COVID's Effect on Screening Mammography and Breast Cancer Detection

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In April of 2020, the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services both published guidelines recommending that non-urgent procedures, including routine cancer screening, be postponed to prevent healthy patients from being exposed to the SARS-CoV-2 virus at medical facilities. UCLA Health halted almost all screening mammography for about six weeks in the Spring of 2020, as did a majority of other health centers across the country.

UCLA's suspension of mammography applied only to screening mammograms, not to diagnostic mammograms. "It's important to note the we never told symptomatic women not to come to the doctor when they had a concern. We did, however, triage these exams and help patients and providers decide when it may be safe to postpone coming in," states Hannah Milch, MD, assistant clinical professor of radiology.

"At UCLA, we typically perform about 150 screening mammograms a day," continues Dr. Milch. "It's a really big part of what we do in breast radiology." She points out that because of the COVID-19 pandemic, "millions of women across the country and thousands of women at UCLA were not getting this important breast cancer screening test that has been shown to save lives."

The pandemic's effect on women's breast health is likely to extend well beyond the delay caused by the disruption to screening mammography services. Some women cancelled or failed to schedule screening appointments due to their reluctance to visit health care facilities during the pandemic. Other factors affecting breast cancer screening include loss of jobs and health care benefits, childcare issues and the economic and psychological effects of the pandemic, all of which may linger for some individuals long after the public health crisis has abated.

Not surprisingly, new breast cancer diagnoses were down amid the pandemic-driven decrease in screening mammography. At UCLA, a 29 percent decrease in all newly diagnosed breast cancers and a 58 percent decrease in screen-detected breast cancers were observed from March to August 2020 compared to the same time period in 2019 (see table below). Early-detection

	2019		2020		P Value
	Count	Percent of Total	Count	Percent of Total	
Total Malignancies	218	—	155	—	0.018*
Screen-detected Malignancies	125	57.34%	53	34.19%	0.001*
Diagnostic-detected Malignancies	93	42.66%	102	65.81%	0.496

*Significant p-values ($p<0.05$)

Number of total malignancies, screen-detected malignancies, and diagnostic-detected malignancies diagnosed from 3/15/2019-8/15/2019 and 3/15/2020-8/15/2020. Screen-detected malignancies were diagnosed as a result of a finding on a screening mammogram. Diagnostic-detected malignancies were diagnosed as a result of clinical concern (e.g. breast lump). *Authors: Claire Lis, MD; Lucy Chow, MD; Hannah Milch, MD; Stephanie Lee-Felker, MD; Anne Hoyt, MD*

orthodoxy suggests that this decrease in new diagnoses would lead to higher breast cancer mortality down the road. One published study suggests a potential increase of 33,890 deaths in the U.S. from all cancers due to COVID-19's effect on cancer care.

But the actual effect of delayed or cancelled breast cancer screenings remains unknown. Mammography screening guidelines have evolved over time, but determining optimal utilization is inherently problematic given the tradeoffs between the benefits of early detection and the costs of unnecessary testing and medical care — costs that include the increased anxiety and sometimes morbidity that patients are subject to in addition to the financial costs.

The COVID-19 pandemic may present an opportunity to learn more about the costs and benefits of screening mammography. It is the type of natural experiment that can be especially valuable to researchers in areas where manipulating care for purposes of experimentation would be ethically untenable.

"We are going to be looking at the size and stage of breast cancers detected after COVID — are they bigger because women waited longer between screenings," explains Dr. Milch. Even if that proves to be the case, Dr. Milch points out that the delay in detection may not affect outcomes for most women. "The treatment for breast cancer is so good now that with the exception of some highly aggressive subtypes, the difference in treating a one-centimeter tumor and a two-centimeter tumor may not justify such frequent screening for all eligible women. A more risk-stratified approach to screening mammography is already an active area of research."

Dr. Milch stresses that more study is needed both to understand the long-term consequences of reduced breast cancer screening during the COVID-19 pandemic and to determine if this can inform screening mammography guidelines. Nationwide breast cancer outcomes during the pandemic are currently under investigation by the Breast Cancer Surveillance Consortium. "While more study is needed to determine the impact of these delayed and missed screenings, the COVID pandemic may ultimately provide insights that have important implications for future routine breast care and cancer screening," explains Dr. Milch.