

Clinical Considerations for the Use of MCED Tests

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How Do MCED Tests Work?

Multicancer Early Detection (MCED) tests are designed to find multiple types of cancer, including those with no recommended screenings today. When added to existing approaches to single cancer screening, these emerging technologies could help clinicians detect and treat a range of cancers at earlier stages.

Using a blood sample, current MCED tests look for circulating tumour cells, tumour DNA, and other substances that might be present in several different types of cancer. If an initial signal is positive for cancer, further analysis can be conducted to determine the source of the cancer, which may provide clinicians with information for follow-up testing to achieve a confirmed cancer diagnosis.

Important Terms to Know

Laboratory Developed Tests (LDTs): Companies offer MCED tests as Laboratory Developed Tests (LDTs), which means the tests and the laboratories have been evaluated for how well the test predicts the presence or absence of a particular gene or genetic change under [Clinical Laboratory Improvement Amendments \(CLIA\)](#) or [College of American Pathologists \(CAP\)](#) guidelines. Many tests utilizing genetic technologies are offered clinically as LDTs. At this time, no MCED test has been approved by the FDA.

Specificity: A test's ability to designate an individual who does not have a disease as negative. A highly specific test means that there are few false positive results.

Sensitivity: A test's ability to designate an individual who has a disease as positive. A highly sensitive test means that there are few false negative results, and thus fewer cases of disease are missed.

Positive Predictive Value (PPV): Refers to the probability that a patient with a positive (abnormal) test result actually has the disease. When the prevalence of preclinical disease is low, the PPV will also be low, even using a test with high sensitivity and specificity.



Conducting Risk-Benefit Assessment



Potential Benefits:

The benefits of MCED testing are not yet fully known but current studies do suggest that the potential benefits of MCED testing include:

- Screening for cancers where there is no screening test available.
- Screening of cancer in asymptomatic patients, which may improve the chances of successful treatments or allow for less invasive treatments and may increase testing adherence compared to current level of screening, which vary by cancer site.



Potential Risks:

To date, no medical society has made recommendations to use MCED tests for cancer screening and there remain unanswered questions about the use of MCED tests which include:

- The entirety of benefits and harms (e.g., false positives, false negatives, overdiagnosis and overtreatment) of using MCED tests for cancer screening.
- Whether detection of cancers by MCED tests results in improved survival for screened individuals.
- Whether detection of cancers by MCED tests reduces deaths due to cancer.

Considerations When Offering MCED Testing

1. Identify potential risk factors

- a. Providers should take into consideration average risk for patients and the following risk factors: Age, Alcohol, Cancer-Causing Substances, Chronic Inflammation, Diet, Hormones, Immunosuppression, Infectious Agents, Overweight/Obesity, Radiation, Sunlight, Tobacco

2. Conduct Risk-Benefit Assessment

- a. Understand the benefits of an MCED test
- b. Understand the best option depending on a patient's risk
- c. Understanding that MCED tests do not replace standard of care screenings
- d. Understanding a patient's desires/resources/options: trials, studies, commercial

3. Guide Informed Choice Discussion with Patient

- a. Discuss risks/benefits; cost considerations; research data; post result expectations

4. Operationalize MCED Testing

- a. The only test currently available in the US is Galleri®
- b. For providers participating in a health system that is utilizing Galleri®, it is important to leverage electronic health information and lab operation clinical decision support for orders, results, patient engagement, and billing

5. Interpret and Manage Results

- a. Negative test follow up expectations
- b. Positive test diagnostic workflows
- c. Managing false negatives or positives

For the expanded list of process considerations view the table [here](#) or read the [paper](#).