The information in this supplement provides additional details on the Standalone Performance Evaluation conducted on Hologic's Reader Study and MRMC Database, outlined in the Genius AI® Detection Software Physician User Guide (MAN-09691-002).

1. Patient Information

Age:	Average 58 years
Sex:	Female
Race/Ethnicity:	(Not recorded.)
Breast Density:	

1.1 Age Characteristics of Standalone Study Cases

Figure 1 shows the age distribution of all 764 cases included in the standalone study. The average patient age was 58 years.

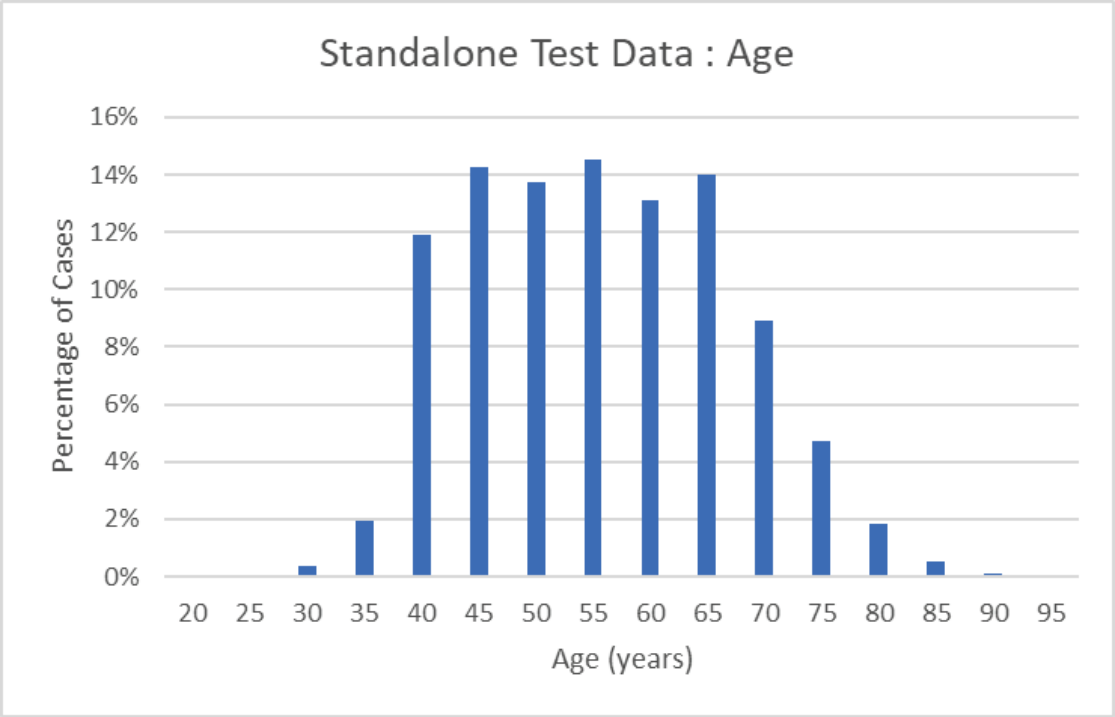


Figure 1: Distribution of patient age within the standalone study data set of 764 cases

1.2 Breast Density Characteristics of Standalone Study Cases

Figure 2 illustrates the breast density distribution of all 764 cases included in the standalone study. The BIRADS density categorization of the 390 cases from the MRMC study was done by the participants of the reader study. The category assigned by the majority of the readers was used for this data set. BIRADS density of the additional 274 negative cases used to extend the data set for this standalone study was assigned by a single expert radiologist.

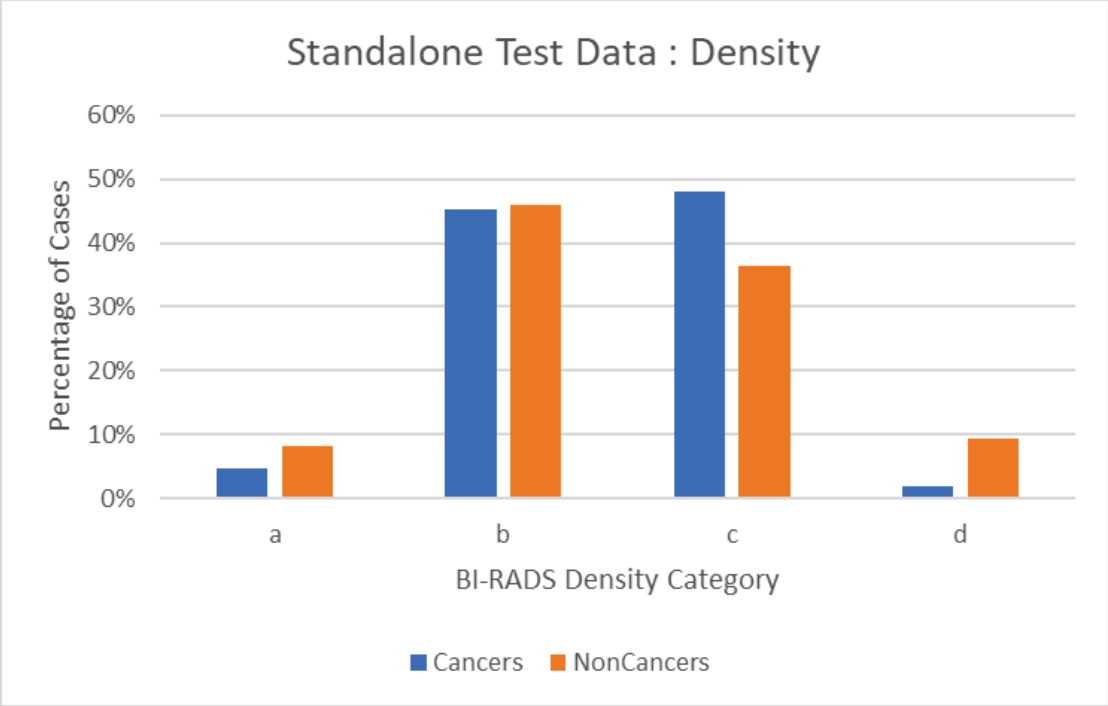


Figure 2: Distribution of BIRADS breast density in the standalone study data set of 764 cases

2. Standalone Performance Evaluation Sub-Group Analyses

2.1 Location Specific fROC Curves for Mass-Based Lesions

Figure 3 shows fROC curves for Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes focusing exclusively on mass-based lesions. The fROC curves of figure 3 demonstrate that the overall performance of Genius AI Detection is comparable when it comes to detection of masses for both Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes, as both fROC curves follow each other very closely across the range. In the case of mass lesion detection, the standard-resolution mode has a slight advantage on sensitivity over the high-resolution mode, but with a slightly elevated false positive marks per case. Overall, however, the differences illustrated in figure 3 are minimal for Genius AI Detection operating on either the standard-resolution or the high-resolution acquisition mode for the detection of mass-based lesions.

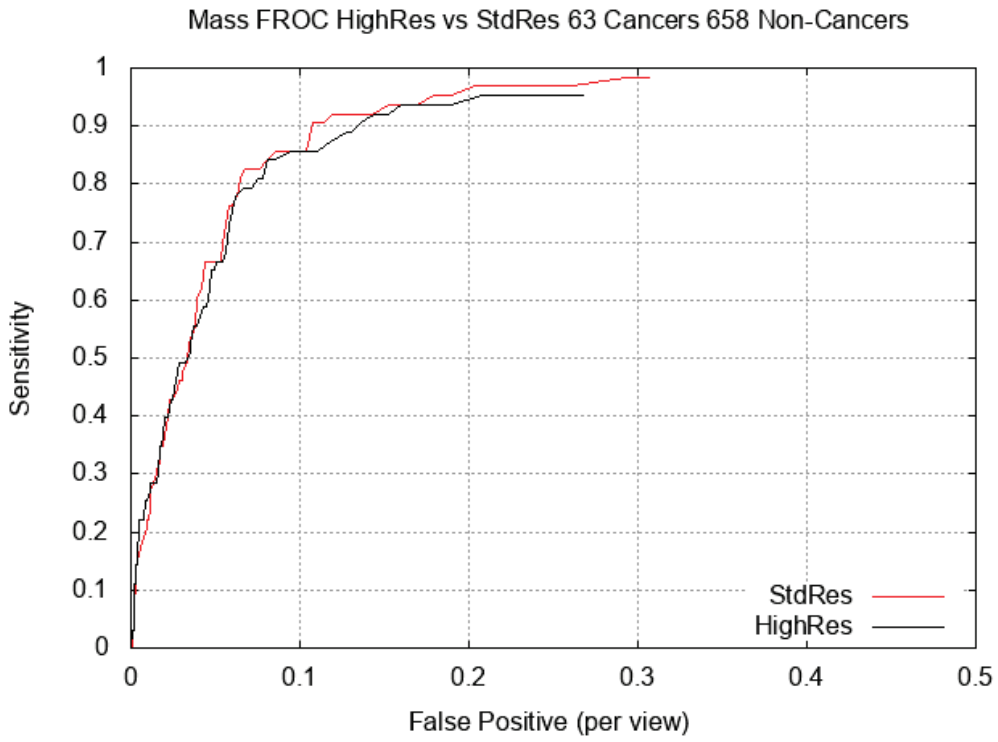


Figure 3: Comparison of Genius AI Detection fROC curves between standard-resolution (StdRes) and high-resolution (HighRes) tomosynthesis acquisition modes using only mass-based lesions. False positives per view were calculated using all non-cancer cases, including biopsy benign cases.

2.2 Location Specific fROC Curves for Calcification Lesions

Figure 4 shows fROC curves for Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes focusing exclusively on calcification lesions. The fROC curves of figure 4 demonstrate that the overall performance of Genius AI Detection is comparable when it comes to detection of calcifications for both Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes, as both fROC curves follow each other very closely across the range. In the case of calcification detection, the standard-resolution mode has a slight advantage on sensitivity and a slightly elevated false positive marks per case over the high-resolution mode. Overall, however, the differences illustrated in figure 4 are minimal for Genius AI Detection operating on either the standard-resolution or the high-resolution acquisition mode for the detection of calcification lesions. Such minor differences are expected as calcification lesions benefit more from the high-resolution acquisition mode.

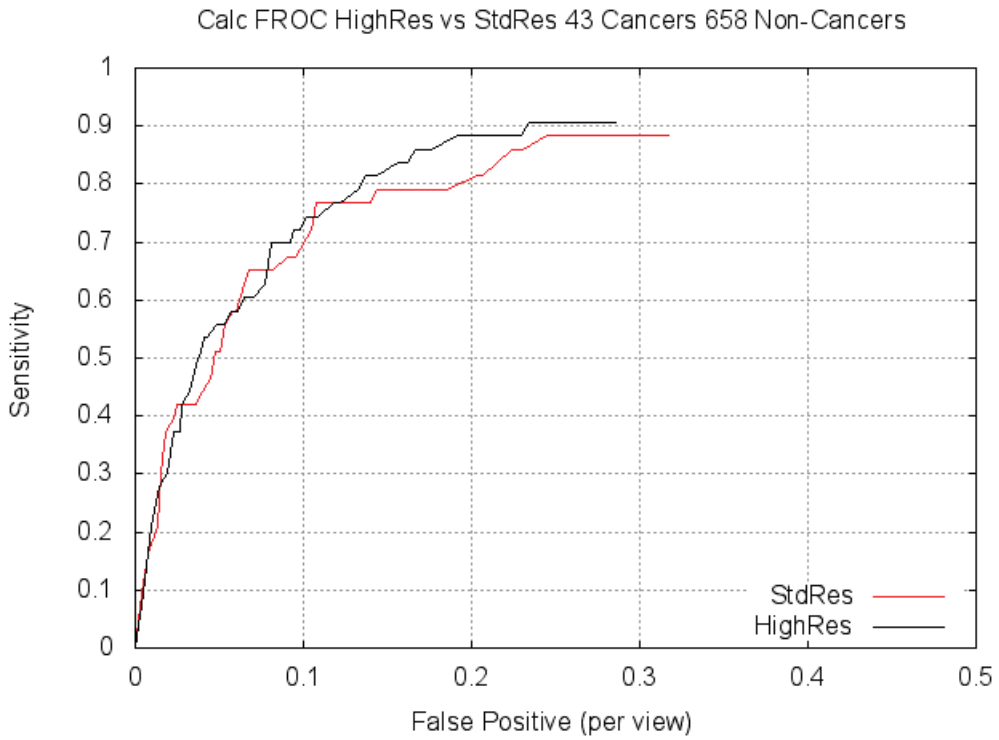


Figure 4: Comparison of Genius AI Detection fROC curves between standard-resolution (StdRes) and high-resolution (HighRes) tomosynthesis acquisition modes using only calcification lesions. False positives per view were calculated using all non-cancer cases, including biopsy benign cases.

2.3 Stratified fROC Curves by Lesion Density

In this part of the standalone study, fROC analysis was used to evaluate the performance of Genius AI Detection under Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes in regards to breast density. The complete data set of 764 cases was divided into two overall density categories: fatty breasts (which included BIRADS density categories a and b) and dense breasts (which included BIRADS density categories c and d). The two data sets, one including 410 fatty breast cases and one including 354 dense breast cases, were then analyzed using fROC analysis to compare the performance of Genius AI Detection on standard-resolution and high-resolution modes for fatty and dense breasts separately.

2.3.1 Location Specific fROC Curves for Fatty Breast Cases

Figure 5 shows fROC curves for Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes focusing exclusively on fatty breasts. The fROC curves of figure 5 demonstrate that the overall performance of Genius AI Detection is comparable when it comes to breast densities of BIRADS categories a and b for both Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes, as both fROC curves follow each other very closely across the range. In the case of fatty breasts, the standard-resolution mode has slightly elevated false positive marks per case compared to the high-resolution mode. Overall, as illustrated in figure 5, there is little difference for Genius AI Detection operating on either the standard-resolution or the high-resolution mode when looking at fatty breasts.

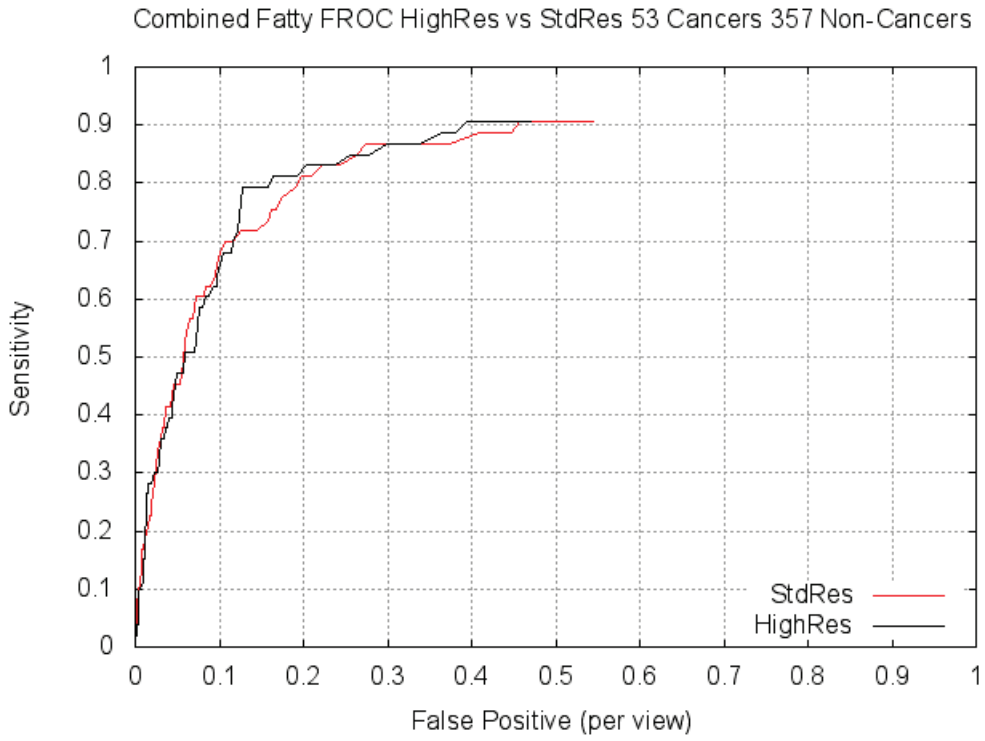


Figure 5: Comparison of Genius AI Detection fROC between standard-resolution (StdRes) and high-resolution (HighRes) tomosynthesis acquisition modes using only cases that fall within BIRADS density categories of a and b (fatty breast cases). False positives per view were calculated using all non-cancer cases, including biopsy benign cases.

2.3.2 Location Specific fROC Curves for Dense Breast Cases

Figure 6 shows fROC curves for Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes focusing exclusively on dense breasts. The fROC curves of figure 6 demonstrate that the overall performance of Genius AI Detection is comparable when it comes to breast densities of BIRADS categories c and d for both Hologic's standard-resolution and high-resolution tomosynthesis acquisition modes, as both fROC curves follow each other very closely across the range. In the case of dense breasts, the standard-resolution mode has slightly elevated false positive marks per case and a slight advantage of sensitivity compared to the high-resolution mode. Overall, as illustrated in figure 6, there is little difference for Genius AI Detection operating on either the standard-resolution or the high-resolution mode when looking at dense breasts.

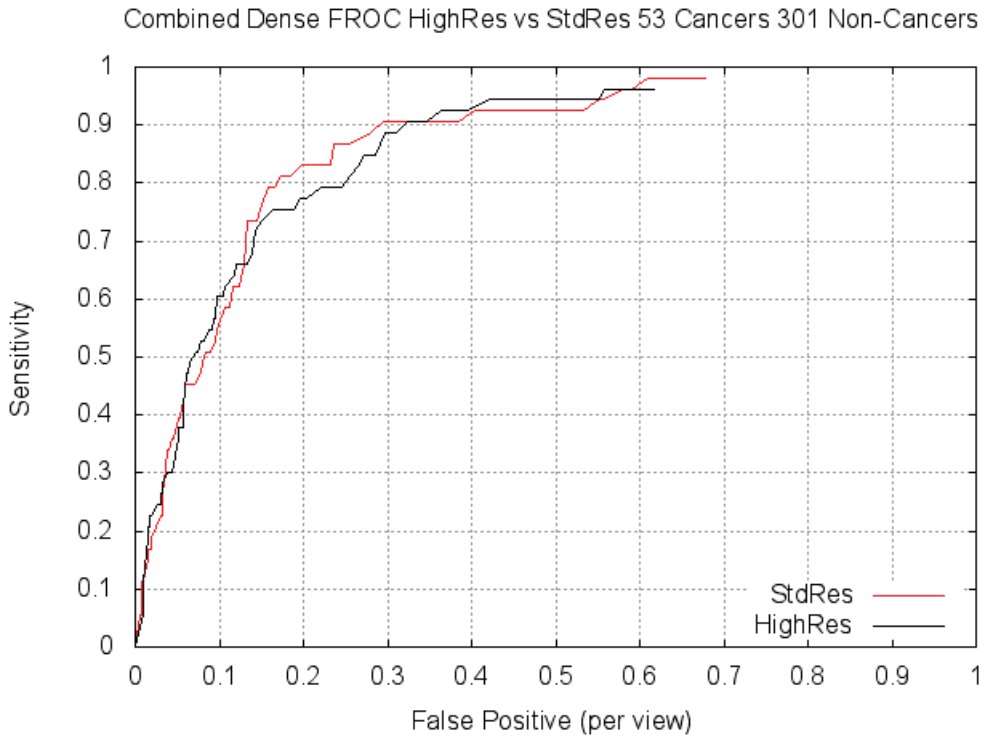


Figure 6: Comparison of Genius AI Detection fROC between standard-resolution (StdRes) and high-resolution (HighRes) tomosynthesis acquisition modes using only cases that fall within BIRADS density categories of c and d (dense breast cases). False positives per view were calculated using all non-cancer cases, including biopsy benign cases.

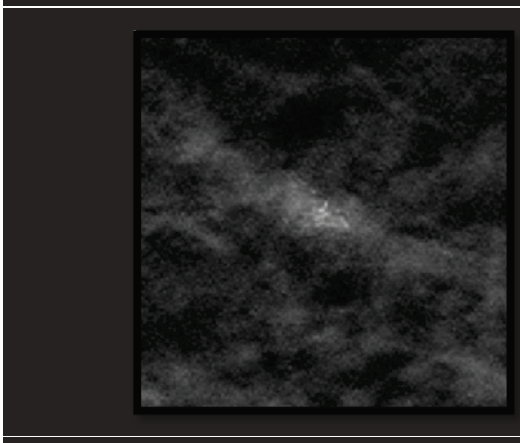
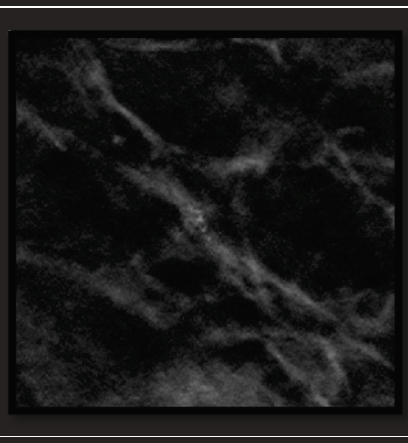
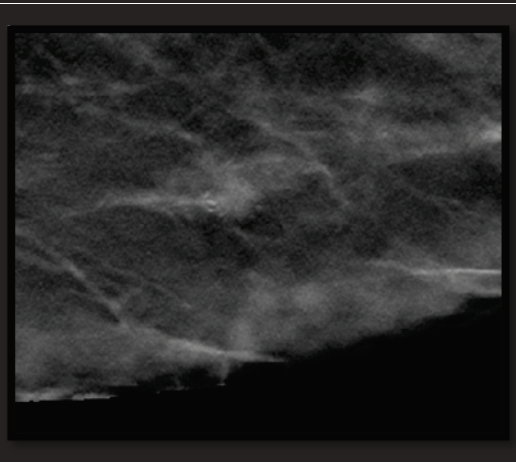
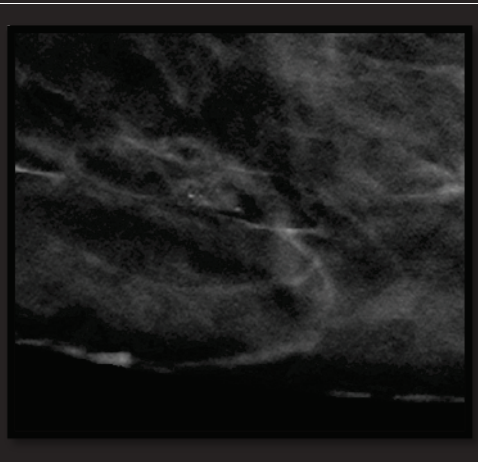
3. Image Acquisition Mode

The study evaluated cancers in the database that were detected with one, but not both, of the Genius AI Detection tomosynthesis acquisition modes. Three cancers were found only under standard-resolution tomosynthesis acquisition mode and two cancers were found only under high-resolution tomosynthesis acquisition mode.

3.1 Cancers Detected Only in High-Resolution Tomosynthesis Acquisition Mode

Table 1 shows the regions of interest of the two cancers Genius AI Detection detected under the high-resolution tomosynthesis acquisition mode but missed under the standard-resolution mode.

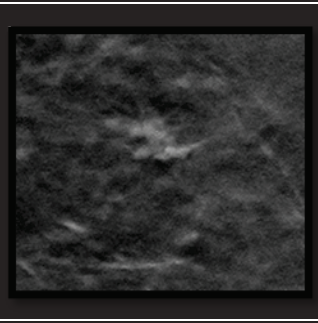
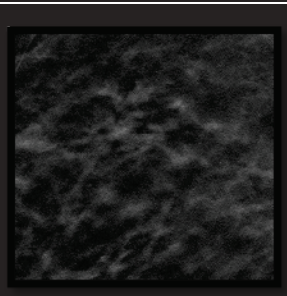
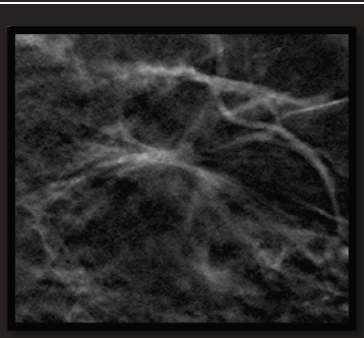
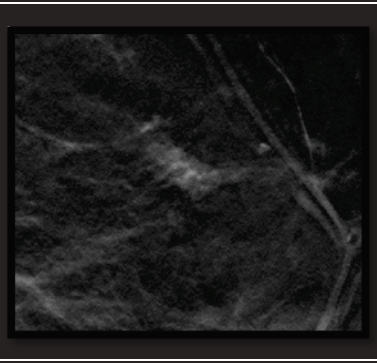
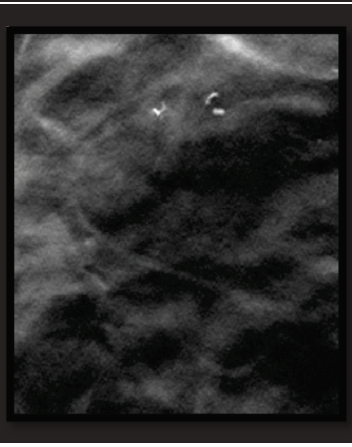
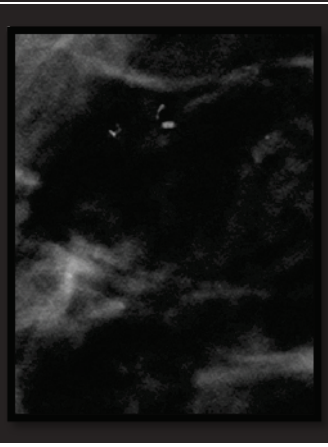
Table 1: ROIs of Cancers Genius AI Detection Detected Only on Hologic's High-Resolution Tomosynthesis Acquisition Mode

CC	MLO
	
	

3.2 Cancers Detected Only in Standard-Resolution Tomosynthesis Acquisition Mode

Table 2 shows the regions of interest of the three cancers Genius AI Detection detected under the standard-resolution tomosynthesis acquisition mode but missed under the high-resolution mode.

Table 2: ROIs of Cancers Genius AI Detection Detected Only on Hologic's Standard-Resolution Tomosynthesis Acquisition Mode

CC	MLO
	
	
	

4. Ground Truth and Labeling

All the cancers labeled as such in the training and standalone/clinical study databases are biopsy proven. Location specific analysis for the purpose of fROC curves is performed by comparing the location of marks presented by the AI algorithm with a ground truth identified by an expert.

Determination of the location of lesions is performed by mammography experts using anonymized copies of clinical reports sent by the clinical sites. The truth marker expert reviews the reports that were dictated by the site radiologist alongside the screening views, as well as associated additional views and post-biopsy images when applicable. The pathology reports that identify the biopsied lesions are studied to identify those lesions that were proven malignant by biopsy. The biopsied lesions are tagged as malignant or benign based on the outcome presented in the pathology report, and their locations as identified by the experts are recorded.

5. Reader Information

Seventeen readers with a range of clinical and tomosynthesis experience participated in the study. All readers were board-certified, MQSA-qualified, and representative of the intended users, including completion of the mandatory 8 hours of training to read 3D mammography image sets and actively read 3D mammography image sets as part of their practice. Readers participating in the study were selected by an independent study coordinator and approved by Hologic. Readers were given a series of 25 training exams (independent from the cases included in the main study) to review how CAD information would be presented to them during the MRMC on the standard-of-care 3D and synthetic 2D image sets prior to the start of the reader study. No cases used for training or reader assessment were used in the pivotal reader study. A summary description of the 17 readers' experience is provided in Table 3.

Table 3: Participating Reader Experience Levels

Reader Number	Practice Type	Average Annual Mammography Interpretation Volume (Personal)	>500 Tomosynthesis Exams in the Last Two Years	Breast Imaging Fellowship	Years Active	Years of Tomosynthesis Experience
1	Private	500	No	No	9	3
2	Community Hospital with academic affiliations	>3000	No	No	36	8
3	Private	1000	No	No	8	4
4	Community Hospital	1200	No	No	13	6
5*	Community Hospital	7000	No	Yes	6	4
6*	Community Hospital	5000	No	Yes	9	9
7*	Academic	>3000	Yes	Yes	6	6
8	Community Hospital	1000	No	No	2	2
9	Private/Group	2000	Yes	No	6	5
10	Community Radiology in hospital and office setting	1700	No	No	26	5
11*	Academic	1400	No	Yes	5	5
12*	Community Hospital	5500	Yes	Yes	26	7
13*	Community Hospital	4500	Yes	Yes	23	5
14*	Academic	1011	Yes	Yes	5	5
15*	Academic	1400	Yes	Yes	10	5
16	Private/Academic	>960	Yes	No	20	2
17*	Community Hospital	6000	Yes	Yes	11	2

* Indicates radiologists who in the last 3 years spent more than 75% of their clinical effort on breast imaging specifically.