Why Kettering Health Traded out Previous AI Software for ProFound AI® Enterprise-Wide

Challenge:

- After a thorough evaluation of their existing solutions, the team at Kettering found that the AI solution on some of their mammography units was not supporting radiologists adequately.

Solution:

- The team ultimately decided to upgrade their AI software to iCAD's ProFound AI® for Digital Breast Tomosynthesis (DBT) enterprise-wide.

Results:

- ProFound AI improved radiologists' clinical confidence and helped them to identify even the most subtle, difficult-to-detect cancers.

- Adopting ProFound AI helped to differentiate the facility on a local level and expanding access to the technology across its network helped to reduce disparities in patient care.

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-- Sally Grady, Director, Kettering Health Breast Centers, Kettering Health

The Story of Kettering Health

A leading faith based, not-for-profit hospital system in southwest Ohio, clinicians at Kettering Health have been providing quality patient care and cancer screening at its world-class cancer centers for 48 years. The team at Kettering takes great pride in ensuring that its facilities are equipped with the latest in state-of-the-art technology that empowers their team to provide the best possible patient care.

"About three years ago we set upon a journey at Kettering to upgrade our breast centers, with the goal of creating world-class facilities with the most top-of-the-line technologies," said Sally Grady, director of Kettering Health Breast Centers.

-- Kettering Health, Main Campus

The first step was to upgrade all of Kettering's 14 breast centers with new technology and to evaluate the effectiveness of ProFound AI compared to another AI solution they had also been using on some of their mammography units. After extensive research, the team at Kettering chose ProFound AI as its AI solution for digital breast tomosynthesis (DBT), and ultimately decided to implement this technology across all of their locations.

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ProFound AI for DBT was the world's first software for DBT with artificial intelligence (AI) to be FDA-cleared. Designed to be used concurrently by radiologists reading 3D mammography, the technology was trained with the latest in deep-learning AI to detect malignant soft tissue densities and calcifications with unrivaled accuracy. It is the only software of its kind that 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 assists in prioritizing caseloads and clinical decision-making. Clinically proven to improve radiologists' sensitivity by 8%, reduce false positives and unnecessary patient recall rates by 7.2%, and slash reading time by 52.7%[i], only ProFound AI offers unmatched benefits to clinicians and patients alike.

"There was some initial skepticism among some radiologists on the team based on their prior experiences with 2D computer-aided detection technologies," said Meghan Musser, DO, medical director for breast imaging at Kettering Health. "But after a short period of time we began to really trust the technology. It's like having a second set of eyes that ensures you take a closer look."

Soon after adopting the technology, the team found that ProFound AI helped to improve both accuracy and efficiency, which ultimately enhanced patient care.

"Improving accuracy and efficiency is key. Every time a patient is called back, that woman assumes she has cancer," said Grady. "Reducing false positives and callbacks is a huge benefit, not only to our patients but to our technologists and radiologists. We only want to call back the women who really need it, and ProFound AI can help our team differentiate that and read mammograms more accurately."

"ProFound AI helps to improve clinical confidence while reading mammograms, which then translates into the discussion I have with the patient," added Dr. Musser. "For example, if I am on the fence about whether to recommend a biopsy or follow up, ProFound AI's Case Scores provide me with crucial information that can help to make that determination. This also empowers me to have a better-informed discussion with the patient and helps them to feel more confident in my recommendations as well."

Detecting the Type of Cancers Radiologists Fear the Most

In addition to improving workflow and reading accuracy, the team at Kettering noted that ProFound AI was particularly helpful in spotting small, subtle lesions that might not stand out to the naked eye.

"Most breast radiologists can easily spot a large mass or a big area of distortion, but it is always possible with these very large DBT studies that there may be a smaller tumor that is more difficult to detect," said Dr. Musser. "ProFound AI is particularly helpful in finding subtle lesions, such as invasive lobular cancers, which tend to be the type of cancers radiologists fear the most, simply because they can be so difficult to detect."

The team confirmed this to be true while auditing past cases about two years after adopting ProFound AI.

"We were hoping to determine whether ProFound AI detected some of the cancers that we had later deemed as interval breast cancers, or cancers that develop between screenings," added Dr. Musser. "In a good portion of those cases, we confirmed ProFound AI did detect something, even if it was subtle, which only further increased our confidence in the technology."

Expanded Rollout Solidifies Kettering's Position as Leading Facility for Breast Health

Although the team at Kettering initially only offered breast cancer screening with ProFound AI at select locations, Grady soon made the decision to expand access to this technology across its entire enterprise of facilities.

"We felt it was critical to offer this potentially lifesaving technology to all of our patients," said Grady. "We felt offering it to only some of our patients was almost creating a disparity of sorts, and we felt that the value this technology offers was something we wanted to offer to every woman who is screened for breast cancer at one of our centers."

As one of the first in the area to adopt AI for breast cancer screening, Kettering also found adopting ProFound AI helped to elevate awareness of the hospital and position it as a leading facility in the community with the most cutting-edge advancements.

"Patients are always looking for a center that offers the absolute best in patient care," added Grady. "Having ProFound AI really helps to set us apart from other facilities in the area; while we upgraded all of our breast screening technology, ProFound AI is truly the icing on the cake."

Dr. Musser adds, "ProFound AI has been something that we as radiologists have started to depend on and really want. Now that we have it available for all our patients coming in, it makes a big difference in our reading efficiency and in the care that we offer. Even the most skeptical of our breast radiologists are now on board with ProFound AI."

-- Sally Grady, Director, Kettering Health Breast Centers, Kettering Health

-- Meghan Musser, DO, Medical Director for Breast Imaging at Kettering Health

References:

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