

Voice command and audio playback system

PenVoice is another innovative productivity tool for mammography. PenVoice extends PenRad's tap-on tap-off, and auto negative technology, by incorporating voice commands.

Compared to other voice recognition products, PenVoice is 100% focused on PenRad's keywords for accurate report generation, and does not require any manual editing.

PenVoice incorporates audio feedback of key exam information, then responds to spoken keywords to generate the narrative report, providing a hands free, heads-up solution.

As soon as the exam is selected, PenVoice speaks the pertinent exam information, allowing the radiologist to listen while studying the images, eliminating the need to review screens, film jackets, and/or other paperwork. As the radiologist is interpreting the images, he/she speaks a few PenRad keywords and the report is generated. For additional assurance, spoken keywords are repeated back as a confirmation.

For example: As the exam is opened, PenVoice recites the patient's name, date of birth, age, medical record number, exam type, risk factors and indicated problems.

Pre-Exam Christine Jade Anderson, Penrad Main Clinic		4/1/2006 07:30:28
Dorothy Y. Yon DOB: 11/11/1934 AGE: 71 F PID: 223238204 SSN: 223238204 CHT: ACCT:		
Right		Left
Comparison Films		Indicated Breast Problems
11/02/2002 Bilateral, screening mammogram film 02/02/1997 Bilateral, screening mammogram film		03/31/2005 Mammography: brads 1 - 1 year screening 11/02/2002 Mammography: brads 1 - 1 year screening 02/02/1997 Mammography: brads 0 - 1 year screening
Medical History	Previous Procedures	Risk Factors
1st menstruation, 1948, age 14	2005, age 70, Mammogram (normal), B: Bi 2002, age 67, Mammogram (normal), B 1997, age 62, Mammogram needed addl.	(Post-menopausal) No family history (of breast cancer)
<input type="button" value="Negative Mammo"/> <input type="button" value="Detailed Mammo"/> <input type="button" value="Track Only Mammo"/>		<input type="button" value="Procedures"/>
<input type="button" value="Notes"/> <input type="button" value="Imaging"/> <input type="button" value="Edit Patient"/> <input type="button" value="Print Hist"/>		<input type="button" value="Exit"/> <input type="button" value="Help"/>
Annual Screening		<input type="button" value="Coding"/>
screening mammogram, bilateral		

Approve Normal Mammogram Exam Christine Jade Anderson, Penrad		4/1/2006 07:37:02			
Dorothy Y. Yon DOB: 11/11/1934 AGE: 71 F PID: 223238204 SSN: 223238204 CHT: ACCT:					
<input type="button" value="Change"/> Rad. Dr. Christine Jade Anderson M.D., Penrad Main Clinic <input type="button" value="Clear"/> <input type="button" value="Change"/> 2nd Rad. <input type="button" value="Clear"/> <input type="button" value="Change"/> Attend Tech. <input type="button" value="Clear"/> <input type="button" value="Change"/> Imaging Tech. Sue T Anderson, Penrad Main Clinic Exam Type Screening mammogram, bilateral Tissue Density <input type="button" value="Change"/> Predominantly Fatty Scattered Fibroglandular Heterogeneously Dense Extremely Dense # Films Used: <input type="text"/> Compared to 11/2/2002, 2/2/1997 Additional BENIGN Breast Composition <table border="1"> <tr> <td>Right Breast</td> <td>Left Breast</td> </tr> <tr> <td>Cyst Mass Density Calcification Lymph node Scattered densities Scattered calcifications Vascular calcifications Post-op findings Appears benign</td> <td>Cyst Cysts Masses Masses Density Densities Calcification Calcifications Lymph node Lymph nodes Scattered densities Scattered calcifications Vascular calcifications Post-op findings Appears benign</td> </tr> </table>	Right Breast	Left Breast	Cyst Mass Density Calcification Lymph node Scattered densities Scattered calcifications Vascular calcifications Post-op findings Appears benign	Cyst Cysts Masses Masses Density Densities Calcification Calcifications Lymph node Lymph nodes Scattered densities Scattered calcifications Vascular calcifications Post-op findings Appears benign	Exam Date / Time: 03/09/2006 14:22 ? BI-RADS <input type="button" value="Change"/> 1 - Negative <input type="checkbox"/> Manual Override Recall Interval No Recall (discretionary) No Recall- no msg <input type="button" value="Change"/> 6 month screening <input type="button" value="Change"/> 1 year screening 2 year screening 3 year screening 4 year screening 5 year screening 12 month follow-up <input type="button" value="Add Mammo Text"/> <input type="button" value="Summary Text"/> <input type="button" value="Preview"/> <input type="button" value="Coding"/> <input type="button" value="Dictate / Modify"/> <input type="button" value="Detailed Mammo"/> <input type="button" value="Approve"/> <input type="button" value="Approve For 2nd Read"/> <input type="button" value="Approve and Print Now"/> <input type="button" value="To Preexam"/> <input type="button" value="Help"/>
Right Breast	Left Breast				
Cyst Mass Density Calcification Lymph node Scattered densities Scattered calcifications Vascular calcifications Post-op findings Appears benign	Cyst Cysts Masses Masses Density Densities Calcification Calcifications Lymph node Lymph nodes Scattered densities Scattered calcifications Vascular calcifications Post-op findings Appears benign				

If the radiologist speaks 'Negative', PenVoice responds with 'Fatty, No Change, One Year, Letter One' reflecting predominately fatty breast tissue, no changes from the comparison images, return in one year and send the patient the normal exam letter.

Saying 'Approve' completes the report and returns the radiologist to the Scheduled Patients list to select the next exam.

If the radiologist chooses to say 'Bilateral Calcs', PenVoice will respond with 'Bilateral Calcifications' and modify the report to convert the BI-RADS to 2-Benign.

If the radiologist states 'Bilateral Calcs' a second time, PenVoice responds 'De-selecting Bilateral Calcifications' and reverts the report back to a BI-RADS 1-Negative.

Saying 'Approve' completes the report and returns the radiologist to the Scheduled Patients list to select the next exam.

Approve Normal Mammogram Exam		Christine Jade Anderson, Penrad		4/1/2006 07:40:57	
Dorothy Y. Yon DOB: 11/11/1934 AGE: 71 F PID: 223238204 SSN: 223238204 CHT: ACCT:					
Change	Rad.	Dr. Christine Jade Anderson M.D., Penrad Main Clinic		Exam Date / Time: 03/09/2006 14:22 ?	
Clear	2nd Rad.			BI-RADS	
Clear	Attend Tech.			2 - Benign	
Clear	Imaging Tech.	Sue T Anderson, Penrad Main Clinic		<input type="checkbox"/> Manual Override	
Exam Type: Screening mammogram, bilateral					
Tissue Density		Changes		Recall Interval	
Predominantly Fatty		NO significant changes		No Recall (discretionary)	
Scattered Fibroglandular				No Recall- no msg	
Heterogeneously Dense				6 month screening	
Extremely Dense				1 year screening	
# Films Used:				2 year screening	
Compared to: 11/2/2002, 2/2/1997				3 year screening	
Additional BENIGN Breast Composition				4 year screening	
Right Breast		Left Breast		5 year screening	
Cyst	Cysts	Cyst	Cysts	12 month follow-up	
Mass	Masses	Mass	Masses	Add Mammo Text	
Density	Densities	Density	Densities	Summary Text	
Calcification	Calcifications	Calcification	Calcifications	Preview	
Lymph node	Lymph nodes	Lymph node	Lymph nodes	Coding	
Scattered densities	Scattered densities	Scattered densities	Scattered densities	Dictate / Modify	
Scattered calcifications	Scattered calcifications	Scattered calcifications	Scattered calcifications	Detailed Mammo	
Vascular calcifications	Vascular calcifications	Vascular calcifications	Vascular calcifications	Approve	
Post-op findings	Post-op findings	Post-op findings	Post-op findings	Approve For 2nd Read	
Appears benign	Appears benign	Appears benign	Appears benign	Approve and Print Now	
				To Preexam	
				Help	

Requirements:

- PenRad PenVoice software.
- Computer with a standard sound card.
- Microphone headset (USB recommended).
- Windows XP or Windows 2000 Pro operating system.



Uses the Microsoft speech engine, no voice recognition software to purchase.

Solutions for productivity and revenue optimization in radiology workflow.

Learn more: penrad.com | sales@penrad.com | 763.475.3388