The evolution of breast screening

Since the 1960s, mammography has been the gold standard for breast cancer screening. Later, new imaging techniques, such as the breast ultrasound and MRI, further improved breast cancer detection as they enable closer examination of uncertain findings in a mammogram. Today, these and newly emerging technologies are used as complementary screening tools, especially for high-risk patients, as this dramatically improves breast cancer diagnosis accuracy.

1960s

Mammography gains acceptance as a screening tool for breast cancer.

1980s

A new imaging technique, **digital breast ultrasound**, is adopted for diagnosis of subtle findings in a mammogram.

1990s

Just like the ultrasound, the adoption of **breast MRI** leads to better characterization of questionable lesions in mammograms.

*Digital mammography requires high-resolution displays to show images with filmlike precision. This kind of resolution can only be obtained with **monochromatic (grayscale) monitors**.*

2000

The FDA approves the first digital mammography system. Mammography film is gradually being replaced by **digital mammography images**.

2006

The digital revolution starts proving its value in healthcare. New software begins to appear, written specifically for quality and compliance assurance of medical-grade displays.

2009

Barco's Mammo Tomosynthesis 5MP

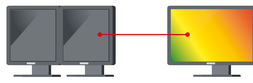
A new screening method called **digital breast tomosynthesis** generates 3D images of the breast and dramatically improves visibility of breast cancers.

2013

Imaging of dense breasts requires additional imaging methods next to mammography, i.e. ultrasound, tomosynthesis or breast MR.

Mammogram + Breast ultrasound + Breast MRI + DBT = multimodality breast screening

*However, mammography displays are not fit to view breast ultrasound or MRI. Radiologists need **two separate workstations** to read these studies, which makes it more difficult to make an efficient diagnosis.*



Digital mammography — Breast MRI and ultrasound

2015

The FDA clears Coronis Uniti™, the first display for viewing of multimodality breast images on a single screen. It also features a brightness boost system that has proven to increase visibility of microcalcifications in dense breast tissue by up to 30%*

Worklist display + Mammography displays + Color PACS displays = Coronis Uniti™

*Tom Kimpe and Albert Xthona. "Quantification of detection probability of microcalcifications at increased display luminance levels." Breast Imaging. Springer Berlin Heidelberg, 2012. 490-497.

2017

The future of mammography is in color. With its **5.8 megapixel resolution**, the new **Nio** offers more pixels than traditional mammography displays. A new 5MP mammography display now features the sophisticated calibrated color that was previously only available on the groundbreaking Coronis Uniti display.

2018

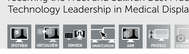
A clinical tool called **SpotView™** now allows breast radiologists to **reduce radiation dose** when taking breast X-ray images.

Even though radiation is lower, they can make equally accurate diagnoses.**

** Krupinski, E. (2018). Reducing Radiation Dose in Digital Mammography by Increasing Display Luminance. Proceedings of SIIM, 2018

2019

A whole range of **tools** now exist on the market, **enhancing radiologists' workflow** by tackling issues they struggle with. A series of Intuitive Workflow Tools contributes to Barco's receiving the Frost and Sullivan Best Practices Award for Technology Leadership in Medical Displays.



2020

The future is service. Thanks to **cloud-connected quality assurance and compliance** platforms, it's easier than ever to make sure that medical displays - yes, even entire display fleets - are up and running, always.

2021

Multimodality imaging in 12MP resolution becomes more common in mammography imaging, resulting in a wider variety of 12MP displays, each with its own specificities.

Barco's Nio Fusion 12MP joins the Nio Color 5MP, making technologies dedicated to women's health accessible to the wider world. Studies have now borne out the useful time advantage for radiologists using these displays, and dramatic time savings associated with the Coronis Uniti™.