

Potential Impact of Delay in Cancer Screening due to COVID-19

Matthew I Ehrlich and Muhammad Wasif Saif*

Department of Medical Oncology, Northwell Health Cancer Institute, Donald and Barbara Zucker School of Medicine at Hofstra and Feinstein Institute for Medical Research, USA

Correspondence should be addressed to Muhammad Wasif Saif, wsaif@northwell.edu

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1. EDITORIAL

The goal of cancer screening is to detect malignancies, or their precursor lesions, at an early stage prior to the onset of symptoms. When discovered early, treatments are more effective and there is increased chance for a cure [1]. From 1990 to 2015, there was a 26% decrease in mortality across all tumor types in the United States, with even greater declines among specific sites [2]. A proportion of this regression can be attributed to the implementation of high-quality screening guidelines during this period [1]. In addition to mortality, cancer incidence continues to decline, having decreased by an average of 0.6% per year from 2012 to 2016 [3]. Clearly, screening methods have proven extremely useful in the early detection of malignancies.

Recommended screening guidelines are continuously updated based on the latest scientific knowledge. The most recent recommendations put forth by the American Cancer Society for the early detection of tumors in average-risk, asymptomatic adults are found in table 1 [4]. Breast cancer screening is now recommended for women starting at age 40 with yearly mammograms through age 54; after this, it may be done biennially. Cervical cancer screening is recommended for women age 21-29 with pap tests every three years; this may be substituted with the combination of pap tests and HPV DNA tests performed every five years starting at age 30. Colorectal screening is

now recommended for all adults with average risk starting at age 45. Various screening options exist for colorectal cancer, including annual fecal immunochemical tests, annual high-sensitivity guaiac-based fecal occult blood test, stool DNA tests performed every three years, colonoscopy every 10 years, CT colonography every five years and flexible sigmoidoscopy every five years. Lung cancer screening is recommended annually via low-dose helical CT for adults age 55-74 with a 30-pack-year smoking history who either are current smokers have quit within the last 15 years. Prostate cancer screening no longer has proven benefit, however men age 50 and above are advised to discuss screening options with their healthcare providers [4].

Unfortunately, the COVID-19 pandemic has altered the medical landscape in that patients are being advised to refrain from medical facilities for all but essential services. The UK recently announced that they have suspended national cancer screening programs [5]. Similarly, in March 2020, the American Cancer Society recommended that Americans should not go to a healthcare facility for routine screening [6]. Similarly, a consensus also came during the COVID-19 pandemic narrating that it is appropriate to defer enrollment in lung cancer screening and modify the evaluation of lung nodules due to the added risks from potential exposure and the need for resource allocation. However, they

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mentioned that local, regional, and patient related factors that should be considered when applying these statements to individual patient care [7]. As a result of these policies, cancer screening rates have drastically declined. A report published by the Epic Health Research Network found that screening rates for breast, colon and cervical cancer

fell between 86% and 94% in March 2020 compared to the average during this month in previous years [8]. In addition, a recent study put forth by Komodo Health found significant declines in volumes across all screening tests examined, with cervical cancer screening representing the largest drop at 68.2% [9].

Cancer	Population	Screening Modality	Recommendation
Breast	Women aged 40-54 years	Mammography	Annual screening offered between ages 40 and 44 years; women aged 45-54 years should be screened annually
	Women aged ≥ 55 years	Mammography	Women aged ≥ 55 years may transition to biennial screening
Cervical	Women aged 21-29 years	Pap test	Women age 21-29 years should receive screening with pap test every 3 years
	Women aged 30-65 years	Pap test and HPV DNA test	Women aged 30-65 years may continue with pap test alone every 3 years or receive both pap test and HPV DNA test every 5 years (preferred)
Colorectal	Men and women aged 45-75 years	Fecal immunochemical test (annual), high-sensitivity guaiac-based fecal occult blood test (annual), multitarget stool DNA test (every 3 years), colonoscopy (every 10 years), CT colonography (every 5 years), flexible sigmoidoscopy (every 5 years)	Adults aged 45-75 years should undergo regular screening with either a high-sensitivity stool-based test or a structural (visual) examination
Lung	Current or former smokers age 55-74 years in good health with ≥ 30 -pack-year history of smoking	Low-dose helical CT	Annual screening in adults aged 55-74 years who are current smokers or have quit within the last 15 years and have ≥ 30 -pack-year smoking history
Prostate	Men aged ≥ 50 years	Prostate-specific antigen test with or without digital rectal exam	Men aged ≥ 50 years with ≥ 10 -year life expectancy should make an informed decision about screening with their healthcare provider

Table 1: Latest cancer screening recommendations from the American cancer society.

As screening accounts for a significant portion of newly diagnosed cancers, it is of the utmost importance to resume routine screening programs. The latest recommendation from the American cancer society in May 2020 no longer advises against screening, but suggests that patients make individualized joint decisions with their healthcare providers on a case-by-case basis [6]. However, this is far from the goal of a universal return to routine screening. Thus, as this pandemic ensues, it will be increasingly important to find ways to safely return to outpatient medicine in order to allow these screening tests to take place.

In the meantime, there are alternatives that may allow for adequate cancer screening to take place. DNA stool tests for the FIT-DNA test (also referred to as the stool DNA

test) for colorectal cancer combines the FIT with a test that detects altered DNA in the stool represents one viable option, as they can be easily performed at home without any extraneous interactions [10]. Similarly, there are number of tests available home kit for cervical cancers, such as UDo, SoloPap, Eve Kit, myLAB, Colli-Pee urine test, etc. [11]. Interestingly, a Swedish study have shown previously that the home test was done more frequently, and revealed a higher percent of women who were then found to have pre-cancerous conditions of the cervix, hence provided an option without going to the clinic or office [12]. Mobile mammograms for breast cancer screening may represent another alternative outside of the typical healthcare setting, provided that the proper precautions including PPE are followed [13]. In simple, we need to think outside

the box as humanity was impacted like this almost a century ago. We cannot lose the 26% decrease in mortality across all tumor types in the United States that we achieved over the last many years [1]. In addition, we are afraid that many patients might have been delayed on radiological imaging required for their surveillance for a resected tumor. Data also suggest that there is delays in annual check-ups including HbA1C and knowing the fact that diabetes is a risk factor for many cancers, itself poses a threat to cancer diagnosis [14].

We strongly recommend that lists must be created and followed closely as the medical facilities are ready to accept these patients. But this has to be performed with high level of reassurance and advise the patients that may

need to be tested for COVID-19 before coming to the facilities. Moreover, general principles have to be communicated to them including not coming in person if they have any symptoms.

In summary, cancer screening is clearly crucial to health maintenance, and the delay of this care should not be taken lightly. In these trying times, it is as important as ever to make sure that we provide patients with proper care, not only in the reactive setting but proactively as well. Methods such as at-home and mobile cancer screening will allow us to expand the barriers of medicine and bring healthcare to the patient - a much - needed advantage in the fight against both cancer and COVID-19.

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