RCI
Radiology Consultants
of Iowa, PLC.

Arnold B. Honick, MD

*Diagnostic Radiology
Specialist, RCI*

Challenge:

Facility upgraded to digital breast tomosynthesis (DBT) in 2014 but found their previous computer-aided detection (CAD) solution was not providing adequate support to help radiologists manage the increase in workload

Facility was looking for a clinically proven AI solution that would be scalable and easy-to integrate.

Solution:

ProFound Detection for Digital Breast Tomosynthesis

Results:

ProFound Detection boosted radiologists' confidence and improved their accuracy and efficiency .

Technology integrated seamlessly into their workflow and Case Scores help radiologists prioritize and evaluate cases more rapidly.

iCAD

DMM291 Rev 1

Why RCI Became the First in the State to Adopt ProFound Detection as its Breast AI Solution for Mammography

"When it comes to AI, iCAD was the first in the game. Although AI itself is still in its infancy, iCAD is ahead of other companies that are just entering the market of breast AI now." – Arnold B. Honick, MD

The Story of RCI

Iowa's largest radiology group, Radiology Consultants of Iowa (RCI), offers a wide range of imaging services for patients, including breast cancer screening. In addition to the mammograms done at their imaging center, which is accredited by the American College of Radiology (ACR) as a Breast Imaging Center of Excellence, RCI radiologists also read mammography for more than 10 other hospitals, including a high-risk clinic and a local OBGYN group, totaling an average of about 7,000 exams per year.

"At RCI, we pride ourselves on always having the latest technology, which was why we upgraded to Hologic's Selenia® Dimensions® 3D mammography system in 2014 and Hologic Clarity HD™ with 3D Quorum™ in 2021," said Arnold B. Honick, MD, a diagnostic radiology specialist at RCI. "Up until then, we had previously used an older type of computer-aided detection (CAD) solution for breast cancer screening, which was not helpful at all, as it yielded too many false positives. With the sheer volume of images involved with 3D mammography compared to 2D mammography, we knew we needed a better solution available to improve our team's efficiency and performance."

Selecting the Leading, Proven Solution

Although they could have opted for the AI technology that was bundled with their 3D mammography gantries, the team at RCI decided to explore other available options, and ultimately decided to become the first facility in Iowa to adopt ProFound Detection for Digital Breast Tomosynthesis (DBT), or 3D mammography, in 2021.

"When it comes to AI, iCAD was the first in the game. Although AI itself is still in its infancy, iCAD is ahead of other companies that are just entering the market of breast AI now," said Dr. Honick.

"Additionally, the data supporting ProFound Detection speaks for itself. After looking at reader studies for other AI solutions, we were not as confident that what they were offering was as robust as iCAD's technology."

ProFound Detection was clinically proven in a large reader study to improve radiologists' sensitivity by 8 percent, reduce false positives and unnecessary patient recall rates by 7.2 percent, and slash reading time for radiologists by 52.7%.[1]

The team at RCI was also looking for a solution that would seamlessly integrate into their workflow, without overloading the facility with additional hardware.

"Other AI solutions are essentially a black box attached to each gantry, and there is a significant cost per gantry," said Dr. Honick. "ProFound Detection operates on just one centralized server, which streamlined and accelerated the integration process."

Radiology Consultants of Iowa (RCI), Cedar Rapids, IA

"We decided to adopt ProFound Detection because we felt it was the best product available to provide valid CAD markers on DBT. We also found iCAD's other breast AI solutions enticing, such as ProFound Density and ProFound Risk, as technology we would like to assess," added Dr. Honick. "If ProFound Density and ProFound Risk technology can be studied and proven to provide a usable risk assessment, then we may be able to avoid investing in the time and software necessary to provide a Tyrer-Cusick score, or other risk assessment models. If there is equivalency in the ability to predict the likelihood of breast cancer, these technologies provide a valuable package and really offer the ability to personalize patient care."

"The data supporting ProFound Detection speaks for itself. After looking at reader studies for other AI solutions, we were not as confident that what they were offering was as robust as iCAD's technology." – Arnold B. Honick, MD

Real Time Results

Upon adoption, Dr. Honick and the RCI team immediately noticed ProFound AI boosted their confidence and helped them to read cases faster.

"ProFound Detection has provided noticeable efficiency improvements for us already. It gives me the confidence that I'm looking at the appropriate slices, or images. And using the Case Scores, we are now able to decipher mammograms with very low likelihood of containing an abnormality from one that might require further evaluation," said Dr. Honick. "With so many images to review with tomosynthesis, it is nice to know that ProFound Detection is directing your eye to possible abnormalities. This helps us to evaluate cases more rapidly and with more confidence."

Dr. Honick noted the technology's Case Scores are particularly helpful in sorting cases and prioritizing workflow.

"I've learned to trust ProFound Detection. When I see a low Case Score, I know I can spend less time on that case," said Dr. Honick. "This feature alleviates a significant burden on radiologists, timewise."

In addition to improved efficiency, the team at RCI also soon discovered ProFound Detection improved their accuracy as well.

"We found a couple cases where ProFound Detection helped the radiologist find a subtle area of distortion that might have been easily overlooked," added Dr. Honick. "And these are clearly abnormalities on the synthetic view that you would never see, so it has certainly helped improve our performance and accuracy as well."

1. Conant, E et al. (2019). Improving Accuracy and Efficiency with Concurrent Use of Artificial Intelligence for Digital Breast Tomosynthesis. Radiology: Artificial Intelligence. 1 (4). Accessed via https://pubs.rsna.org/doi/10.1148/ryai.2019180096.