

Innovations in Cancer Testing

SUMMARY OF INNOVATIONS



SME Webinar

The Enhancing Cancer Program Grantee Capacity through Peer-to-Peer Learning

is a peer-informed learning and engagement opportunity that supports recipients of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) and the Colorectal Cancer Control Program (CRCCP) to engage with their peers on important topics.

Dr. Keith Winfrey, a recognized expert in preventive medicine, highlighted recent advancements, best practices, and strategies to increase cancer screening rates, with particular attention to providing screening access to all populations and reaching high-barrier populations.

Key Takeaways

- Persistent differences in cancer survival rates underscore the **importance of targeting innovations and outreach to close these gaps.**
- **Updated screening guidelines** include starting colorectal screening at age 45 and using the latest USPSTF recommendations for breast and cervical cancer.
- Community-based interventions, mobile screening units, and patient navigation are **effective approaches to increase screening rates and reduce structural barriers.**
- **Provider recommendation** remains one of the strongest drivers of screening uptake; systems to remind and support providers are crucial.
- **Messaging to patients** should emphasize the availability of multiple, affordable, and convenient screening options.

Advancements in Cancer Screening/Testing Options

Breast Cancer

AI-Assisted Mammography

- AI tools, such as those studied in the large MASAI trial, are now being used to interpret mammograms, increasing detection rates of invasive and in situ cancers and reducing radiologist workload.
- AI-based risk prediction platforms (e.g., Clarity) analyze mammography images at the pixel level to predict a woman's 5-year risk of developing breast cancer, enabling more personalized screening strategies.

Supplemental Imaging for Dense Breasts

- Abbreviated Breast MRI: A faster, highly sensitive MRI scan (about 10 minutes) that improves detection of breast lesions, especially in women with dense breasts.
- Contrast-Enhanced Mammography: Uses contrast agents to improve lesion detection, comparable in effectiveness to abbreviated MRI, though with some risk of contrast reactions.
- Systematic Use of Supplemental Screening: For women with dense breasts and negative mammograms, supplemental imaging (especially MRI) can detect cancers missed by standard mammography.

Cervical Cancer

HPV Self-Collection Testing

- Self-collected HPV tests are now shown to be as sensitive and specific as clinician-collected samples, enabling at-home screening and improving access for underserved or reluctant populations.
- This approach increases screening rates, particularly among those who have never or rarely been screened.

HPV Vaccination Impact

- Widespread HPV vaccination has led to significant declines in cervical cancer incidence, especially among younger women.

Colorectal Cancer

Non-Colonoscopy-Based Screening

Due to limited GI specialist capacity and low colonoscopy uptake, there is a shift toward non-invasive options:

- **Stool DNA and RNA Tests:** Detect tumor biomarkers shed into stool, allowing for early detection of both cancer and precancerous lesions.
- **Blood-Based Tests:** Identify cell-free DNA from cancer cells in the bloodstream, offering another non-invasive screening option.

These tests help close screening gaps for those unwilling or unable to undergo colonoscopy.

Innovations in Screening Delivery

These innovations collectively aim to improve early detection, personalize risk assessment, expand access, and reduce disparities in cancer screening outcomes.

At-Home/Community Based Screening

- Mailing self-collection kits for HPV and stool-based colorectal cancer tests directly to patients increases participation, especially among high-barrier populations.
- Mobile mammography units and community-based outreach reduce structural barriers and improve access.

Patient Navigation/Provider Engagement

- Patient navigation programs help guide individuals through the screening process, addressing barriers and improving follow-up.
- Provider reminders and tailored communication strategies are critical for increasing screening uptake, especially among the unscreened.

Resources

Breast Cancer



U.S. Preventive Services Task Force (USPSTF) Breast Cancer Screening Guidelines
<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening>

The Lancet | Mammography Screening with Artificial Intelligence (MASAI) Study
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(25\)02464-X/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)02464-X/abstract)

Clinical Breast Cancer | iCAD, Inc. Clarity: FDA-authorized AI risk platform for breast cancer
[https://www.clinical-breast-cancer.com/article/S1526-8209\(25\)00120-X/fulltext](https://www.clinical-breast-cancer.com/article/S1526-8209(25)00120-X/fulltext)

American College of Radiology (ACR) | Abbreviated Breast MRI and Contrast-Enhanced Mammography
[https://www.jacr.org/article/S1546-1440\(23\)00421-0/abstract](https://www.jacr.org/article/S1546-1440(23)00421-0/abstract)

USPSTF Cervical Cancer Screening Guidelines
<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/cervical-cancer-screening>

American Cancer Society (ACS) Cervical Cancer Screening Recommendations
<https://www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/cervical-cancer-screening-guidelines.html>

CDC HPV Vaccine Recommendations
<https://www.cdc.gov/vaccines/vpd/hpv/hcp/recommendations.html>

Patient Navigation Services for Breast and Cervical Cancer Screening
<https://www.womenspreventivehealth.org/recommendations/patient-navigation-services-for-breast-and-cervical-cancer-screening/>

FDA-Approved HPV Self-Collection Tests (Examples: Roche cobas, BD Onclarity, Abbott Alinity)
<https://www.asccp.org/wp-content/uploads/2025/11/ASCCP-Practice-Advisory-Self-Collection-for-Cervical-Cancer-Screening-final-updated-10-2-25.pdf>

Cervical Cancer



USPSTF Colorectal Cancer Screening Guidelines
<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening>

Stool DNA Test (Cologuard®)
<https://www.cologuardtest.com/>

National Cancer Institute | Blood-Based Colorectal Cancer Screening Tests
<https://www.cancer.gov/news-events/cancer-currents-blog/2024/shield-blood-test-colorectal-cancer-screening>

National Colorectal Cancer Roundtable Communication Guidebook (2019)
<https://nccrt.org/wp-content/uploads/2023/11/2019-CRC-Communications-Guidebook-v13.pdf>

Colorectal Cancer



Since 1988, National Association of Chronic Disease Directors and its more than 7,000 Members have worked to strengthen state-based leadership and expertise for chronic disease prevention and control in all states, territories, and nationally. Learn more at chronicdisease.org.



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