

PenVoice

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.

The screenshot displays the PenRad software interface for a patient named Christine Jade Anderson. At the top, it shows patient details: Pre-Exam, Christine Jade Anderson, Penrad Main Clinic, 4/1/2006 07:30:28, and patient identifiers: Dorothy Y. Yon, DOB: 11/11/1934, AGE: 71, F, PID: 223238204, SSN: 223238204, CHT: ACCT. Below this are four mammogram images labeled 'Right' and 'Left'. The central image has a red dot labeled 'mole'. Underneath the images are three tabs: 'Comparison Films', 'Indicated Breast Problems', and 'Penrad Exams'. The 'Penrad Exams' tab is active, showing a list of exams with dates and descriptions. Below the exams are three sections: 'Medical History' (listing '1st menstruation, 1948, age 14'), 'Previous Procedures' (listing mammograms from 2005, 2002, and 1997), and 'Risk Factors' (listing '(Post-menopausal)' and 'No family history (of breast cancer)'). At the bottom, there are buttons for 'Negative Mammo', 'Detailed Mammo', 'Track Only Mammo', 'Procedures', 'Notes', 'Imaging', 'Edit Patient', 'Print Hist', 'Exit', and 'Help'.

The screenshot shows the 'Approve Normal Mammogram Exam' form in the PenRad software. At the top, it displays patient information: Approve Normal Mammogram Exam, Christine Jade Anderson, Penrad, 4/1/2006 07:37:02, and patient identifiers: Dorothy Y. Yon, DOB: 11/11/1934, AGE: 71, F, PID: 223238204, SSN: 223238204, CHT: ACCT. The form is divided into several sections. On the left, there are buttons for 'Change' and 'Clear' next to fields for 'Rad.' (Dr. Christine Jade Anderson M.D., Penrad Main Clinic), '2nd Rad.', 'Attend Tech.', and 'Imaging Tech.' (Sue T Anderson, Penrad Main Clinic). Below these are fields for 'Exam Type' (Screening mammogram, bilateral) and 'Tissue Density' (Predominantly Fatty, Scattered Fibroglandular, Heterogeneously Dense, Extremely Dense). A 'Changes' section shows 'NO significant changes'. There are also fields for 'Recall Interval' (1 year screening) and 'Patient Letter' (No Letter). At the bottom, there are buttons for 'Approve', 'Approve For 2nd Read', 'Approve and Print Now', 'To Preexam', and 'Help'. The form also includes a 'Compared to' section with dates 11/2/2002 and 2/2/1997, and a table for 'Additional BENIGN Breast Composition' with columns for 'Right Breast' and 'Left Breast'.

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 convert BiRads 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 BiRads 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. Von 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:	
Clear Change	2nd Rad.			03/09/2006 14:22 ?	
Clear Change	Attend Tech.			BI-RADS	
Clear Change	ImagingTech.	Sue T Anderson, Penrad Main Clinic		2 - Benign	
Exam Type: Screening mammogram, bilateral				<input type="checkbox"/> Manual Override	
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					
Right Breast			Left Breast		
Cyst	Cysts	Cyst	Cysts	Patient Letter	
Mass	Masses	Mass	Masses	No Letter	
Density	Densities	Density	Densities	1. Mammography Nor	
Calcification	Calcifications	Calcification	Calcifications	2. Comparison to Prev	
Lymph node	Lymph nodes	Lymph node	Lymph nodes	Add Mammo Text	
Scattered densities	Scattered densities	Scattered densities	Scattered densities	Summary Text	
Scattered calcifications	Scattered calcifications	Scattered calcifications	Scattered calcifications	Preview	
Vascular calcifications	Vascular calcifications	Vascular calcifications	Vascular calcifications	Coding	
Post-op findings	Post-op findings	Post-op findings	Post-op findings	Dictate / Modify	
Appears benign	Appears benign	Appears benign	Appears benign	Detailed Mammo	
Approve				Approve For 2nd Read	
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.



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