Wooster Community Hospital Adopts ProFound AI™ for Digital Breast Tomosynthesis to Optimize Breast Cancer Screening and Improve Workflow

Challenges:

- Workflow issues associated with recently upgraded mammography unit
- Desire to harness benefits of 3D mammography including improved cancer detection and reduce the rate of false positives and unnecessary recalls
- Dense breast tissue especially challenging to read for select cases

Solution:

- iCAD's ProFound AI™ for Digital Breast Tomosynthesis (DBT)

Results:

- Alleviated workflow challenges associated with reviewing DBT images and reduced radiologist reading time
- Streamlined and efficient workflow increased number of cases seen from 19 to 24 per day
- Revenues increased by more than $79K per year, without increasing expenses
- Increased number of accurate diagnoses and reduced number of false positives and unnecessary callbacks

"Adopting ProFound AI was straightforward. It increases our comfort level knowing that the technology is reading every image, or slice, and it's reassuring knowing that this technology will help us not miss a cancer."

-- Gabriele Pedicelli, MD, Radiologist at Wooster Community Hospital

"Adopting ProFound AI was a seamless process that offered immediate benefits to our radiologists and patients, and we have gained additional efficiencies since then."

-- David Harrison, MBT, RT (R) (N), Director of Imaging Services, Wooster Community Hospital

The Story of Wooster Community Hospital

Wooster Community Hospital is a 175-bed, full service and acute-care facility serving residents of Wayne County, Ohio. The hospital offers a comprehensive range of inpatient and outpatient services, including radiology examinations. Of the 85,000 radiology exams performed each year, about 4,900 are mammography related. Gabriele Pedicelli, MD, a radiologist at Wooster Community Hospital, reviews the majority of breast screening cases at the facility, an average of 75-90 relative value units (RVUs) per day.

-- Wooster Community Hospital
Wayne County, Ohio

Wooster Community Hospital became one of the first facilities in Ohio to adopt ProFound AI for Digital Breast Tomosynthesis (DBT) in 2019, after first upgrading to 3D mammography in 2016 and later adopting the technology to move to synthesized views.

ProFound AI for DBT is the first FDA-cleared software with artificial intelligence for DBT. Its algorithm was trained with the latest in deep-learning artificial intelligence (AI) to detect malignant soft tissue densities and calcifications with unrivaled accuracy. Designed to be used concurrently by radiologists reading 3D mammography, the software rapidly and accurately analyzes each DBT image, or slice, and provides radiologists with crucial information, such as Certainty of Finding lesion and Case Scores, which can assist in clinical decision-making and prioritizing caseloads.

Positive clinical results from a large reader study were recently published in Radiology: Artificial Intelligence. The study showed ProFound AI for DBT increased radiologists' sensitivity by 8 percent, minimized the rate of false positives and unnecessary recalls by 7 percent, and reduced reading time for radiologists by 52.7 percent.[1]

Adjusting to New Technology

After ProFound AI was installed, the team at Wooster was able to quickly incorporate it into daily practice, with little to no learning curve required.

"Adopting ProFound AI was straightforward. It increases our comfort level knowing that the technology is reading every image, or slice, and it's reassuring knowing that this technology will help us not miss a cancer," explains Dr. Pedicelli. "I typically will read the images without ProFound AI first, just to get a gut impression of the case, but when I turn ProFound AI on, it gives me added peace of mind knowing that the technology will alert me to look at certain images more closely."

"Since we were doing DBT already, implementing ProFound AI just made sense," adds Harrison. "Adopting ProFound AI was a seamless process that offered immediate benefits to our radiologists and patients, and we have gained additional efficiencies since then."

-- Gabriele Pedicelli, MD., Radiologist, Wooster Community Hospital

Benefits for Clinicians and Patients

Upon implementation, ProFound AI began to offer benefits to both clinicians and patients at Wooster Community Hospital.

"ProFound AI significantly reduces the time it takes to review 3D tomo datasets, thus reducing the amount of time needed between patients," according to Harrison. "The technology allows us to fully harness the advantages our 3D mammography system offers and improves our overall efficiency, which allows us to see more patients throughout the day within the same timeframe."

Since adopting the technology (synthesized views and ProFound AI), the team at Wooster found the average number of patients seen per day increased from 19 to 24; this increase in patient volume has also increased revenues by more than $79K per year.

"We've also had fewer callbacks," adds Dr. Pedicelli. "Because we're doing less diagnostics, we're now free to do more screenings."

Additionally, Dr. Pedicelli notes that ProFound AI is especially helpful in reviewing cases with dense breasts, which can be more challenging to read.

"Currently, dense breasts are considered a risk factor because dense breast tissue masks cancerous tissue on mammography images. ProFound AI not only helps us to review cases with fatty tissue, we see an even greater benefit for those women with dense breasts," according to Dr. Pedicelli. "Before ProFound AI, I might have read a case with dense breasts and thought 'Let's call them back in 6 months or a year,' but with ProFound AI, we can more easily tell whether we should be doing another examination or biopsy. In fact, there have been two recent cases with dense breasts in a short period of time where ProFound AI helped us make the decision for a follow up, and they both turned out to be cancers."

Overall the team at Wooster found the technology enhanced breast cancer screening and improved sensitivity and specificity, allowing them to more quickly and confidently detect cancers sooner, with fewer callbacks and false positives.

"I would certainly recommend ProFound AI to other radiologists and imaging centers," said Dr. Pedicelli. "Based on my experience reading mammography, I typically feel comfortable making the call of whether it is negative or positive, but the added confidence of calling something negative is the most significant advantage this technology offers to patients."

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

Contributed to by:
Gabriele Pedicelli, MD, Radiologist, Wooster Community Hospital
David Harrison, MBT, RT (R) (N), Director of Imaging Services, Wooster Community Hospital
Danelle Jordan, RT (R), (M), Lead Mammography Technologist, Wooster Community Hospital

About iCAD, Inc.

Headquartered in Nashua, NH, iCAD is a global leader in medical technology providing innovative cancer detection and therapy solutions. For more information, visit www.icadmed.com.

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