

# Does Direct Radiologist-Patient Verbal Communication Affect Follow-Up Compliance of Probably Benign Assessments?

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## **Abstract**

**Purpose:** The aim of this study was to determine whether direct verbal communication of results by a radiologist affected follow-up compliance rates for probably benign breast imaging findings.

**Methods:** This study was institutional review board approved and HIPAA compliant. A retrospective search identified all patients from January 1, 2010 to December 31, 2010 who had breast findings newly assessed as probably benign (BI-RADS category 3). Patients were categorized by whether the radiologist or the technologist verbally communicated the result and follow-up recommendation. Patient adherence to 6-, 12-, and 24-month follow-up imaging recommendations was recorded.

Results: Compliance data were available for 770 of 819 patients in the study. Overall compliance was 83.0% (639 of 770) for 6-month examinations, 68.1% (524 of 770) for 6- and 12-month examinations, and 57.4% (442 of 770) for 6-, 12-, and 24-month examinations. For patients who initially underwent diagnostic mammography alone, there was no significant difference in compliance between those who had and those who did not have radiologist-patient communication (6 months, 81.9% vs 80.8% [P = .83]; 6 and 12 months, 70.8% vs 67.3% [P = .58]; 6, 12, and 24 months, 54.2% vs 58.4% [P = .58]). For patients who initially underwent diagnostic mammography alone versus ultrasound with or without diagnostic mammography, there was no significant difference in compliance (6 months, 81.1% vs 84.3% [P = .24]; 6 and 12 months, 68.1% vs 68.0% [P = .96]; 6, 12, and 24 months, 57.4% vs 57.4% [P = .00]).

**Conclusions:** High initial compliance was achieved by radiologist or technologist verbal communication of findings and recommendations. Direct communication by the radiologist did not increase compliance compared with communication by a technologist.

Key Words: Mammography, probably benign, patient compliance, radiologist visibility

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### INTRODUCTION

The ACR BI-RADS® was designed to standardize the reporting of breast imaging studies by creating categories for the overall assessment of breast imaging findings. The FDA and the Mammography Quality Standards Act require that breast imaging findings be classified into final assessment categories and documented in the

mammography report. One of the BI-RADS categories is probably benign (BI-RADS category 3), for which short-interval imaging follow-up is recommended instead of immediate biopsy for lesions with very low probability of malignancy (<2%). Imaging follow-up is generally recommended at 6, 12, and 24 months after the initial examination. Compliance rates for follow-up of probably benign lesions are variable and have been reported to be 29% to 60% at 24 months [1-4]. A malignancy rate of 1% to 2% has been reported for these probably benign lesions [1,2,5-7]. Therefore, it is advisable that patients maintain the recommended follow-up imaging schedule. However, many factors can affect patient compliance. In other fields of medicine, patient compliance is positively correlated with physician-patient communication [8,9].

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There is a growing body of literature concerning the role radiologists should play in the communication of imaging results to patients in this era of medicine that is shifting toward patient-centered imaging [10,11]. Advocates of increasing radiologist-patient collaboration in health care may see the current lack of direct patient interaction in radiology as a significant limitation to providing "valued" care, as surveys have shown that many patients do not know that radiologists are physicians and highly trained experts in imaging interpretation [12,13]. In 2007, the ACR launched the Face of Radiology campaign to change the public's perception of radiologists and increase awareness of the valuable role radiologists play in patient care. Stepping out of the reading room to directly communicate imaging results with patients may be an important opportunity for radiologists to not only increase their visibility but also to possibly improve patient compliance by explaining to patients the need for follow-up imaging.

It is not yet known if direct radiologist-patient communication of imaging results at the time of the initial diagnostic examination improves patient compliance with follow-up recommendations. The objective of this study was to determine whether direct verbal communication of results by the radiologist affected follow-up compliance rates for probably benign breast imaging findings.

### **METHODS**

Institutional review board approval was obtained before initiation of this HIPAA-compliant study. The requirement for informed consent was waived. A retrospective search of the breast imaging database at our institution (a National Cancer Institute-designated Comprehensive Cancer Center and National Comprehensive Cancer Network member institution) was performed to identify all patients who presented between January 1, 2010 and December 31, 2010 for breast imaging and had findings internally coded as new probably benign (BI-RADS category 3) findings. The examinations newly coded as probably benign represented 2.7% of all mammographic studies interpreted at our institution in 2010. Patient demographic data and radiology reports were then retrospectively reviewed in the electronic medical record.

Patient demographic data obtained included age, personal history of high-risk lesion or breast cancer, and family history of breast cancer. Radiology reports were reviewed to obtain examination dates, lesion types (calcifications, mass, asymmetry, focal asymmetry, or other),

breast density, type of diagnostic imaging performed, and whether direct verbal radiologist-patient communication of findings and follow-up imaging recommendations was documented in the initial report. Biopsy data, including pathologic results, were recorded.

All lesions assessed as probably benign were evaluated with diagnostic imaging by an on-site radiologist. Diagnostic mammograms were performed with digital technique on GE Senographe Essential systems (GE Healthcare, Little Chalfont, United Kingdom). All ultrasound studies were performed by a radiologist using GE Logiq systems (GE Healthcare). All mammograms and ultrasound images were interpreted by 1 of 14 Mammography Quality Standards Act-certified breast imaging radiologists with 2 to 31 years of experience. Thirteen of the 14 radiologists had completed breast imaging fellowships, and the single radiologist without fellowship training had >20 years of experience in breast imaging. All technologists who informed patients of probably benign results worked exclusively in the breast imaging department of the institution's comprehensive cancer center and had between 10 and 35 years of experience.

The standard recommendation for follow-up imaging of a probably benign finding was 6, 12, and 24 months. At the completion of the patient's diagnostic examination, results were verbally communicated to the patient in one of two ways: either directly by the radiologist or by the breast imaging technologist. The radiologists communicating the results had between 2 and 31 years of experience and used similar verbiage in their patient discussions. The technologists who communicated the probably benign results all had >10 years of experience and were trained and experienced in communicating imaging results to patients. The technologists used similar verbiage for discussing probably benign results, using modifications as needed for patient understanding. The technologists were trained to communicate the probably benign results and recommendations by the lead mammographic technologist, who had 35 years of experience. If there were patient questions regarding the results, the technologist or patient could request direct communication by the on-site radiologist. The radiologists and technologists discussed the results and recommendations in a private room, which may have been a mammography suite, ultrasound suite, or patient consultation room, depending on room availability in the clinic.

After either method of results communication, the technologist had each patient sign a written standard

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