

Multicancer tests: Can we screen without knowing the outcome?

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The prospect of a single blood test detecting multiple cancers at an early stage holds immense appeal, offering the result of a revolution in oncology screening. But the path from concept to widespread clinical adoption is fraught with regulatory hurdles, particularly when the evidence base is still evolving. An FDA advisory panel recently convened to discuss multicancer early detection (MCED) tests, revealing a consensus that while the technology is innovative, substantial data gaps remain before these tests can be routinely integrated into patient care.

KEY TAKEAWAYS

- **The Pivot:** The FDA panel's review of MCED tests underscored the need for more robust clinical outcome data, moving beyond analytical validity.
- **The Data:** Current evidence primarily supports the ability of these tests to detect cancer signals, but not yet their impact on morbidity or mortality.
- **The Action:** Clinicians should exercise caution and await further evidence from large-scale, prospective trials before incorporating MCED tests into routine screening protocols.

Early cancer detection remains a cornerstone of effective oncology, with established screening programs for conditions like breast, cervical, and colorectal cancers demonstrating clear benefits in reducing mortality. These programs typically target specific populations at defined intervals, relying on decades of evidence from large-scale randomised controlled trials. The challenge with multicancer tests is their ambition to detect a broad spectrum of malignancies, many of which lack established screening pathways or even effective early interventions.

The current standard of care for cancer screening involves targeted approaches, such as mammography for breast cancer or colonoscopy for colorectal cancer. These methods have well-defined sensitivity, specificity, and, most importantly, a demonstrated impact on patient survival. The introduction of a technology that aims to screen for dozens of cancers simultaneously, often in asymptomatic individuals, necessitates an equally rigorous, if not more stringent, evidentiary bar. This is particularly true given the potential for false positives, which can lead to unnecessary invasive procedures, patient anxiety, and significant healthcare costs.

The Promise and Peril of Early Detection

The allure of MCED tests lies in their potential to identify cancers that currently have no effective screening methods, often those detected only at advanced stages with poor prognoses. Pancreatic, ovarian, and oesophageal cancers are prime examples where earlier detection could theoretically shift the survival curve. The technology behind these tests typically

involves analysing circulating tumour DNA (ctDNA) or other biomarkers in a blood sample, looking for molecular signatures indicative of cancer. This approach represents a significant scientific advancement, moving beyond traditional imaging or single-biomarker assays.

But the result of early detection must be weighed against the practical realities of clinical implementation. A test that identifies a cancer signal must then be followed by diagnostic workup, which can be extensive and involve multiple imaging modalities or biopsies. If the positive predictive value of the MCED test is low, a substantial number of individuals will undergo these procedures unnecessarily. This creates a cascade of potential harms, from procedure-related complications to psychological distress, without a clear benefit.

The analytical validity of many MCED tests is often well-established, demonstrating their ability to accurately detect cancer-associated signals in blood samples. But analytical validity is only the first step. Clinical validity, which assesses how well the test identifies individuals with cancer, and clinical utility, which measures the test's impact on patient outcomes like morbidity and mortality, are far more complex to prove. This distinction was a central point of discussion during the FDA panel's review, highlighting the need for data that extends beyond simply detecting a signal to demonstrating a tangible improvement in patient health. Clinicians often consult resources like the Oxford Handbook of Oncology for established screening guidelines, which are built on robust clinical utility data.

Navigating the Evidentiary Market

The FDA panel's discussion highlighted a need for large-scale, prospective, randomised controlled trials to definitively assess the clinical utility of MCED tests. Such trials would compare outcomes in populations screened with MCED tests against those receiving standard care or no screening. The primary endpoints in these trials would need to be hard clinical outcomes, such as cancer-specific mortality or overall survival, rather than surrogate markers like cancer detection rates. This is a high bar, requiring significant investment and long follow-up periods, but it is essential for ensuring patient safety and benefit.

One of the challenges in designing these trials is the heterogeneity of cancers these tests aim to detect. A single trial would need to be powered to detect differences across multiple cancer types, each with its own incidence, natural history, and response to early intervention. This complexity makes traditional trial designs difficult and expensive. The potential for overdiagnosis, where indolent cancers that would never have caused harm are detected and treated, remains a significant concern. This phenomenon is well-documented in other screening programs and could be exacerbated by broad-spectrum MCED tests.

The panel also raised questions about the appropriate target population for MCED tests. Should they be used in the general population, in high-risk individuals, or as an adjunct to existing screening programs? Each scenario presents different considerations regarding cost-effectiveness, potential harms, and the overall impact on public health. Without clear evidence defining these parameters, widespread adoption risks doing more harm than good. Our previous coverage on ultra-sensitive detection methods has explored similar challenges in the context of minimal residual disease.

Still, the enthusiasm for MCED tests is palpable, driven by the unmet need for earlier detection in many cancers.

Companies developing these tests are actively pursuing the necessary clinical trials, but these studies will take years to yield definitive results. Until then, clinicians must rely on the existing evidence base, which, for MCED tests, is still largely focused on analytical and clinical validity rather than direct patient benefit. The analytical validity of other MRD tests has been a topic of recent discussion, but clinical utility remains the ultimate hurdle.

Where the Data Falls Short

The current data for MCED tests, while demonstrating impressive analytical capabilities, does not yet provide the comprehensive picture needed for routine clinical integration. Most studies to date have focused on the ability of these tests to detect a cancer signal in individuals already diagnosed with cancer or in cohorts at high risk. These studies are important for understanding the biological underpinnings of the tests but do not directly address their utility in a general screening population. The absence of long-term, prospective data on mortality reduction is the most significant gap.

Another area of concern is the management of false-positive results. A test with high sensitivity but moderate specificity, when applied to a low-prevalence population (like asymptomatic individuals for many rare cancers), will inevitably generate a large number of false positives. The downstream consequences of these false positives, including the psychological burden on patients and the strain on diagnostic resources, are not yet fully understood. This is a critical aspect of clinical utility that requires careful evaluation in real-world settings.

The panel's deliberations highlighted that while the technology is exciting, the scientific community and regulatory bodies must remain vigilant about the evidence required for widespread adoption. The history of medicine is replete with examples of technologies that offered the result of delivering on their initial promise but failed when subjected to rigorous clinical evaluation. For MCED tests, the journey from innovation to established standard of care will require

patience, robust trial design, and a commitment to patient-centred outcomes. This is a recurring theme in oncology, as seen in discussions around novel oncology therapies at major conferences.

CLINICAL IMPLICATIONS

The FDA panel's cautious stance on multicancer early detection tests should serve as a clear signal to clinicians: the enthusiasm for these technologies must be tempered by a sober assessment of the available evidence. While the concept is compelling, the data demonstrating improved patient outcomes, particularly reduced mortality, is simply not there yet. Integrating these tests into routine practice without such evidence risks generating a wave of false positives, leading to unnecessary investigations, patient anxiety, and significant healthcare expenditure without a clear benefit.

For now, GPs and specialists should continue to rely on established, evidence-based screening guidelines for specific cancers. Patients inquiring about MCED tests need to understand that these are investigational tools, not replacements for proven screening methods. The potential for overdiagnosis and the downstream harms of false positives are real concerns that must be communicated transparently. The industry's push for rapid adoption must not outpace the scientific rigor required to prove genuine clinical utility.

The future of multicancer detection is undoubtedly bright, but it hinges on the successful completion of large-scale, prospective trials that demonstrate a clear benefit to patients. Until then, the clinical community must resist the urge to adopt technologies based on promise rather than definitive proof. The burden of proof lies squarely with the developers to show that these tests not only detect cancer but also improve lives.

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REFERENCES

1. Kahwati LC, Avenarius M, Brouwer L, et al. Multicancer Detection Tests for Screening : A Systematic Review. *Ann Intern Med*. 2025;178(11):1591-1604. doi:10.7326/ANNALS-25-01877
2. Raoof S, Lee RJ, Jajoo K, Mancias JD, Rebbeck TR, Skates SJ. Multicancer Early Detection Technologies: A Review Informed by Past Cancer Screening Studies. *Cancer Epidemiol Biomarkers Prev*. 2022;31(6):1139-1145. doi:10.1158/1055-9965.EPI-21-1443
3. Rubinstein WS, Patriotis C, Dickherber A, et al. Cancer screening with multicancer detection tests: A translational science review. *CA Cancer J Clin*. 2024;74(4):368-382. doi:10.3322/caac.21833
4. Kennedy E, Durm G, Farlow JL. Multicancer Early Detection Tests: A State-of-the-Art Review for Otolaryngologists. *OTO Open*. 2024;8(4):e70040. doi:10.1002/oto2.70040
5. Wade R, Nevitt S, Liu Y, et al. Multi-cancer early detection tests for general population screening: a systematic literature review. *Health Technol Assess*. 2025;29(2):1-105. doi:10.3310/DLMT1294
6. Sideris M, Menon U, Manchanda R. Screening and prevention of ovarian cancer. *Med J Aust*. 2024;220(5):264-274. doi:10.5694/mja2.52227

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