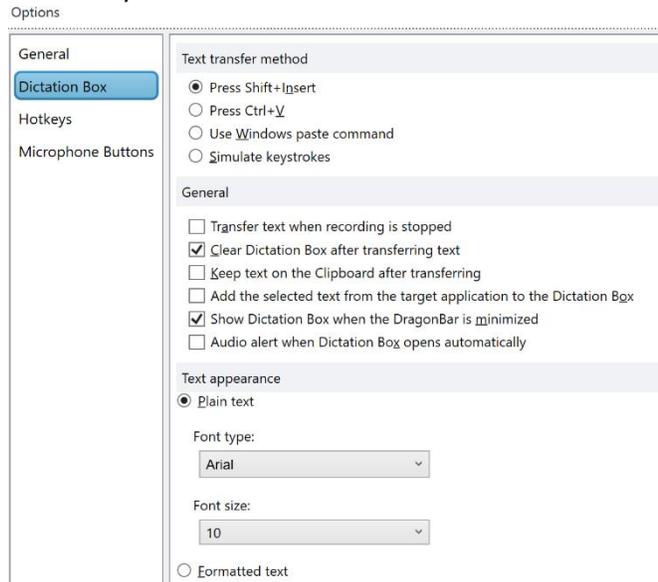
General: The aspects of Dictation Box behavior listed in the general section is very dependent upon your preferences. If you find that there is any lack of reliability in the transfer of text, we recommend that you choose the "Keep text on the Clipboard after transferring" since this will keep your text in the Windows clipboard and available for your manual transfer if anything goes wrong.

Text Appearance: You have two choices in this regard – either to specify the font and font size of text which appears in the Dictation Box (this is the way it will appear when transferred), or you can select "Formatted text" which will provide some controls in the dictation box to affect font characteristics, including font type, size, and use of bold and italics.

Hotkeys: This area allows you to define a number of behaviors by means of a keyboard hotkey combination. This is fairly self-explanatory.

Microphone Buttons: This area has the potential to show two different behaviors. If a recognized hand-held USB microphone is attached and is your chosen microphone, it will show a representation of the device and offer you programming choices for 6 buttons on the device.

See section below for more details on how to program buttons.

Programming a Button on a Hand-Held Microphone

In addition to the convenience of not having to wear a microphone, hand-held microphone offer the advantage of programmable buttons that can trigger functionality with a simple press. If you've been provided a Nuance PowerMic or Philips SpeechMike, you need spend only 3-4 5 minutes to learn how to program the buttons. It's something your 10-year-old could figure out in a flash, and so can you! Dragon Medical One is configured to work with two commonly used hand-helds: the Nuance PowerMic (both PowerMic II and PowerMic III) and Philips SpeechMike Premium. Elsewhere in the guide information is presented on the merits of each product, but for now let's focus only how to program them.

Button Programming Options:

The central "Record" button on the PowerMic II, PowerMic III or SpeechMike Premium can be programmed in one of two methods:

- Press-and-hold (push to talk function)
- Microphone on/off (press once to turn on; press again to turn microphone off)

Which of the above methods should you program to the key? The advantage of the Press-and-hold set-up is that the microphone is hot only when you are pushing the record button. The moment you let go the microphone is turned off. This method is particularly beneficial if you are dictating in a loud environment and want to minimize the time the microphone is hot. The advantage of the microphone on/off programming is that once you turn the microphone on by pushing the record button once, you can let go of it and relax. If you are in a quiet environment and typically dictate for long periods of time, this is the preferred way to program the record button.

 Potential options for the other three buttons include:

- None (no function to pressing the button)
- Transfer text
- Clear Dictation Box
- Anchor/Release speech focus
- Recall Text
- Show/Hide DragonBar
- Show/Hide Dictation Box
- Next Field
- Previous Field

- Field complete
- Accept defaults
- Press Hotkey (allows you to assign a key or key combination to a button push – useful in emulating a key combination used to navigate in many EMRs)

- Step-by-step command (choosing this brings up a list of all your personalized step-by-step commands which you can assign to the button)

Mechanics of Programming a Button: Adding or changing the programming on a hand-held microphone being used with Dragon Medical One is a simple process and involves the following steps:

1. Be sure the microphone you plan to program in attached and the active microphone for DMO
2. Open the DragonBar menu by clicking on the Nuance icon
3. Select "Options" > "Microphone Buttons"
4. At this point you should see a visual representation of your microphone and available buttons which can be programmed. For all button the central record button, you can select any of 13 behaviors or actions to be applied to the button. For the central record button you have only the option of Microphone On/Off or Press-and-hold.
5. For your desired button select the desired behavior from the drop-down menu associated with that button.

Note that two of the functions which can be chosen (Press Hotkey and Step-by-Step Command) will require additional input (see image at right).

- In the case of the Press Hotkey selection, you will need to specify the combination you want to initiate with a button push. You'll need to enter the key before you enter the "modifier" (ctrl, alt, shift).
- In the case of programming a button to initiate a step-by-step command, upon selecting this you will be provided with a list of all available step-by-step commands and will need to select the
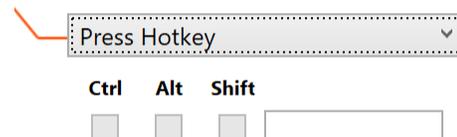
desired command to associate with the button push. Please note that if you have not yet created any step-by-step commands, there will be none to choose.
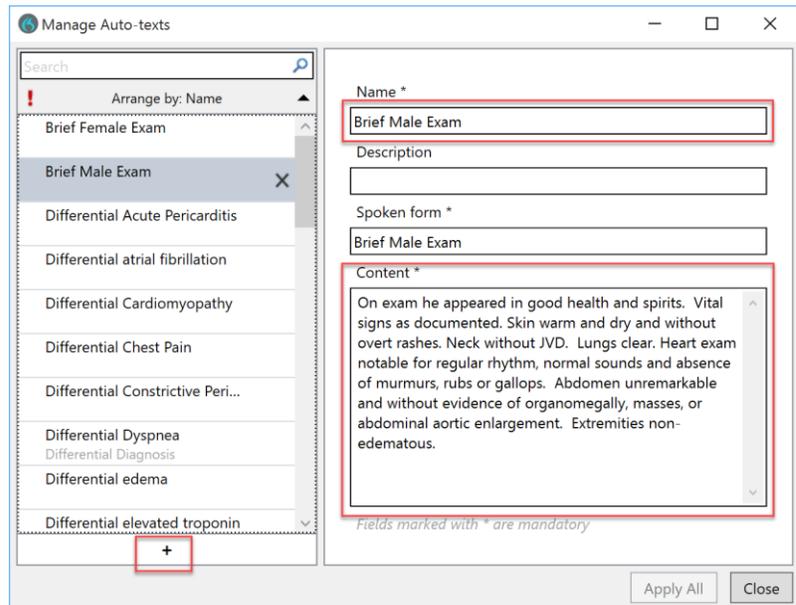
Managing Auto Text

An Auto Text is the equivalent of text commands or text macros in the full NaturallySpeaking application.   In some respects they are also similar to shortcut used in many EMRs that allow you to insert a bunch of prespecified text with the entry of some keys as a short-cut, but the initiating action is an utterance on your part and not typing. Use of these are an essential productivity enhancer in medical dictation. Use of auto-texts allow you to insert chunks of text – anything from a short phrase to multiple paragraphs – with a single voice command or utterance. This is a huge time-saver in documenting things you tend to do in a similar way on a regular basis, such as documenting a procedural consent, aspects of an exam, or a common type of counseling discussion.

Using an Auto-Text: Once built, using a command is as simple as saying the name of the command with a slight pause before and afterwards.

Building an Auto-Text: Building an auto text command is as simple as this:

1. Click on the Nuance icon on the Dragon Medical One console
2. Select "Manage Auto Texts …"
3. Begin a new auto text by clicking on the "+" button on the bottom left
4. Provide a name for the command (this is the terminology that will launch the command so keep it simple and something correlating with the content of the command.
5. Optionally add a description of the command
6. Add to the "Content" area the text you want inserted when the auto text is initiated
7. Click on the "Apply All" button to save the command

Creating an Auto Text command on the fly: simply select the text you want to turn into an auto text and say "*make that an auto-text*"

Editing Auto Text commands: This is done by opening the Manage Auto Text window as above, selecting the command from the list on the left, and then editing any part of the name, description or content.

Step-by-Step Commands

Overview:

Step-by-step commands are an extremely useful way to accomplish a variety of tasks with your computer and with your EMR. The potentials range from a simple command to open a folder or website your visit regularly, to adding structured data from your EMR into a note in progress, to navigating within your EMR, to complex multi-step commands which lead to complex sequential actions. The beauty of the process is that you don't need to know anything about computer programming, but simply learn the six categories of steps which can be created. Each of these six categories involve actions which can be customized to your needs. Like other aspects of using Dragon Medical One, your 10-year-old daughter could figure these out. They are not hard!

Commands can be created to do the following by means of voice:

- Insert text (see information on Auto Text above)
- Open any program, document or web page
- Control the microphone
- Press any key or key combination
- Combine any of the above into more complex sequential processes

Creating a Command

Creating a new command requires the following steps:

1. Click on the Nuance icon on the Dragon Medical One console
2. Select "Manage Step-by-Step Commands …"
3. Click on the "+" symbol on the bottom left
4. Provide a name for the command (this is the verbiage which will launch the command) and type this in the appropriate box on the right side of the screen.
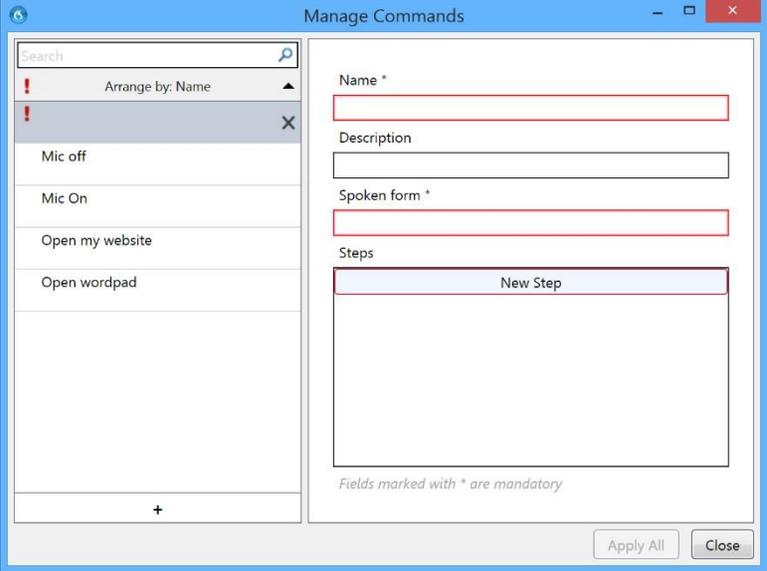
Copyright 2017, Speech Recognition Solutions, LLC

5. Click on the area entitled "New Step"
6. From the drop-down menu select a line appropriate for the type of action or command you are planning

    *   Open application: this is used to create a step which opens a document, application or web page
    *   Wait: this creates a time delay in waiting for one step to complete before moving on to another step. The time is measures in milliseconds, i.e. 1000 ms = 1 second. The allowable range is 50-2500 ms.
    *   Enter Text: this is used to enter some discrete text and is intended for only short lines of text (use Auto-Text, described above, for inserting large amounts of text)
    *   Press Keys: although superficially similar to "Enter Text" this function is designed for situations in which a key depression is actually controlling a process rather than simply adding text.   The Press Keys function can allow entry of keys not necessarily viewable on your keyboard. See the appendix for a list of keys and modifiers.
    *   Press Hotkey: designed for situations in which a key combination is required such as "ctr + p" to send a print command or any combination in which a key is combined with a control, alt or shift key.
    *   Microphone on or off: sometimes these steps can be the intent of the command. In other situations, particularly in commands with long sequences of steps during which you don't want the microphone active as the command is going through its sequences, you might want to turn off the microphone at the beginning and then back on again at the end. In so doing, it prevents inadvertent sounds from influencing things during the course of a long sequential command.

7. Sequentially click on the add step button to add further steps
8. If necessary, add a "wait" step to provide any needed pauses in the command sequence
9. If necessary change the order of the steps, using up and down arrows
10. Click on "Apply All" to save the command

Sample Command: Printing a Document

The command shown to the right is designed to print the current document and has five steps, including:

Step 1: turn off the microphone

Step 2: send the key combination control + p to open the print window

Step 3: wait 1 second

Step 4: Press the Enter key to confirm the print instruction

Step 5: Turn the microphone back on
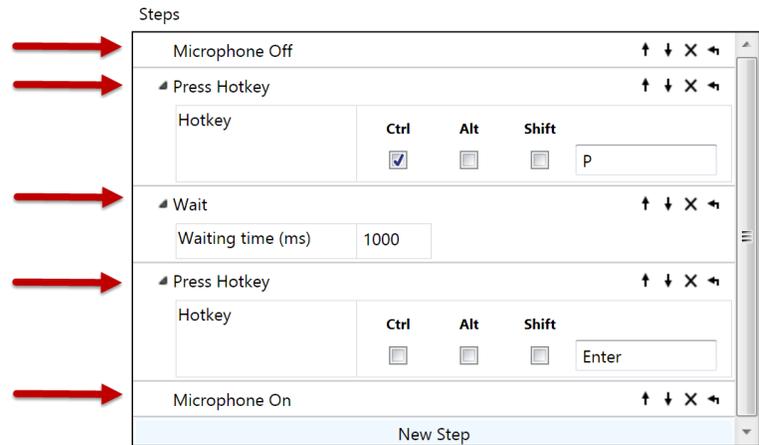
Sample Command: Open a web page or Folder

Creating a command to open a web page uses the "open application" functionality in a step-by-step command and this is done by adding a step and then simply pasting the URL for the web page in the box. See example to the right. The same principle can be used in creating a command to open a specific folder on your hard drive. In this case you need to paste the formal path to the folder, such as: C:\Users\jon w. wahrenberger\Documents\Speech Recognition Solutions

Sample Command: Emulating a "dot phrase" in the Epic EMR

For the Epic users out there, you know that a "dot phrase" or SmartPhrase is the mechanism by which you can initiate the insertion of text, a note template, or structured data by typing a "." (dot) followed by specific letters and then hitting the enter or return key. The example shown here is fairly universal and can be applied to any of your dot phrases simply be changing the text to be typed during one stop. For this example, let's say you want to create a command that will insert the patient's most recent labs, which involves tying .LAB followed by an enter or return key. Here's how you would create the step-by-step command from scratch:

1. Navigate from the DragonBar menu to Manage Step-by-Step Commands
2. Click on the small "+" on the bottom left of the Manage Step-by-Step commands page
3. Name the command "Insert Labs" (type this into the name section)
4. Click on the "new step" button

5. From the drop-down menu, select "Press Keys"
6. Type ".Labs" (commands are not case sensitive, so type it any way you want)
7. To accept and move to the next step, click on the "new step" button again. The first step will be saved
8. For the next step, select "Hotkey" from the drop-down menu. By default, the cursor will be in the text entry box
9. Press the Enter key on your keyboard. The word Enter will now populate the text box
10. (It is not necessary to click in any of the hotkeys modifier boxes)
11. Since the prior step represented the final step, click on the "Apply All" button.

When done, the command should appear at pictured below. Hereafter, when in the Epic EMR you can initiate the SmartPhrase by saying "Insert Labs".

Fields marked with * are mandatory

Working with the DMO Vocabulary

Although you might think that having every word under the sun available when dictating with Dragon Medical One would be ideal, this turns out not to be the case. Since every language is ripe with words that sound alike and words that are unlikely to be used, having too many words can lead to wrong decisions by the application. What you really want is list or "Lexicon" of words you are *likely* to say, and not extraneous words you will never say. This is the point of having different clinical vocabularies to choose when you open DMO. The vocabulary not only contains a list of words, but also an associated statistical likelihood that such a word will be used. So in this regard it is important to select the vocabulary appropriate for your needs. If a cardiologist and dictating cardiology notes, you should definitely be using the cardiology vocabulary. On the other hand if you switch to dictating an email to your college roommate, you should switch to the non-medical vocabulary.

Overview: Although the basic specialty vocabulary you chose with Dragon Medical One has a wide selection of words, it may not contain certain words that may be important to you, including:

- Newly released drugs
- Names of local hospitals
- Names of colleagues to or from which referrals occur
- Names of specific locations at your office or medical center

Adding Words: Words can be added to the vocabulary by two means:

- Using the vocabulary editor which is launched by saying "Edit Vocabulary" or "Manage Vocabulary". Image at the right shows the appearance of the editor. Simply enter the word you want to add and click "Add". For unusual words, you should enter both a written and spoken form.
- Centrally, by your institutional administrator (large lists of words can be added for specific users or groups of users)

Here is the basic mechanism to add a word:

1. Open the vocabulary editor either by voice command (Add new word, edit vocabulary, or others) or by navigating to DragonBar Menu > Manage Vocabulary
2. Click on the small "+" symbol at the top right to open Add Word functionality
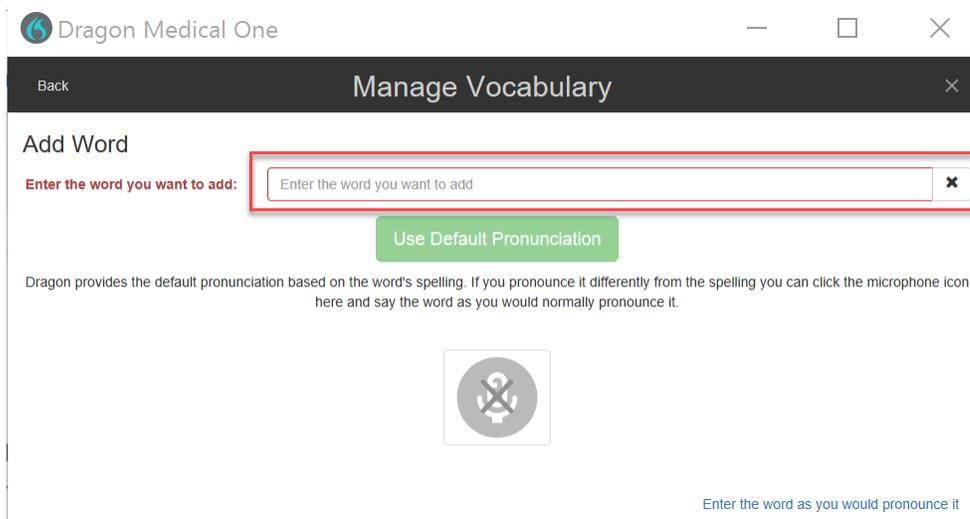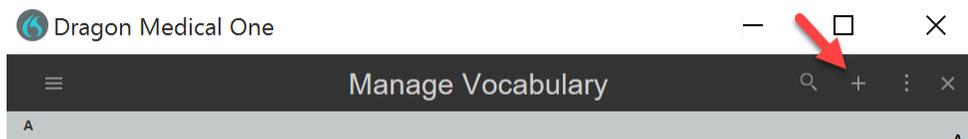
3. Enter the word
4. Optionally train it, add a pronunciation, etc. (see additional sections below)

5. Complete the addition by either clicking on "Use Default Pronunciation" or "Enter the word as you want to pronounce it"

Managing existing words in the vocabulary: words can be easily deleted, edited or trained from within the Manage Vocabulary function. Open the vocabulary as described above, select the word or words, and then click, "Delete", edit (pencil icon) or train (microphone icon) depending upon your needs.
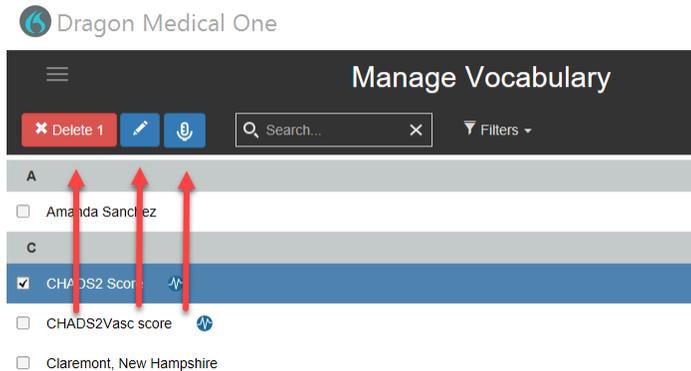
Training a word:

Since the main reason for adding a word is that it's not already in the DMO vocabulary, it is almost certain DMO will not enter word when you say it (it only takes words from its built-in vocabulary supplemented by words you have added) or, more likely, enter something else that sounds like the word or phrase you used. For this reason it is useful to train a new word when adding it to your vocabulary. Similarly, if there is an existing word that DMO does not uniformly get right, it is helpful to formally train the word.

When adding a new word, you will always be given the opportunity to add a pronunciation by clicking on the microphone icon.

Ope

Written versus Spoken Form: Some words, particularly local colloquialisms and unusual proper nouns, may be written different than they sound and may be hard for DMO to get right. As an example, in a local medical center the surgical recovery room is formally call the Post-Anesthesia Care Unit and nicknamed PACU. If you dictate the acronym "PACU" is it likely that DMO will hear and write "pack you". Another example is the author's last name, Wahrenberger, which sounds like and will

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likely be interpreted by DMO as Warren Burger. For situations like this it is possible to enter separate "written" and "pronounced" version of a word or phrase.   The concept behind this is that when DMO hears the words as pronounced, it knows to write the word in the desired written form.

Let's briefly walk through the process of adding a written and pronounced form of "PACU". These would be the steps:

1. Open the vocabulary editor by selecting "Manage Vocabulary" from the DragonBar menu (alternatively simply say "Add new word")
2. Click on the "+" sign on the top right of the Manage Vocabulary window; the word addition dialog box will appear
3. Enter the word as you want it to appear
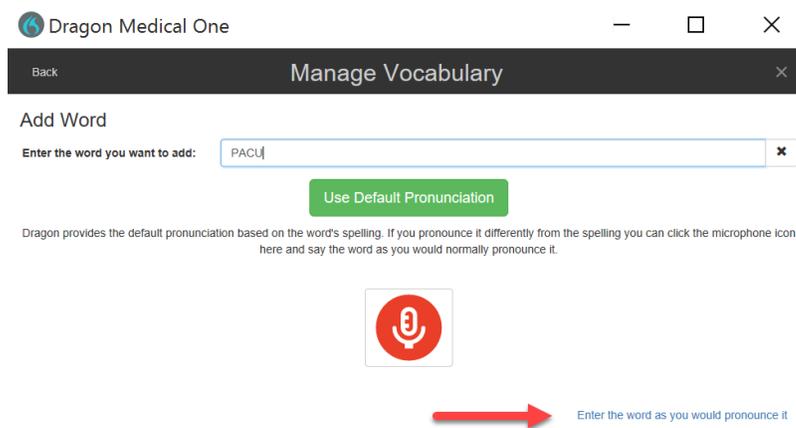
4. At the bottom right click on the link "Enter the word as you would pronounce it" (see image above); the box will change and provide you a place to enter the word as pronounced
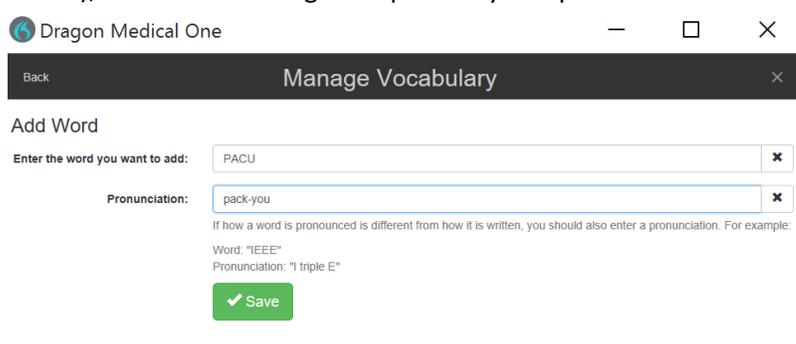
5. In the text entry box labeled "Pronunciation", enter the word or phrase as it sounds. You need to be thoughtful about this. Keep in mind that it's best to define the pronunciation with actual words and made up words or phrases.
6. Click on the "Save" link

Deleting a word from the Vocabulary

Deleting one of your custom added words from the vocabulary is easy. Simply open the vocabulary editor, select the word, and then click on the trash can icon on the top right of the editor.

Delete a word from the built in DMO vocabulary is slightly more complex and unfortunately there is not a mechanism to view the entire vocabulary. To delete a built-in word, open the vocabular editor, click on the vertical dots icon (see image below), click on delete, and on the subsequent screen enter the word you want to delete and
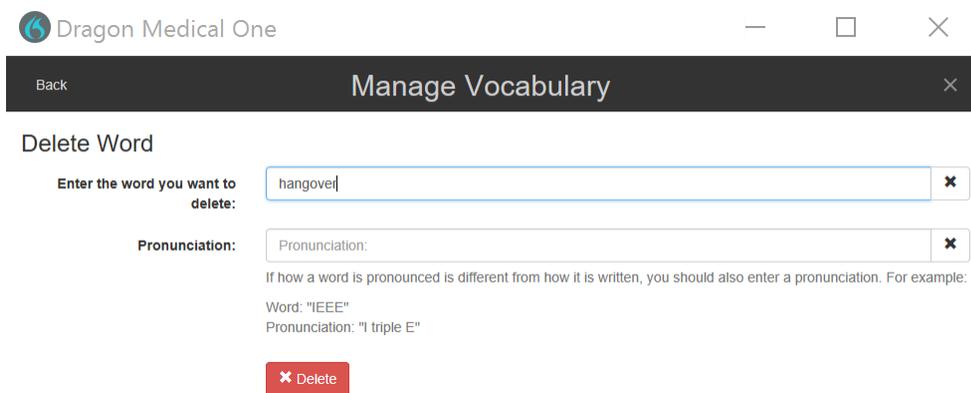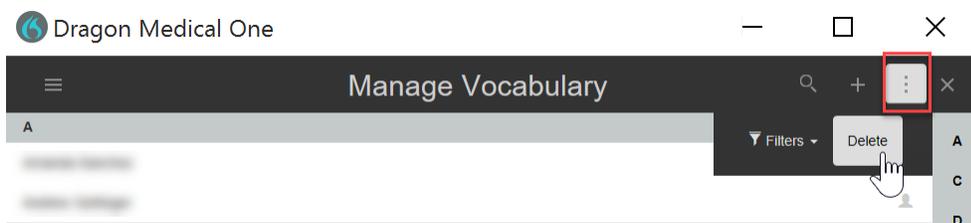
Changing the Default Vocabulary

Choosing the default vocabulary: Each time you log on to Dragon Medical One you are given the choice of vocabulary and the last one you chose will be selected by default. Since the chosen vocabulary directs DMO to weight words from the chosen vocabulary preferentially, it is very important to select the vocabulary appropriate for your specialty and intended dictation.

If, by chance, you intend to dictate non-medical material, you should select the "Clinical Administration"

Changing the vocabulary: if you have reason to change your vocabulary while Dragon Medical One is already running, you can change your default vocabulary by one of two methods:

- Select "Speech Profile ..." from the Option menu (quick and easy)
- Log off and log back on (slow)

Incidentally, you can use the same method to change your microphone during an active session with Dragon Medical One.
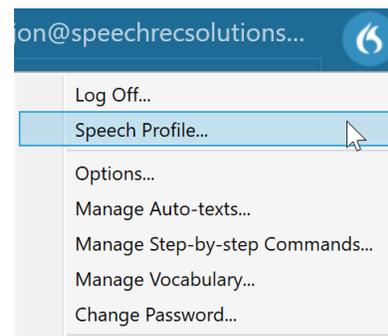
Using the Dictation Box

Overview: The built in "Dictation Box" is a small text entry window that can be used any time as a place to store dictation. When Dragon Medical One is being used in an environment in which it is not compatible (some text entry windows or word processing environments) the dictation box will automatically launch and capture text. When text is captured in the dictation box it can be moved to another location using several means:

1. Manually move to the place you want the text inserted (place cursor where it should go) and say "transfer text" or click on the Transfer Text button on the Dictation Box

2. Manually copy and paste material from the Dictation Box to your desired location

The dictation box is also highly useful in the scenario in which you are using the local version of DMO and yet needing to move text into a server based DMO. Techniques and strategies for this situation are covered separately in this guide.
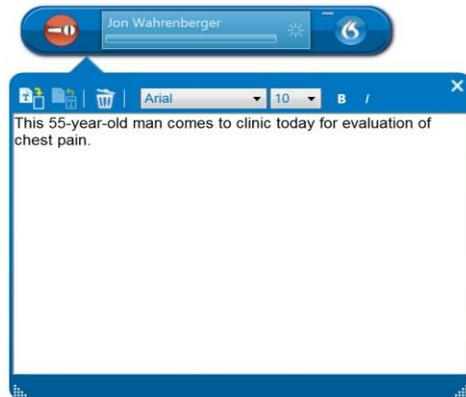
In general, you should use the dictation box only when necessary and forced to be virtue of your target window not being fully compatible with Dragon Medical One

Controls on the Dictation Box:

- Transfer Text button transfer text to the anchored text entry window
- Recall Text button recalls text that was either transferred or deleted. This is useful if you accidentally delete text or the transfer doesn't happen as you expect.
- Trash Button: deletes the contents of the Dictation Box
- Font controls: these are present only if you have selected "Formatted Text" in the Dictation Box section of the General Options menu. This gives you the ability to select font, font size, and either bold or italics options.

Configuring the Dictation Box: You will notice that the Dragon Dictate Options menu has an entire section devoted to the Dictation Box (pictured adjacently). These are important setting and it is worth taking the time to understand these settings.

- Text Transfer Method: the method you use to transfer text from the Dictation Box to your word processing document (or other window) is critical only in that you want to select a method that works in the context of your application. Any of the first three listed method are quick and efficient and should be chosen over the "Simulate Keystrokes" method. The "Simulate keystrokes" should be considered the method of last resort since it is very slow.
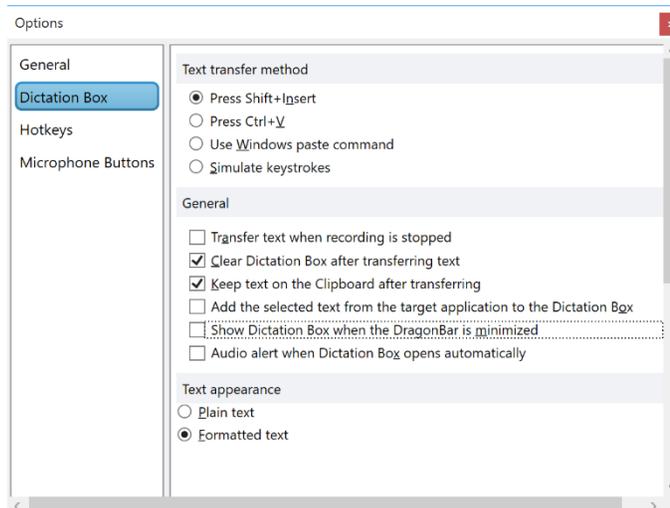
- General: the "General" settings are very important and impact your ability to recover text from the dictation box once you have applied "Transfer Text" command. Personally, we prefer the settings shown above. Keeping the text in the clipboard allows you the option of pasting from the Windows clipboard (ctrl + v), if anything goes wrong. The "Add selected text from the target application" provides that any text you have selected in your target application will populate the Dictation Box when opened. This is useful if you are selecting a note template in your target application but want to work with it (add text) in the dictation box.

- The "Text Appearance" section seems a little counterintuitive. When the "plain text" radio button is selected, you are given the option of determining the font and text size from the options menu but not from within the Dictation Box. When the "Formatted text" radio button is selected, the Dictation Box is changed slightly and allows determination of text size and font on the fly from within the Dictation Box. Either way, it seems that what shows up in the target window is what you see in the Dictation Box, so we're a little puzzled by the use of the "plain text" option.

"Anchoring" Dictation Focus

An *extremely* useful function available within DMO is the ability to "anchor" the focus of dictation. When Dragon Medical One is anchored to a text entry widow, it means that dictated text will flow to this window even if the window is no longer the active window on your computer desktop. This is highly useful if you want text to flow to one window (perhaps a note in progress) even while you are browsing through other windows in the electronic medical record. Anchoring is confirmed by the appearance of a lock symbol on the microphone-on symbol as shown to the below.

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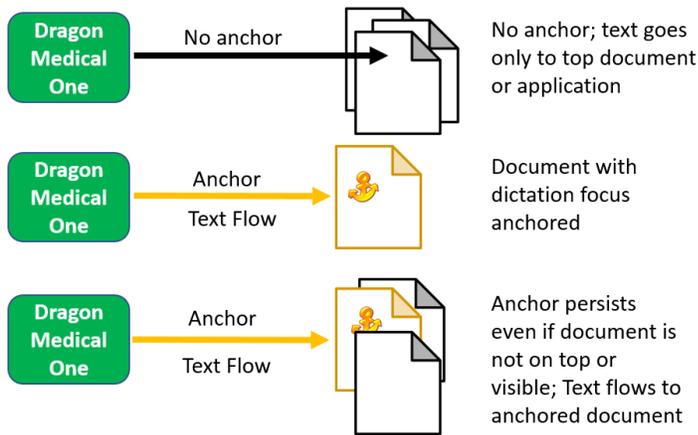
There are two ways to anchor Dragon Medical One to a window:

1. Assign it as a default behavior: this is done by selecting "Anchor the speech focus when recording is started" from the options menu (Nuance icon > General Options). In this scenario, Dragon Medical One will be anchored to application in which the cursor is placed at the time you turn on the microphone. This disadvantage of this is that if you turn on the microphone while outside of the document in which you plan to insert text, you will have undesired results.
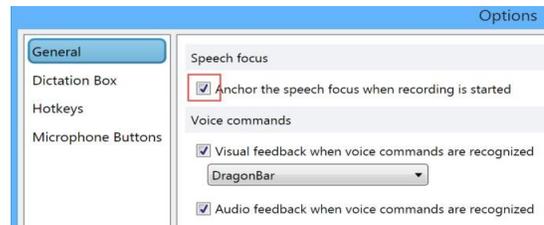
2. Anchoring "on the fly" by use of a hot-key combination or verbal command: If you haven't set anchoring as a default behavior as shown above, you can create an anchor using two additional methods:

   • Say "anchor speech focus"
   • Use the default key combination ctrl + alt + A. This hot-key combination is set by default, but can be changed by going to the hot-keys settings area (Nuance icon > Hot-Keys)
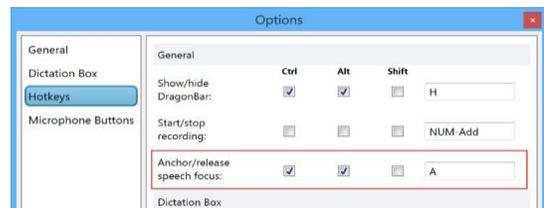
Using Hot-Keys

Keystrokes instead of voice: One of the not-so-obvious and yet potentially highly useful features built into Dragon Medical One is the ability to initiate both DMO and other computer functions by means of hot-keys. In general, a hot-key is a keystroke combination of a normal keyboard key plus a modifier key such a control, alt, shift. DMO comes with a variety of pre-specified hot-keys to initiate basic DMO functions. For every one of these functions there is also a verbal command that can initiate the function. As an example you can transfer text from the dictation box by saying "Transfer Text" or by depressing Ctrl + Alt + T. You might be asking yourself why you need a hotkey

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combination to initiate something which could be done with a verbal command. There are several potential answers:

1. Because you can't remember the verbal command
2. You want to save your voice
3. You want to initiate an activity or function that might otherwise be hard in your environment
4. You want DMO to do something, but your microphone isn't currently connected

Creating Hotkeys: The hotkeys menu is reached by navigating from DragonBar Menu > Options > Hotkeys. Upon doing this, you will see the default hot-key assignment shown below. Assigning a hotkey to a DMO action is as simple as 1) assigning a key, assigning modifiers, clicking "Apply All". See below for information on assigning a hotkey initiation to one of your step-by-step commands. Editing a hotkey involves nothing more than opening the hotkeys menu and changing the existing hotkey selection.
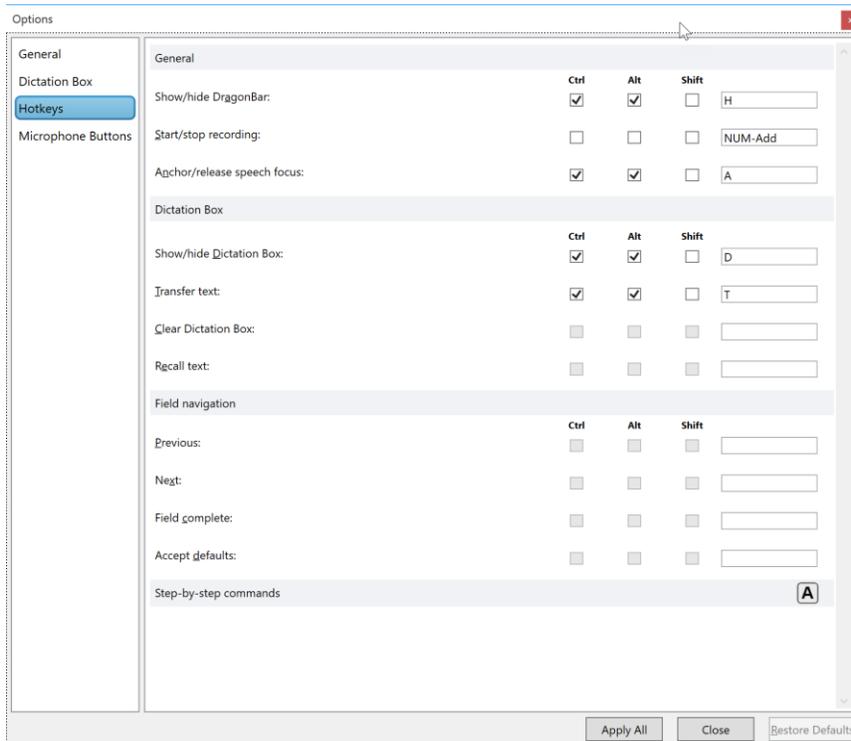
Whether you choose to initiate any of the specified action with a verbal command or a hot-key combination is purely a matter of preference.

Hotkeys for step-by-step commands: For those using DMO in a server based version, there is a special advantage in using the category of hot-key shown at the very bottom of the Hot-Keys Options Menu – the ability to assign a hot-key function to any of your step-by-step commands. How might this be useful? Consider for a moment you are working on a "thin client" work-station and

have limited access to other computer resources, web pages, etc., simply because these not being presented to you on thin client. Perhaps there is a webpage such as UpToDate.com you like to visit. If you create a step-by-step command with a single "Open Application" step and define the desire webpage as the "target" and then assign a hot-key combination to this step-by-step command, you can use either a verbal command or hot-key combination to open the application from the thin-client (or any) computer. The process of assigning a hotkey to a step-by-step command is done as follows:

1. Navigate from the DragonBar Menu to Options > Hotkeys
2. Click on the "A" symbol at the bottom right of the Hotkey menu which is to the right of the Step-by-steps area. You will be presented with a list of all your step-by-step commands
3. Select the desired step-by-step command
4. Assign a unique key combination
5. Click "Apply All" at the bottom of the Options box to complete the process
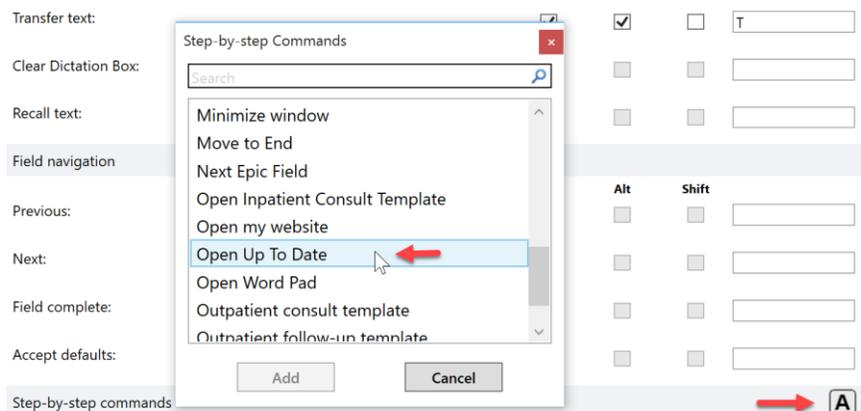
Working in a Non-Standard Application

How do you handle working in a non-standard application, by which we mean one in which Dragon Medical One cannot directly place text? This might be a new application on your computer which is not recognized by DMO. Alternatively, perhaps you have the local version of DMO but your EMR is on a server. If you've ever been in such a situation you might be thinking you are stuck. Maybe, but probably not.

In situations like this it is time to finesse your use of the Dictation Box. Remember the Dictation Box? The paired down word processing window into which DMO places text when it can't go to the application where your cursor is situated. Resolution of the non-standard application situation involves three considerations:

1. Use the Dictation Box to your advantage
2. Learn the best way to move text from the Dictation Box to your EMR
3. Develop an overall workflow that makes the process quick and seamless

Let's consider each of these needs separately.

Treasure the Dictation Box: Nuance didn't make the Dictation Box the default bucket for what would otherwise be orphaned or lost text by accident. It was by design. And it is much to your advantage when you are dictating in an EMR housed in one of 30 servers in your medical center basement and DMO is sitting on your laptop. As you develop the workflow described later in this session, consider the Dictation Box a reliable partner in the process.

Moving Text from the Dictation Box to EMR: This is an essential step in the workflow. The issue is how best to transfer text from the Dictation Box to your EMR. As you learned in the section above dedicated to the dictation box, you have several methods to make the transfer happen. But realize this, Nuance didn't create multiple methods just to give you choices. There are multiple methods because there is no 100% certain method to transfer text that will work in all software scenarios. The good news is that there are only 4 possible methods a with a few minutes of trial and error, you can figure out which method works for you.

Text transfer method

○ Press Shift+Insert
◉ Press Ctrl+V
○ Use Windows paste command
○ Simulate keystrokes

The image to the right comes the Dictation Box section of the DMO Options menu. What I can tell you about the 4 methods is this: any of the top 3 are preferable to the bottom method (simulate keystrokes) because they are dramatically quicker. But when the top three methods fail, the "simulate keystrokes" method is typically always a slow but workable method. So, try transferring text from your Dictation Box to your target application with each of the top three methods first. If one works, go with it. If none of the top three works, you're stuck with the Simulate Keystrokes method.

DMO Dictation Box   Potential Transfer Methods   Target Doc in EMR
(Dictation Box Options)

Sample text in Dictation Box.

Once you have placed text in the Dictation Box by dictating, typing or pasting, then try each of the transfer text methods. The goal at this time is only to test the methods and not to worry about what you are transferring.

Remember there are multiple ways of initiating the transfer. These include:

1. Clicking on the transfer text button at the top left of the Dictation Box

2. Issuing the command "Transfer Text"

3. Using the Transfer Text hotkey (Ctrl + Alt + T)

4. Pressing key on a handheld microphone assigned to the Transfer Text function.

Press Shift + Insert

Press Ctrl + V

Use Windows Paste Command

Simulate Keystrokes

Tweak the Workflow: Once you've figured out the best way to transfer text reliably from the DMO Dictation Box to your EMR, it's time to figure out how best to streamline the process. Here is our suggestion:

1. Use a note template within your EMR and place navigation fields in the template which can be cycled with a keystroke combination. In Epic, for instance, the presence of a triple asterisk (***) is a built-in navigation field or "wildcard" to which you can navigate forward with an F2 depression and backwards through fields with a shift + F2. Place these navigation fields at the places you will plan to stop and dictate text.

2. Build a DMO step-by-step command to or initiate the keystroke to cycle forward and backward through fields. If you are using a hand-held microphone, program a couple of keys to emulate the EMR navigation field movement.

3. It is recommended that you make one additional tweak to the Dictation Box to assure that if your navigation field is selected when you begin dictating that the actual field text is not transferred to the Dictation Box. See image below:
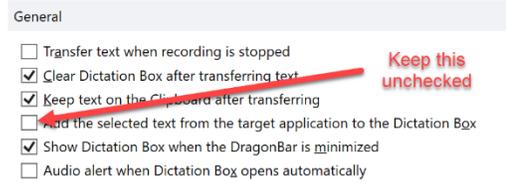
4. Use the following work-flow upon opening a note on the EMR with navigation fields present:

   - Move to the next navigation field by voice
   - Begin dictating (Dictation Box will launch and capture text)
   - When done with dictation, say "Transfer Text" to initiate transfer to EMR
   - Repeat the steps listed above
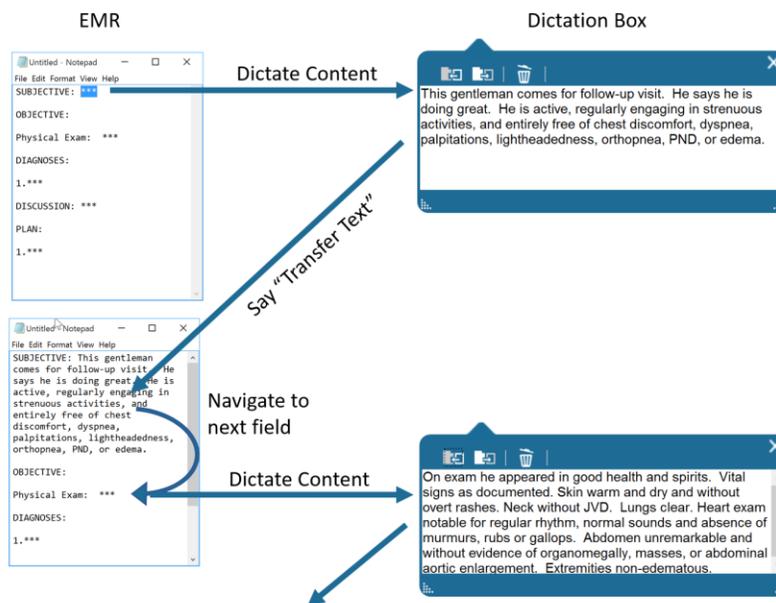
For a demonstration of this workflow, please visit www.speechrecsolutions.com/dmodictationboxdemo

Microphone Considerations

While Dragon Medical One is amazingly independent of user voice qualities, accent and automatically adjusts for both incoming sound volume and user accents, like any speech recognition product, its accuracy will be influenced by the quality of the incoming signal. For this reason, it is important to use a good quality microphone and to place it a proper distance from your mouth. The quality of a microphone is even more important if you are using Dragon Medical One in a loud environment with significant contaminating noise. High qualities microphones are generally superior in external noise rejection.

General Microphone Considerations

1. Dragon Medical One will sense microphones slightly differently when run in the server and local manner.
    - When run locally ("click once" method), DMO will automatically detect both your computer's on-board sound card and any USB sound adapter plugged into a USB port on your computer. When launching DMO you will have the option to choose any of these attached microphones. Please note: DMO does not currently have the capability of using the signal from a Bluetooth microphone (an exception is the rare "Bluetooth microphone" that is using Bluetooth frequencies but integrating with a pre-pared USB Bluetooth dongle. In this scenario you may be able to use the Bluetooth microphone.)
    - When running on a server, you will have the choice of two microphones: 1) PowerMic Mobile and 2) your computer's default microphone. If you are not seeing the microphone you have attached to your computer, then you should go to the Sound control panel and be sure it is selected as the default microphone by your operating system.
2. In general, microphones interfacing via USB will provide a more reliable signal for use with speech recognition software
3. Any commonly sold headset microphones will work with Dragon Medical One; remember, though, that not all microphones are the same and a higher quality headset will tend to have a microphone element that is more accurate and rejecting of external noise. See our suggested headsets listed below.
4. Hand-Held: Hand held microphones which we have specifically tested with Dragon Medical One, and which work well, include the Nuance/Dictaphone PowerMic II and the Philips SpeechMike Premium (LFH 3500). Although the Olympus DR1200 will be able to provide sound to the application, it will not allow programming of buttons
5. Wireless: A wireless microphone which interfaces with a small USB dongle and which works extremely well with Dragon Medical One is the VXI VoxStar. The Voxstar can be used either mounted to the headset frame (and head-worn), or in a handheld manner if detached from the frame.

6. The PowerMic Mobile is an optional microphone which involves using your mobile phone as a wireless microphone. This does not come for free and requires a special subscription from Nuance. Refer to the dedicated section on the PowerMic Mobile shown below.

7. Table-mounted microphone: Some commonly used desktop microphones, all of which work wonderfully with DMO are the SpeechWare TableMikes and Buddy DesktopMic. The entire SpeechWare "TableMike" series, including the low profile and portable "TravelMike" all work extremely well with Dragon Medical One are our favorites.

8. Local versus server version considerations: be aware that microphone integration is dramatically simpler when using the local version of Dragon Medical One rather than the server version.

   a. With the local version, all locally attached sound sources are simultaneously recognized and provided as options for use. Further, keys on hand-held microphones are simply programmed when using the local version of Dragon Medical One. Then central record button on the PowerMic II and Philips SpeechMike will work by default in the local version.

   b. With the server version, only one sound source will be shown. If no USB microphones are plugged in, it will show only the on-board sound system. If USB microphones or USB sound adapters are plugged into your machine, only the most recently attached device will be shown. Programming of any buttons on a hand-held USB microphone will be possible with the server version only if specific Nuance-provided drivers have been installed. These drivers provide a bridge between the USB device and the Dragon Medical One application on the virtual server.

PowerMic Mobile

For those paying for the option of the "PowerMic Mobile", this is an application run from your iPhone or Android mobile device which turns it into a wireless microphone. In addition to passing your speech to Dragon Medical One by means of your Wi-Fi network, it also creates programmable "virtual buttons" on the phone. These buttons can be programmed for a variety of functions, including controlling the on-off function of the microphone, toggling through navigation fields, opening the "Dictation Box", and more.

Set-up: The following steps are followed to set up the PowerMic Mobile

1. You need to pay for it! Although the application itself is free, you need to pay a monthly fee to use it with Dragon Medical One (exception: if your institution has contracted for its use, you don't need to pay for it!). So, unless you are provided with a trial use, don't bother downloading the application and trying to use it – it won't work absent importation of a code which proves you own it.

2. Download the PowerMic Mobile application: you can find this at the app store designed for your mobile device.

3. Configure the Application: this requires opening a link (token) which has been provided to you by your institution or value-added-reseller and is generally provided via email. You must open this email with your mobile device and click on the link/token to initiate the configuration process.
4. Log on (from the PowerMic Mobile) using the log-on credentials provided by your institution or reseller.

Using the PowerMic Mobile: Use of the device is quite simple. The two most important steps are: 1) choosing the PowerMic Mobile as your intended microphone when logging on to Dragon Medical One and 2) Making the connection by clicking "Log in" from your PowerMic Mobile.

Choose the PowerMic Mobile when logging on to Dragon Medical One	Log on to your application remotely from your PowerMic Mobile application
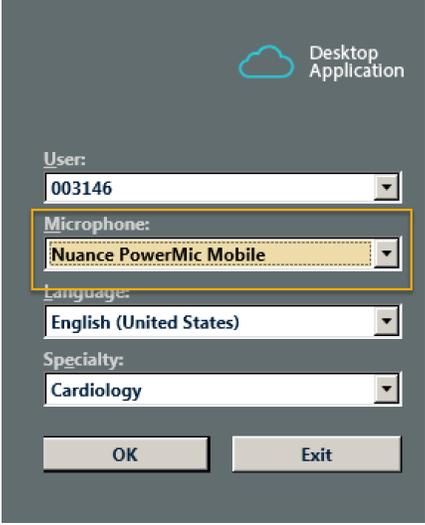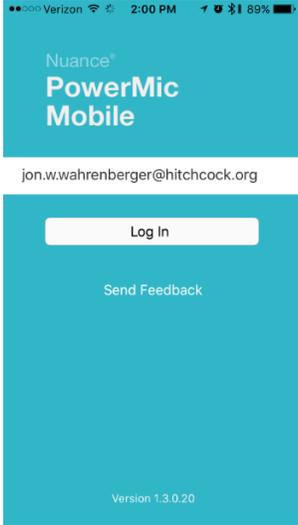
Programming virtual buttons on the PowerMic Mobile: Although PowerMic Mobile has 6 virtual buttons that will interact with DMO, only 5 of them can be programmed by the user. The central icon showing the microphone icon is pre-programmed to control the microphone in a microphone on/microphone off manner (each push of the button cycles between the microphone being on and off. The microphone cannot by programmed in a push-to-talk manner. Programming the other 5 buttons is very simple and is *accomplished from Dragon Medical One and not from the mobile device*. Access the programming function by going to Options > Microphone buttons. From there you will see a virtual representation of your virtual PowerMic Mobile application as shown below.

- Microphone button: the central button is pre-programmed in a "push-on/push-off" manner, and this cannot be changed.
- Each of the other 5 virtual buttons can be programmed to any of 13 functions as shown in the graphic below. These are the exact functions which can also be programmed into a hand-held microphone if used with DMO:
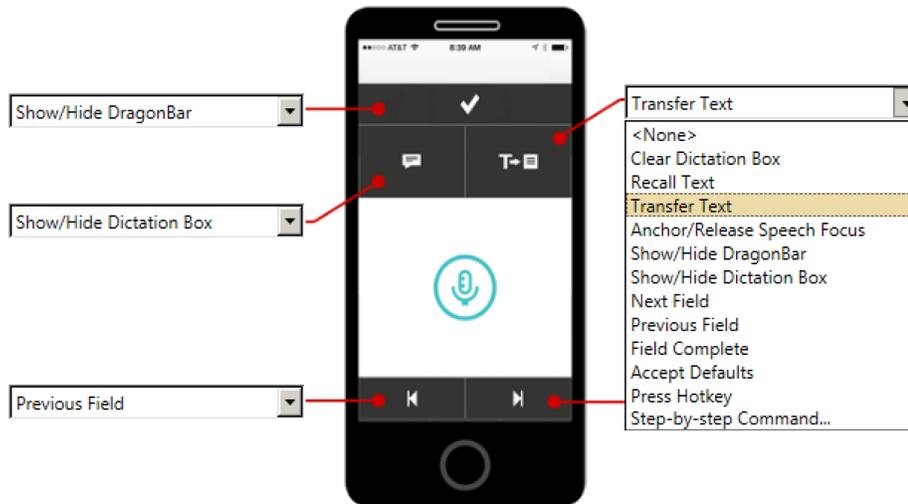
Note: Nuance obviously had the defaults in mind when they created the graphics associated with each virtual button. These graphics do not change when you alter the programmed behavior of any of the buttons. Not a big deal.

Caveats on using the PowerMic Mobile

1. This microphone turns out to be a great choice if you are stuck using a "thin-client" computer for our EMR access and documentation. Since it connects directly to DMO on your institutional server and not to the thin-client computer, it does away with many of the sound connections issues you might otherwise have with the thin-client computer.
2. Remember that application must be opened on your mobile device and the active application in order to be connected to DMO. If you move to another app on your mobile device, you will notice that the mic icon on your DragonBar will no longer indicate an active connection. It will, however, reconnect within just a second or two when you return to or re-open the PowerMic Mobile application
3. Anchoring functionality works fine when the PMM is in use.
4. It is entirely feasible to use an external microphone attached to your mobile device while using the PowerMic Mobile. A section devoted to this follows.
5. Use of the PowerMic Mobile provides a means of using Dragon Medical One with non-windows devices, such as iPads, Apple computers, and others if you are using a server based EMR and server based DMO. The only requirement is that you are able to access your EMR and DMO by means of remote technology (typically Citrix) and that you use your iPhone or Android device as your PowerMic Mobile. What you cannot do is use the same device for the PMM and EMR access.

Using an External Microphone with the PowerMic Mobile

With its unique connection to Dragon Medical One, the PowerMic Mobile application opens some interesting possibilities in terms of access to DMO and your EMR. As indicated earlier in this section of the guide, any iPhone or Android mobile device (including iPads and other tablet computers) can be

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used as the place to implement the PowerMic Mobile application. If you are happy to dictate directly into your mobile device you are all set. But what if you would like a fully hand-free connection? What if you would like to use your iPhone as a mobile device while it sits on your desk or perhaps in your pocket? Or what if you are working in an extremely loud environment and need the noise cancelling properties of your favorite headset, but still want to connect via your PowerMic Mobile? For these situations, you can connect many wired headset microphones directly or via Bluetooth to your mobile device and have it replace the on-board microphone while still using the PowerMic Mobile connection to Dragon Medical One.

Overview of microphone options with a mobile device running the PowerMic Mobile application:

We were surprised to see that the recently released Apple Airpods, which include a microphone and communicate using Bluetooth frequencies, work surprisingly well with Dragon Medical One

Using PowerMic Mobile with an external microphone comes with a few conditions:

1. In the case of an Apple mobile device with a lightning port, you can successfully use the "Lightning to 3.5 mm adapter" available from Apple, Amazon, etc. for about $15, but you will also need what is typically termed a mobile device headset adapter which splits the 3.5 mm jack into separate sound-out and mic in jacks. Android devices with a 3.5 mm audio jack can skip the lightning adapter.
2. This process will not work with Bluetooth Microphones
3. This process will not work with most USB microphones, even when connecting to your mobile device with a USB to lightning connector. The reason for this appears to be that most USB microphones use voltage provided by the USB port to "power" the microphone, and most mobile device simply do not provide enough power.

Other Recommended Microphones

1. PowerMic II and III: the PowerMic II and III microphones are products of Nuance and the microphones most easily to integrated with your installation of Dragon Medical One. The advantages of these microphones are the high degree of integration with Dragon Medical One and Dragon Medical Practice Edition and … well … that's about all that can be said. The downsides are that they are over-priced and inadequately warrantied (only 90 days and good luck getting a repair during the 90 days). The PowerMic III is an improvement over the II in that it uses an optical trackpad rather than a prone-to-break "pointer stick" seen in the PowerMic II and comes with the choice of a 3 ft. or 9 ft. cord. But, again, each version integrates well with Dragon Medical One and works well with the software. The retail price is $424, but it is typically available through institutional sales directly from Nuance for somewhat less than this. No-one can advertise a lower price, but negotiation is allowed! Be aware that if you are using the server based ("Stand-Alone") version of DMO, it will be necessary for you or your institution to install drivers for the PowerMic on your computer in order to enjoy full functionality of the buttons.

2. Philips SpeechMike Premium: Known officially as the LFH-3500, this is truly the pièce de résistance of hand-held USB microphones. In addition to being beautifully designed and ergonomically satisfying, it includes several unique features which have led to it being the preferred microphone among physician Dragon users. Our favorite "special features' include a physically suspended microphone element which is "decoupled" from the housing to offer both unprecedented accuracy, but also immunity from background noise, touch, and click noises, and also the unique feature of automatically turning off when put in the "supine" position (set down on your desk). Unlike the PowerMic, it includes a full one-year warranty and, honestly, is less likely to break. The SpeechMike Premium is highly accurate and noise canceling and a step up in both regards when compared to the PowerMIc II/III.

3. SpeechWare TravelMike: this is a uniquely versatile microphone that can be used in a variety of ways, including as a desktop mic (using the optional stand), plugged directly into a USB port, or as a simple hand-held microphone when combined with an optional short USB extension cable. Our preference is the hand-held mode, since it is highly light weight and small enough to fit into a breast pocket. In terms of quality, it uses one of the most sensitive and accurate microphone elements made, so the quality is superb.

4. SpeechWare FlexyMike Dual Ear Cardioid: this is an extremely lightweight and shares virtually all the features of the Sennheiser ME3 (same mounting style, same high quality microphone element). The term "cardioid" refers to the very directional nature of the microphone element, which contributes to its high level of external noise rejection. If you choose to use ear-buds as a source of speakers with this microphone, it has a small jack on the headset to facilitate this. We recommend interfacing this microphone to your computer with an external USB sound adapter, such as the Andrea Pure Audio MA USB adapter.

5. SpeechWare TableMike: for the user preferring not hold or wear a microphone, the Belgian company, SpeechWare, offers a series of desktop microphone called the "TableMike". Coming in 3 models with varying boom length and extra features, each includes a highly accurate and direction microphone element. Unique to this entire series, is an auto-gain technology that automatically adjust the microphone sensitivity and makes it possible to use the microphone with head to mic element distances of 1020 inches. In the spring of 2017, SpeechWare will be releasing a related microphone called the "TableMike One" that has a shorter boom and might be considered a hybrid of the TableMike and TravelMike.

6. VXI VoxStar: this is the newest wireless headset introduced by VXI, a company that has long manufactured microphones for the speech recognition user. Unique to this product is a wireless technology utilizing a connection with a small USB dongle with which the headset is pre-pared. The result is plug-and-play simplicity and excellent results during almost all-day use without charging. This product comes with 3 mounting styles, including ear-mounting, traditional over-the-head mounting, and the type of behind-the-head mounting used by the Sennheiser ME3 and SpeechWare FlexyMike.

7. LiveMIC2: the Live Microphone 2 (LiveMIC2) is a Bluetooth transmitter that will connect with your personal computer and provide a microphone input signal to Dragon Medical One. It includes both on-board microphones (both a unidirectional and omnidirectional microphone) and also a jack to allow you to attach and traditional analog microphone with a 3.5 plug. In this regard, the LiveMIC2 allows you to turn ANY microphone into a wireless microphone. Although Nuance advises against using a Bluetooth microphone with DMO, in the author's experience this set-up works wonderfully. What's nice about this product is that it is extremely small and light. It can be turned into a

wireless hand-held microphone by using either the SpeechWare TabletMic or Olympus ME52W as the attached external mic.

Working with an EMR

At the end of the day, most Dragon Medical One users will be deploying the application for use in medical documentation within an electronic health record. What can you expect in this realm? Are there limitations you should know about? In this brief section, we will overview use of DMO within an EMR.

Which version should I use? Click Once or Stand-Alone?

You will recall that at the beginning of this guide we discussed the two ways of using DMO, either as a "click-once" (locally run) application or a "stand-alone" application residing on a server. The important thing to know is that DMO must be running on the same computer as the application in which you want the text to go.

- If you are using an EMR that is running directly on your personal machine or work-station, or through a web browser, you want to use the version of DMO that runs locally or the "click-once" version.
- If you are using an EMR that is actually located on a central server and is being presented to you by means of virtualization software (Citrix, RDS, etc.), then you want DMO to be running directly on the server with the EMR and in this case you should be using the Stand-alone version.

When set up properly for either of the above scenarios, Dragon Medical One should insert text and allow navigation, correction, etc. right within a document within your EMR and the process should be fairly seamless.

Will my EMR work with DMO?

Nuance is continuously working to make Dragon Medical One compatible with every EMR possible and making constant tweaks to the application to improve its applicability. Obviously, they are putting most of their energy into the most commonly deployed EMRs, such as Epic, Cerner, GE, etc. Here is a limited list of EMRs which are reported to be compatible with Dragon Medical One:

- Epic Hyperspace 2015, 2016
- McKesson Paragon
- GE Centricity
- Cerner Millenium 2012 and Cerner Millenium 2015
- Cerner RadNet application
- Athena Streamlined application, hosted in Google Chrome (Google chrome extension required)
- Most EMRs using Google chrome and other web browsers

Keep in mind, though, that failure to be on the above list does not mean your EMR will NOT be compatible. Many documentation systems use web browsers and common text entry windows, so yours may work even if not listed. Often, the best thing to do is inquire of your EMR vendor to confirm compatibility.

Dealing with a non-standard window or application

Sometimes you may find that a specific text-entry window or part of an EMR is not compatible with Dragon Medical One. This will become immediately apparent by virtue of the Dictation Box showing up and capturing your text the second you start dictating. How should you deal with this? First, be sure that you have the correct installation of Dragon Medical One (Click-Once vs. Stand-Alone version). If this is not the issue, or you have no choice but to deal with the type of installation you have, then there are some simple work-arounds. An example of such a scenario is that you have a server based EMR but your institution has not purchased DMO and you have no choice but to run it locally. Here are some hints to running DMO locally and entering text on a server:

1. Use the Dictation Box and optimize the "transfer text" function. Although the Dictation Box will launch automatically, remember that the process of transferring text from the Dictation Box back to your EMR is not automatic. If necessary, play with the "Transfer Text" functions to determine which works best with your EMR (see section above on working with the Dictation Box).
2. Remember that even though you may not be able to enter text directly into your EMR when dictating, you may have the ability to navigate and perform other functions by using step-by-step commands within Dragon Medical One. For instance, the EMR "Epic" uses what they call wildcards consisting of a triple asterisk (***) as navigation field in a document. The actual navigation requires depression of the F2 key to move forward from wildcard to wildcard. A shift + F2 moves backwards. It is a sixty second process to create a DMO step-by-step command to emulate the F2 and shift + F2 key depression. See section above on building step-by-step commands. Similarly, step-by-step commands can be used to initiate other EMR related activities. In another example taken from Epic, all "dot phrases" which call up note templates and other structured data are set in motion with the typing of a ".", followed by some specified text and then either the tab or enter key. This can be easily done with a step-by-step command. The big point is that these computer (and EMR) control functions can be initiated with the local version of DMO but interact with your EMR on a distant server.

Leveraging your efficiency with an EMR

At the end of the day, using a speech recognition product such as DMO is about improving the quality of your documentation *and* extending your efficiency. Remember that turning your words into text with real-time dictation/transcription is just one part of the process. After years of successful use of Dragon, we have found the greatest efficiencies come from a broad use of speech recognition for the following:

- Direct, real-time text entry in notes, and other windows including problem lists

- Use of text commands ("Auto-Texts") to enter commonly dictated aspects of documentation, including exams, counseling discussions, procedure consents, etc. Don't underestimate the power of Auto-Texts!
- Navigating from section to section with the EMR
- Selecting and opening note templates
- Inserting structured data into a note on the fly, including lab data, vitals, etc.
- Clicking buttons

Know when to use Dragon Medical One and when to use your mouse or keyboard. Just because you CAN do something by voice does not mean it's NECESSARY to do it by voice. Because Dragon's integration with most EMR's is not all that tight, many users limit use of Dragon to text creation in notes and use the mouse and keyboard for all the navigation and other functions within the EMR. See what works best for you.

Finally, here are some additional strategies to improve your efficiency with medical speech recognition:

- Find out if there are ready made Dragon "commands" or macros prepared for your EMR or your specific institutional implementation of your EMR. These may be available from your institution or from your EMR vendor. Epic Systems, for instance, offers a set of Dragon commands on their "User Web" portal. If you can get such a set, do so and use them. And modify them if you desire.
- Inquire of your colleagues and any institutional Dragon "champions" to see if they have commands or practical strategies they can share.

Since most EMRs have assigned keyboard "hot-keys" to navigate and do other things, ask for a list of keyboard shortcuts. These are useful for creation of commands.

Getting Help

For information related to installation and trouble-shooting, you may need to talk with someone from your institutions IT or user support. To date there are no independent publications pertaining to Dragon Medical One beyond our own short guide. The following are key Nuance resources which will be helpful to you:

Dragon Medical One Help Menu: this launches a very useful guide with lots of information about basic functionality of DMO.

Nuance Video on Dragon Medical One: https://www.youtube.com/embed/Cb7yXUVfiYI?rel=0

Nuance Video on PowerMic Mobile: https://www.youtube.com/watch_popup?v=OjoqiePRFtI&feature=youtu.be

Appendix

Available Press-Keys Functions

For those digging deeper into the step-by-step command functionality, the use of a "Press-Key" step can allow you to simulate a variety of computer functions. And these can be combined when needed.
Below is a list of potential press-key functions:

Key	Input format	Key	Input format
Backspace	{BACKSPACE} or {BS}	F1 - F24	{F1} to {F24}
Break	{BREAK}	Return	{RETURN}
Caps lock	{CAPSLOCK}	Help	{HELP}
Scroll lock	{SCROLLLOCK}	Decimal	{DECIMAL}
Delete	{DEL} or {DELETE}	Separator	{SEPARATOR}
Down arrow	{DOWN}	Space	{SPACE}
End	{END}	Select	{SELECT}
Enter	{ENTER}	Print	{PRINT}
Esc	{ESCAPE} or {ESC}	Execute	{EXECUTE} or {EXEC}
Home	{HOME}	Snapshot	{SNAPSHOT}
Insert	{INSERT}	Cancel	{CANCEL}
Left arrow	{LEFT}	Windows	{WINDOWS} or {WIN}
Num lock	{NUMLOCK}	Applications	{APPLICATIONS} or {APPS}
Page down	{PGDN}	Left mouse button	{LBUTTON} or {LBTN}
Page up	{PGUP}	Right mouse button	{RBUTTON} or {RBTN}

Key	Input format
Right arrow	{RIGHT}
Tab	{TAB}
Up arrow	{UP}
Add	{ADD}
Subtract	{SUBTRACT}
Multiply	{MULTIPLY}
Divide	{DIVIDE}

Key	Input format
Middle mouse button	{MBUTTON} or {MBTN}
Clear	{CLEAR}
NUMPAD0 - NUMPAD9	{NUMPAD0} or {NP0} to {NUMPAD9} or {NP9}

The following modifiers can be used in the **Press keys** field (always combined with other keys):

Modifier	Input format
Shift	+
Ctrl	^
Alt	%

Examples of use of modifiers:

Sequence executed	Input format
Alt+Ctrl+s	%^s
Shift+Tab	+{Tab}

Overview of All DMO Commands

(Scroll Down to view printable document)

Dragon Medical One: Overview of Available Commands

Command Name	Alternative Name	Action
Application Control Commands		
Anchor Speech focus	Send text here	Anchors speech focus to an application
Release speech focus		Releases speech focus from an application
Show anchored application	show the anchored application	Brings the application with the speech focus anchored to it to the foreground
Hide Dragon	Close Dragon	Minimizes application
Close Dragon	Hide Dragon	Minimizes application
Open Dragon	Show Dragon	Makes application visible
Show Dragon	Open Dragon	Makes application visible
Launch help	Open help, show help	Opens Dragon help
Create auto-text	Add auto-text, make that an auto-text	Creates a new auto-text containing the selected text
Create command	Add Command, create step-by-step command	Opens manage commands dialog box and creates new command with no information
Manage words		Opens vocabulary
Manage commands		Opens step-by-step command functionality
Manage auto-texts		Opens Auto-text functionality
Apply settings		Applies settings in Manage Auto-texts and Step-by-Step commands sections
Apply settings and close	Apply and close	Applies your settings and closes the Options dialog box
Close settings	Hide settings, close options, hide options	Closes the Options dialog box
Open settings	show settings, open options, show options	Opens the Options dialog box
What can I say	show commands	Displays list of what you can say
Deselect that	Unselect that	Cancels the selection
Scratch that	Delete that	Deletes the last utterance
Undo that	Undo it, undo this, undo last action	Undoes the previous operation
Microphone Off	Stop listening, stop recording	Switches off the microphone

Cursor Positioning Commands		
Go back		Returns the cursor focus to before the previous selection command
Go to end of paragraph	Move to end of paragraph	Navigates to end of paragraph
Go to start of paragraph	Move to start of paragraph	Navigates to start of paragraph
Go to start of sentence	Move to start of sentence	Moves to start of current sentence
Insert after [text]		Puts cursor focus after specified text
Insert before [text]		Puts cursor focus before specified text
Text Selection Commands		
Select [text]	Correct text	Selects the specified text
Select [text] to [text]	Select [text] through [text], correct [text] to [text], correct [text] to [text]	Selects the specified text
Select all		Selects all text in the dictation
Select first paragraph	Select the first paragraph	Selects the first paragraph of your dictation
Select first sentence	Select the first sentence	Selects the sentence at the beginning of our dictation
Select first word	Select the first word	Selects the first word in your dictation
Select last paragraph	Select the last paragraph	Selects the paragraph at the end of your dictation
Select last sentence	Select the last sentence	Selects the sentence at the end of your dictation
Select last word	Select the last word	Selects the word at the end of your dictation
Select next paragraph	Select the next paragraph	Selects the next paragraph
Select next sentence	Select the next sentence	Selects the next sentence
Select next word	Select the next word	Selects the next word
Select previous sentence	Select the previous sentence	Selects the previous sentence
Select previous word	Select eh previous word	Selects the previous word
Select that	Correct that	Selects that last utterance end lists the alternatives
Select this paragraph		Selects current paragraph
Select this sentence		Selects sentence in which cursor currently located

Select this word		Selects word in which cursor currently loctedmjn
Dictation Box Commands		
Open Dictation Box		Opens dictation box
Close Dictation Box	Hide dictation box	Closes dictation box
Transfer Text	Text transfer	Transfer text from Dictation box to your text editor
Discard Text		Discards text in Dictation Box
Recall Text		Recalls the text from your text editor to the Dictation box
Filed Navigation Commands		
Accept defaults	Clear field delimiters	Accept default values of auto-text field and removes field delimiter
Field complete		Accepts the default value and removes field delimiters of auto-text field within focus (not entire document)
Next field		Moves to and selects next navigation field defined by delimiting characters
Previous filed		Moves to and selects prior navigation filed
Last field		Moves to and selects last navigation field in document
Field complete		Removes Delimiting characters from selected field
Punctuation		
New line		Presses enter key once
New Paragraph		Presses enter key twice
Comma		,
Period	Dot, full stop	.
Exclamation Point		!
Colon		:
Semicolon		;
Apostrophe		'
Dash	hyphen	-
Hyphen	dash	-
Question mark		?

Open quote	quote	"
Close quote	end quote	"
Open paren	open parenthesis	(
Close paren	close parenthesis	)
Open bracket		[
Close bracket		]
Open brace		{
Close brace		}
Ellipsis		…
Text Formatting		
All caps that	Text Formatting that uppercase	Formats selected text or last thing said as all capitals
Compound [Text]		Joins specified words together
Compound that	Compound selection	Joins words together and hyphenates where necessary
Format that bold	bold that	Makes the selected text bold
Format that italic	Italicize that	Makes the selected text italic
Format that normal	Normal that	Removes formatting from selected text
Format that underline	Underline that	Makes the selected text underlined
Vocabulary Management		
Add that to vocabulary	Add to vocabulary, add word, add new word, train word	
Delete word	Scratch that word, scratch word	Deletes the word with the cursor focus
Do not recognize that word	Don't recognize that word, delete from vocabulary, delete that from vocabulary	Brings you to page where word can be removed from vocabulary
Manage vocabulary	Edit vocabulary, manage words	Displays the manage vocabulary page
Resume with [text]		Continues editing from the specified text
Miscellaneous Characters		
Great than sign		>
Ampersand		&
Asterisk		*
Multiplication sign		x
Dollar sign		$
Plus sign		+

Cent sign		¢
Poud sterling sign		£
Euro sign		€
Yen sign		¥
Registered sign		®
Caret		^
Center dot		·
Large center dot		•
Degree sign		°
Percent sign		%
Smiley face		:-)
Frowny face		:-(
Winky face		;-)
Copyright sign		©
Trademark sign		™
Equal sign		=

Compatible Applications

As a relatively new application, Dragon Medical One is not compatible with *every* text entry environment. Over time, Nuance is adding increasing application support. Gathering a list of compatible applications is a little challenging since this is not information that Nuance is freely sharing. Below is a list of applications that Speech Recognition Solutions has specifically tested DMO and found both compatibility and full "text control".

- Microsoft Word 2013, 2016 (Office 2003 is not supported)
- Microsoft WordPad
- Microsoft Notepad
- Microsoft Internet Explorer
- Microsoft Outlook (Outlook 2003 is not supported)
- Google Chrome (requires extension obtained at: https://chrome.google.com/webstore/detail/dragon-medical-one-web-ex/feolagkacappiaieohahjkeaikhjjcfa)
- Epic Hyperspace 2015, 2016
- McKesson Paragon
- GE Centricity
- Cerner Millenium 2012 and Cerner Millenium 2015
- Cerner RadNet application
- Athena Streamlined application, hosted in Google Chrome (Google chrome extension required)
- The MEDENT application text control "Word Process Class"
- TX TextControl .NET for Windows Forms in versions 17, X8, X9, X10, X11, X12 and X13
- TX TextControl .NET for Windows Forms in versions 17, X8, X9, X10, X11, X12 and X13 when embedded in 64-bit applications

Software and Hardware Requirements

The following software and hardware requirements are taken from the Nuance Dragon Medical One Installation and Administration Guide and pertain to version 3.5. In general, most recent vintage Windows based computer will support use of Dragon Medical One.

Although Dragon Medical One will not run on a Mac OS, for users accessing DMO virtually through Citrix, if such virtualization software is run on a Mac, it will allow remote access to DMO and entirely normal functioning. The same applies to Citrix access using an iPhone or iPad.

Operating systems
- 32-bit: Microsoft Windows 7, Windows 8 and Windows 8.1. Make sure that the latest service pack is always applied.
- 64-bit: Microsoft Windows 7, Windows 8, Windows 8.1, Windows 10, Windows Server 2008 R2 and Windows Server 2012 R2. Make sure that the latest service pack is always applied.

Microsoft .NET Framework 4.5 (or higher) is required.

In Microsoft Windows 8, 8.1 and 10, you can only use Dragon Medical One in the desktop environment, the Microsoft design language-based user interface (Start screen) is not supported.

If you are working with Microsoft Server 2008 R2, make sure you have the following hotfix applied: http://support.microsoft.com/kb/2538047

Processor speed
- Minimum: 1.7 Ghz
- Recommended: 2.8 Ghz

RAM
- Minimum: 512 MB
- Recommended: 2 GB

Web browsers
For the personalization and help window:
- Microsoft Internet Explorer 11
- In the Internet Options, make sure that cookies are enabled.

Text editors
- TX Text Control 12 to 23, .NET
- Microsoft Word 2007, 2010, 2013 and 2016
- Microsoft Rich Text controls (including .NET Forms)
- Ter32, Ter13-Ter17 and Ter21-Ter23
- Dragon Medical One Dictation Box
- WPF standard text controls

Microphones
Any microphone that can record audio data in 16 kHz, 16-bit mono format is supported.
To work with Dragon Medical One in hands-free mode, using a foot pedal in combination with a microphone, you must make changes to the Registry on your workstation. If you are working in a virtual environment, you must modify the registry settings on the virtual server for every Windows user that will be used to run Dragon Medical One. For more information, contact Nuance Technical Support.