



NCI Virtual Workshop to Engage Multi-Cancer Detection (MCD) Assay Developers

May 3, 2023

1:00–5:00 p.m. ET



Welcome

Lori Minasian, MD

Deputy Director, Division of Cancer Prevention



Objective

- To invite developers of Multi-Cancer Detection (MCD) Assays to partner with NCI and have their assays considered for the new Vanguard Study



MCD assays represent a new, exciting technology which has the potential to change how we screen individuals for cancer.

How Could MCD Assays Improve Cancer Screening?

- Screen for cancer at organ sites currently without screening test.
- MCD assays may potentially detect cancers which are hard to identify at an early stage.
- MCD assays may potentially identify cancers from many different organ sites with only a single test, saving time and minimizing medical procedures.
- Blood test for MCD may be more acceptable to patients than other forms of cancer screening tests.



Many unknowns exist about using these different assays for the purpose of cancer screening.

Some Unanswered Questions:

- What kind/how many diagnostic tests are needed to make a cancer diagnosis?
- What happens if following a positive MCD assay, you do not find a cancer?
- How many people will be subjected to unnecessary invasive procedures and suffer from various complications of those procedures?
- Will people stop standard of care screening if get a negative MCD test?
- Will a blood test make screening more accessible or exacerbate disparities?
- Does detection of cancers by these assays lead to improved outcomes?



Many unknowns exist about designing trials to evaluate the use of MCD assays for the purpose of cancer screening.



We ALL need to work together to understand how best to use this technology to improve health outcomes.

Topics to Cover in this Workshop

- The overall framework that NCI is using
- The Cancer Screening Research Network and the Vanguard Study
- Describe the process for an assay developer to partner with NCI to have their assay considered for the Vanguard Study
- The reference set collection
- Initial elements for contractual agreements between NCI and the assay developer

Framework for Developing MCD Clinical Utility Trial

Study Planning



Network Development



Vanguard Study



Randomized
Controlled
Clinical Trial

Assay Selection



Framework

- Study Design:
 - Workshop in October 2021 with clinical trialists and primary care physicians with expertise in cancer screening
 - RCT is needed with mortality endpoints to quantify the benefits and harms
 - Pilot study is strongly recommended
- Network to conduct the trials
 - NCI initiated a new clinical trials network to conduct cancer screening clinical trials. Vanguard (pilot study) is the first study.
- Assays for Consideration in the Vanguard (Today's workshop)

Possible Platform Randomized Control Trial Design

Randomization

Control Arm



MCED 1 Arm



MCED 2 Arm



MCED 3 Arm



All Arms
Offered
Standard
of Care
Cancer
Screenings

+

No Additional Tests
Control Arm

+

MCED 1 Tests for
Cancers A, B and C

+

MCED 2 Tests for
Cancers C, D and E

+

MCED 3 Tests for
Cancers E, F and A

Interventions

All
Cancer
Cases and
Cancer
Deaths
Captured
(+ Other
Data)

Primary Endpoints

All Cancer Deaths
Measured

Deaths Rates from
Cancers A, B and C
Compared to Control Arm

Death Rates from
Cancers C, D and E
Compared to Control Arm

Death Rates from
Cancers E, F and A
Compared to Control Arm



Request for Information in January 2022.

**We greatly appreciate the responses
from assay developers.**

Request for Information (NOT-CA-22-033)

January 2022 NCI released a Request for Information (RFI):

- Seeking input from developers of MCD assays on their readiness (*and willingness*) to participate in an NCI led clinical utility randomized controlled screening trial

Responses received:

- 18 from MCD assay developers from industry and academia
- 1 from a cancer patient, requesting to be included as a participant on MCD RCT, if/when launched

Request for Information (NOT-CA-22-033)

- NCI staff met with all the respondents to the RFI.
- Based upon the overall information, there are assays which will meet the criteria for inclusion in the Vanguard study.
- Additionally, the discussions with the respondents were used to develop and refine the criteria that NCI is using for selecting the assays.



Why should assay developers consider this opportunity?

NCI-supported Clinical Trials


- NCI has a 50-year history of successful, practice changing clinical trials in cancer screening, prevention and treatment.
- Pivotal Cancer Screening Trials include
 - Prostate, Lung, Colorectal, Ovarian Cancer Screening Trial
 - National Lung Cancer Screening Trial
- Data and biospecimens have used for multiple analyses to further our understanding of the clinical use, natural history of cancers, as well as refining and improving the technology for screening.

Reasons to Participate with NCI

- NCI is creating the investigator network to design, develop, and conduct studies and trials to evaluate emerging technology for the purpose of cancer screening.
 - Assay developers that participate will have access to investigators who are funded to develop and conduct the studies (recruit the patients, collect the data, analyze the results).
 - While the Vanguard Study is the initial effort, NCI and investigators are interested in conducting a variety of studies to evaluate different technologies.
 - NCI anticipates working with a variety of assay developers and companies over time to evaluate technologies for different clinical scenarios.

More Reasons to Participate with NCI

- Assay developers will receive the data from the trials and studies after completion.
 - NCI partnership with pharmaceutical companies through the NCI clinical trials programs have lead to multiple new uses for oncology drugs and products.
- At this time, two assays will be selected for the Vanguard.
- NCI and investigators are interested in using MCD assays for screening different populations of patients based upon their risk for cancer.
 - There will be opportunities for other studies and trials.



Overview of Cancer Screening Research Network

Elyse LeeVan, MD

Division of Cancer Prevention

Cancer Screening Research Network

- Rationale for a new network
- Goal of the new network



Purpose of the Network

- Conduct multi-center cancer screening trials and studies
- Improve early cancer detection
- Evaluate emerging cancer screening modalities with the ultimate goal of reducing cancer-related morbidity and mortality



Request for Applications (RFA) Released November 18, 2022

Cancer Screening Research Network Funding Opportunity Announcements Published

- ACCrual, Enrollment & Screening Sites (ACCESS) Hub (UG1)
- Coordinating & Communication Center (UG1)
- Statistics & Data Management Center (UG1)

For more information:
<https://prevention.cancer.gov/CSRN>

Network Timeline

- We received a robust response to the RFA
- Applicants are currently under review
- Network expected to be funded in January 2024

RFA Released
November, 2022



Peer Review
Summer 2023



Network Launch
January, 2024



Network Components

Accrual, Enrollment, and Screening Sites (ACCESS)

- Participate in the scientific development of CSRN trials and studies, recruit participants, and conduct study protocols

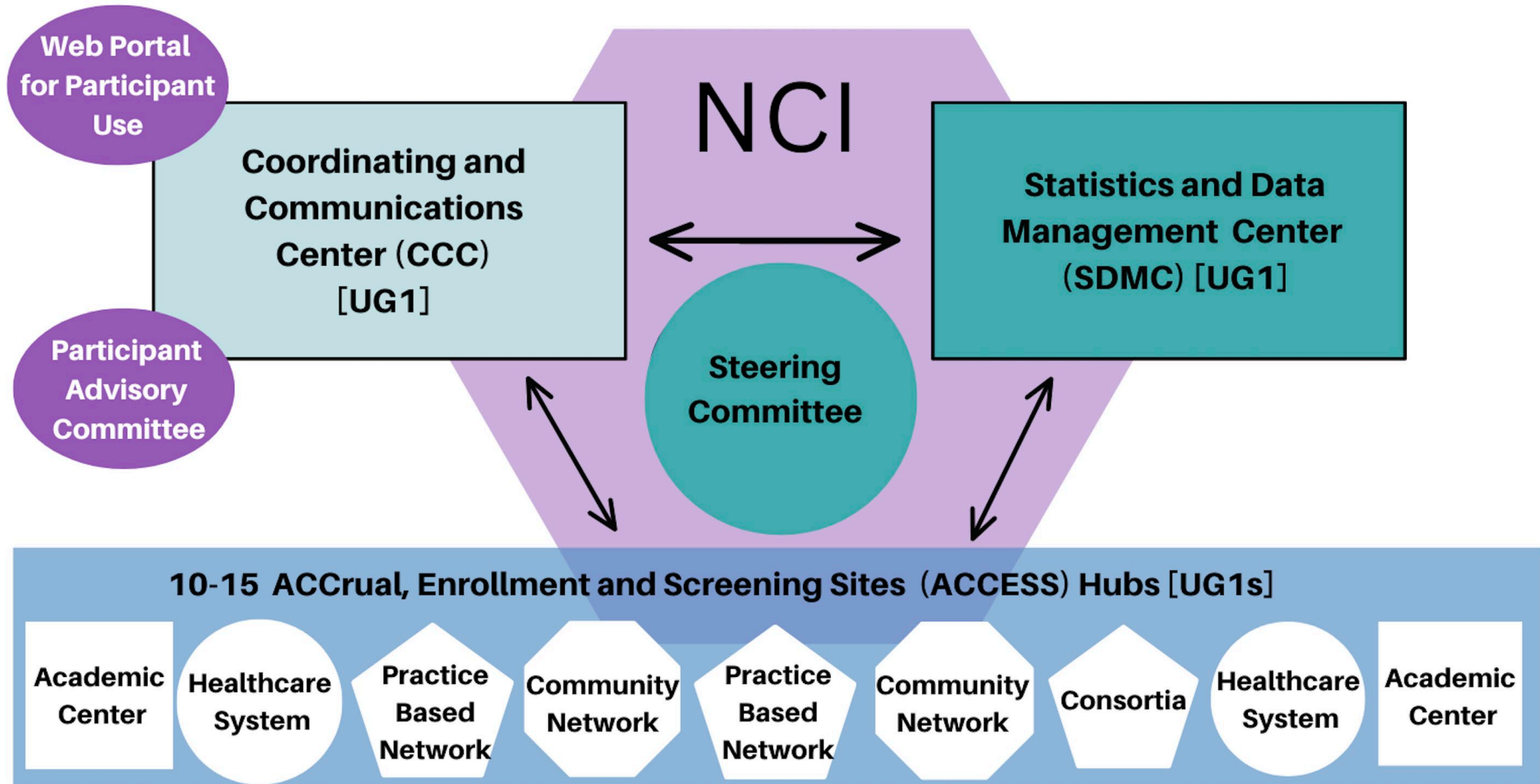
Statistics and Data Management Center (SDMC)

- Provides statistical expertise and centralized data management, quality control, and reporting

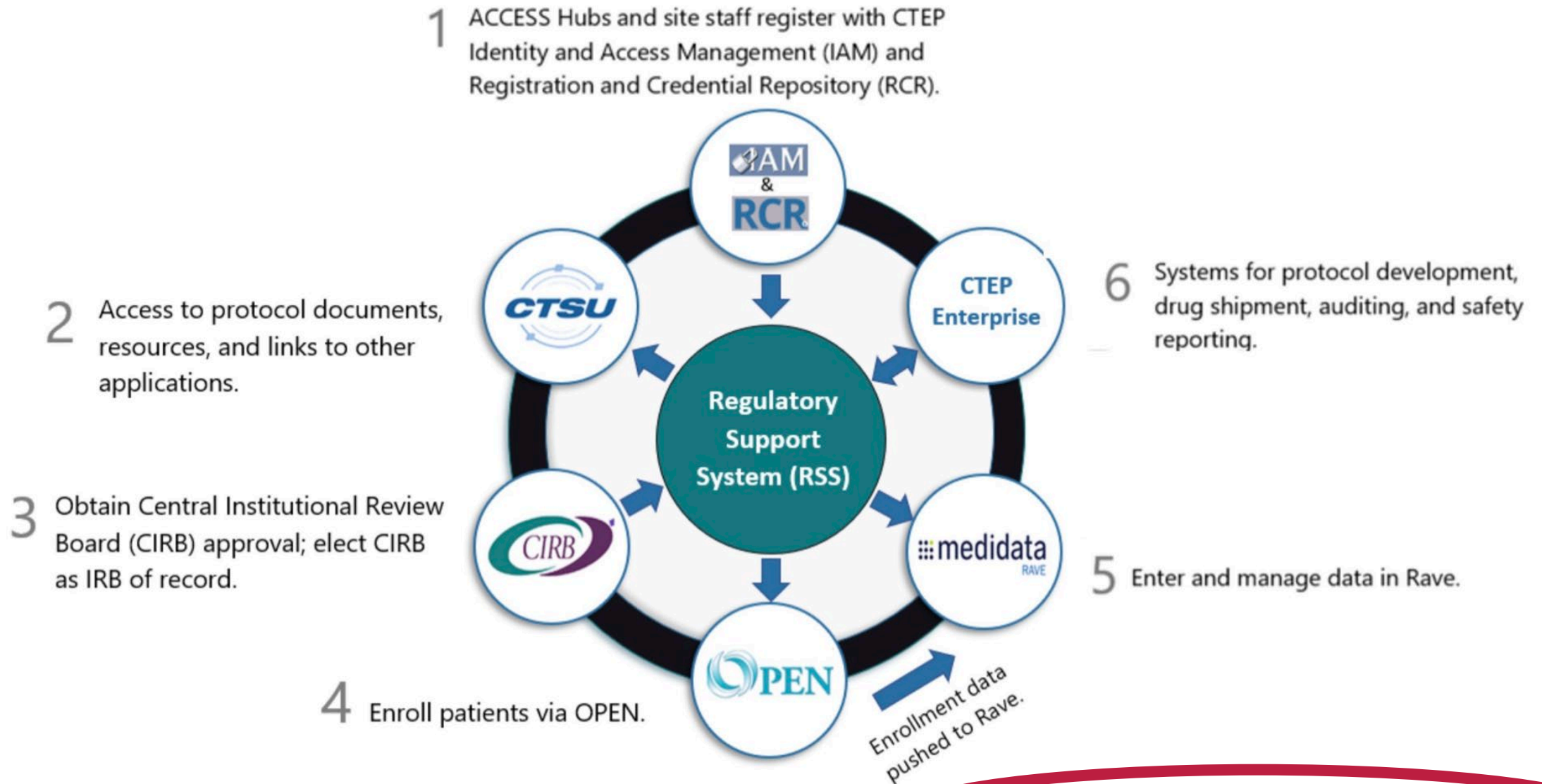
Coordinating and Communication Center (CCC)

- Coordinates study operations, and develops and implements communication activities

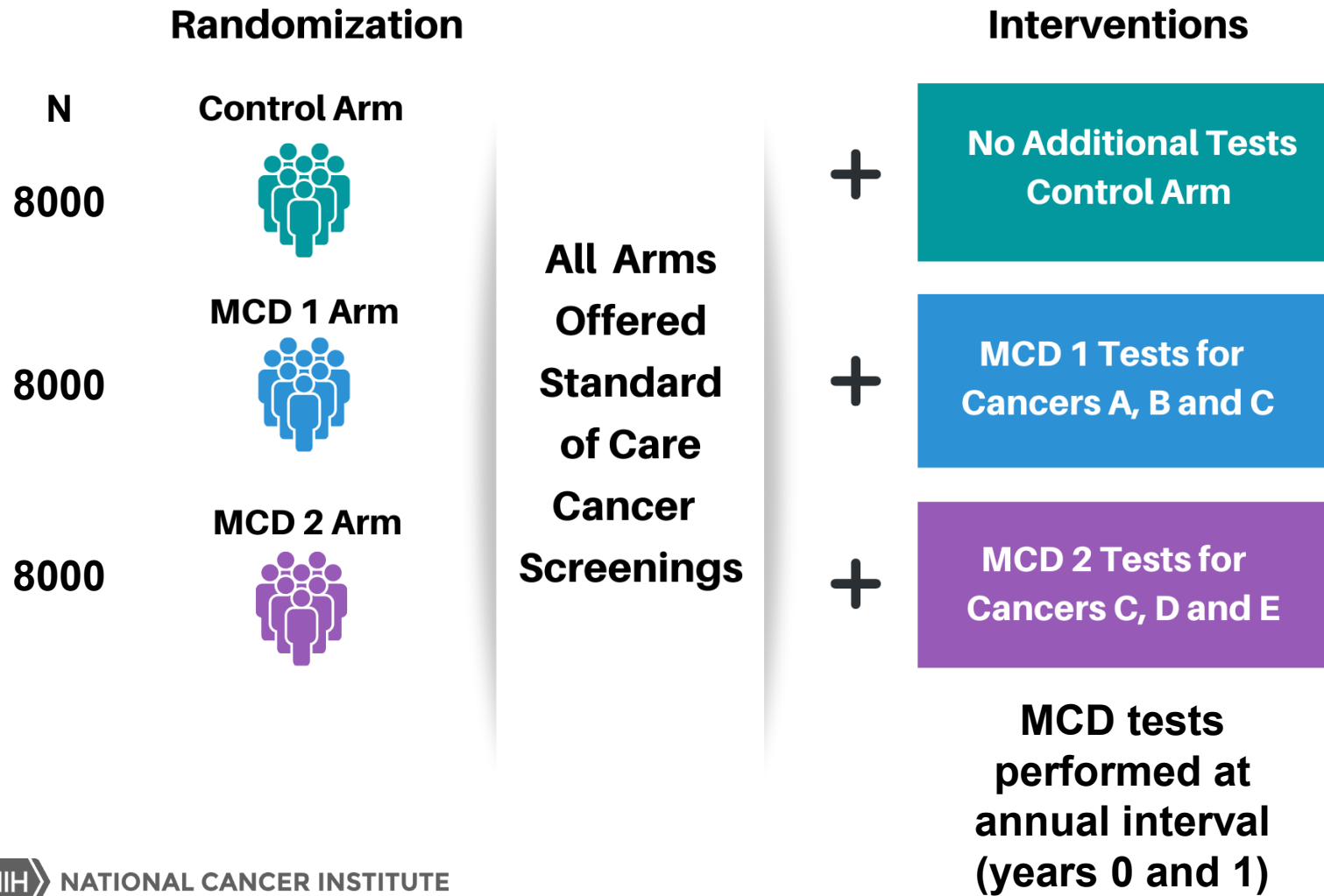
CSRN Structure



NCI Clinical Research Infrastructure

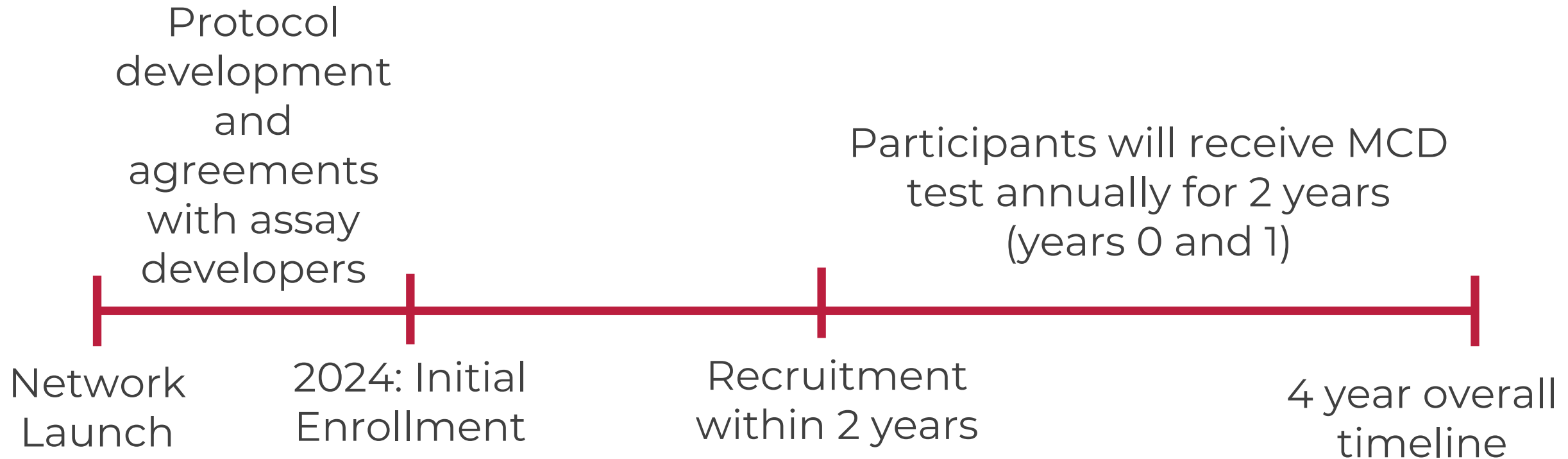


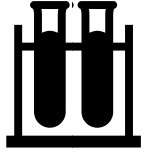
The Vanguard Study (Pilot and feasibility study)



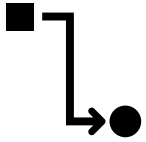
- Objectives of Vanguard Study**
- Assess participant willingness for randomization
 - Determine adherence to testing and diagnostic follow-up
 - Evaluate feasibility of protocol-defined diagnostic workflows
 - Determine reliability and timeliness of blood specimen testing and return by MCD companies
 - Identify facilitators and barriers to recruitment/retention/compliance of diverse participant groups

Vanguard Timeline





**The Vanguard Study will
require participation of 2
MCD assays**



**We have developed a
process to select these
assays**

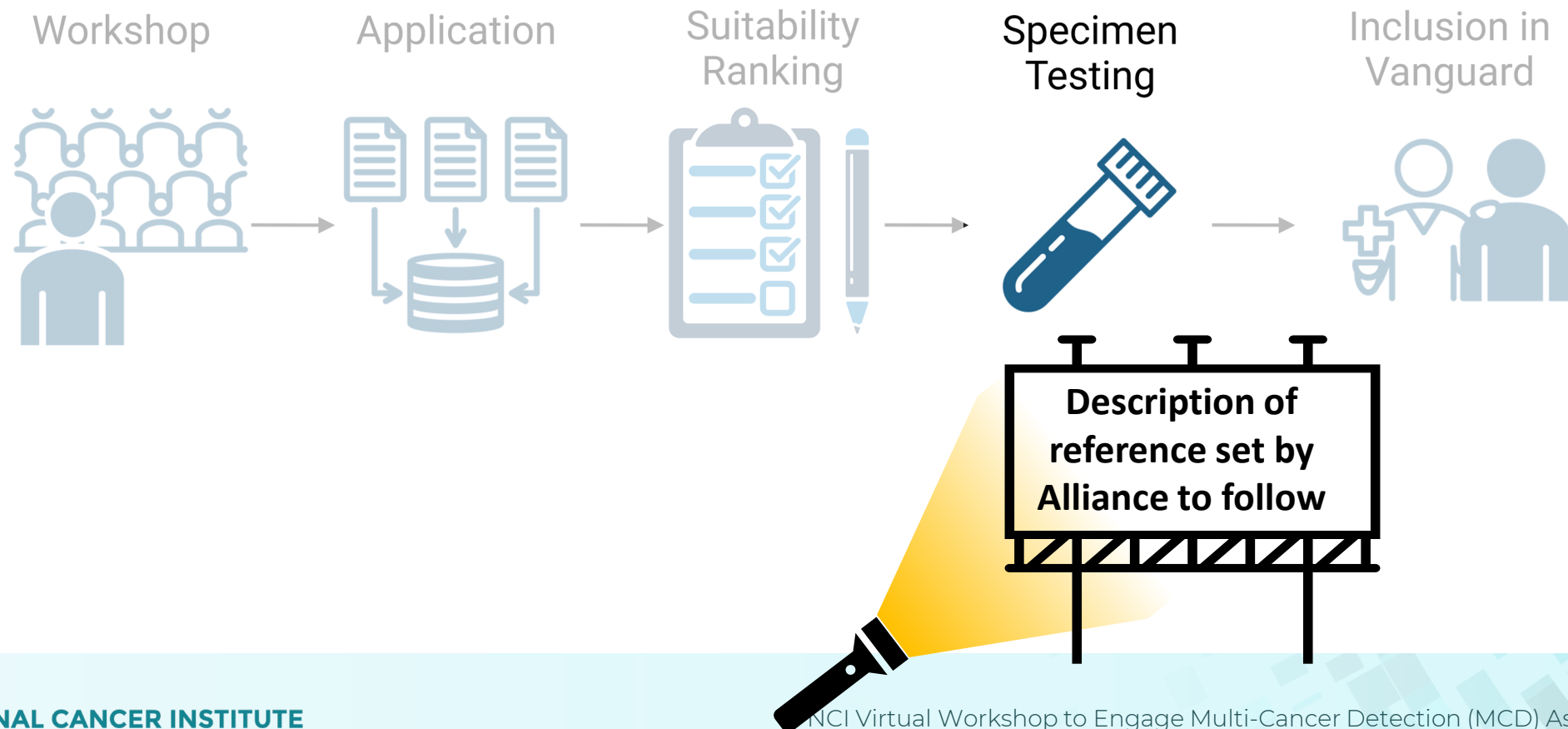


Application and Selection Process for MCD Assay Developers Participating in the Vanguard Study

Amanda Skarlupka, PhD

Division of Cancer Prevention

Bird's-eye View of the Assay Selection Process



Application Process

Developers are to:

1. Email NCIMCED@mail.nih.gov to request a confidentiality agreement and application from NCI
2. Complete application
3. Submit application by replying to the same secure email that sent the application



Information found here:
<https://prevention.cancer.gov/MCD>



For questions email:
NCIMCED@mail.nih.gov



MCD Assay Developer Application Workflow

Developer visits NCI MCD webpage to confirm application instructions

Developer emails application request to:
NCIMCED@mail.nih.gov

Developer receives two (2) emails:

1. Plain email with instructions
2. Secure email with application

Developer fills out the application

RESEARCH GROUPS CLINICAL TRIALS FUNDING & GRANTS RESOURCES NEWS & EVENTS ABOUT DCP

Multi-Cancer Detection (MCD) Research

New technologies under development can pick up signals in blood and other body fluids – such as circulating tumor cells, tumor DNA, and other analytes – that may suggest the presence of cancer. These blood tests look for circulating tumor cells, tumor DNA, and other substances that might be present in different types of cancer. Some of these tests under development are trying to detect cancers at early stages. These kinds of tests are collectively known as either **Multi-Cancer Detection assays (MCDs)** or sometimes **Multi-Cancer Early Detection assays (MCEdEs)**, or **M.C.E.D.s (MCEdEs)**. NCI uses Multi-Cancer Detection (MCD) assays.



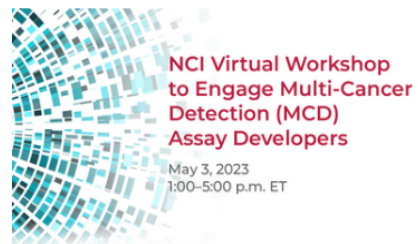
The idea of testing for multiple types of cancers simultaneously with a single MCD test is a new and exciting concept for cancer screening. However, there are no clinical trials showing that the use of these tests for cancer screening reduces cancer deaths. In addition, the potential risks and benefits of using MCD tests for cancer screening are unknown.

This webpage is a gateway to DCP efforts on the study of MCD assays for cancer screening.

Update on National Cancer Institute (NCI) Vanguard Study on Multi-Cancer Detection

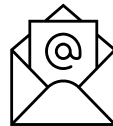
As a central component of the Cancer MoonshotSM, the National Cancer Institute is launching a new research network to study cancer screening, including evaluating the effectiveness of new blood tests for the detection of one or more cancers to prevent cancer-related deaths. If found to be useful, these new blood tests provide the opportunity for less invasive tools for the early detection of cancer. In 2024, NCI will begin enrolling 24,000 healthy people aged 45-70 in a Vanguard Study to lay the groundwork for the later, larger study. The Vanguard study is being funded in part by 21st Century Cures Act Cancer Moonshot funds.

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Apply to Develop Assays

- Request information to apply from NCIMCED@mail.nih.gov
- Complete application and provide lab capabilities
- Submit information

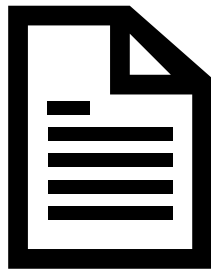


Return of Application Materials to NCI

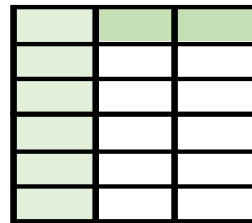


Developer attaches application documents

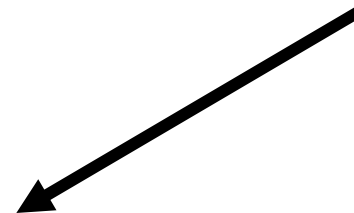
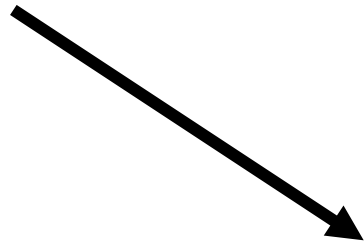
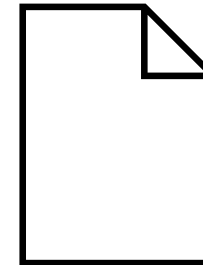
PDF Application



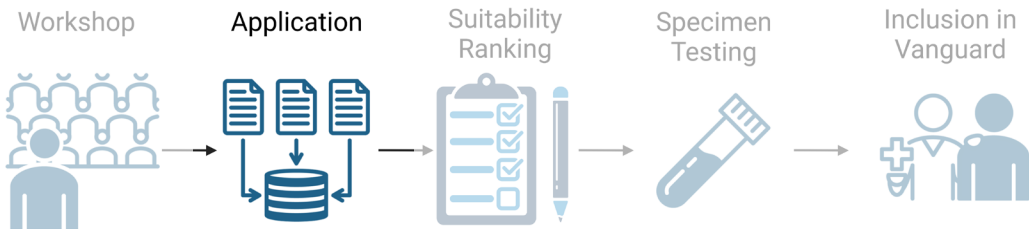
Excel document



Supplemental documents



Developer replies to secure email with attached application documents



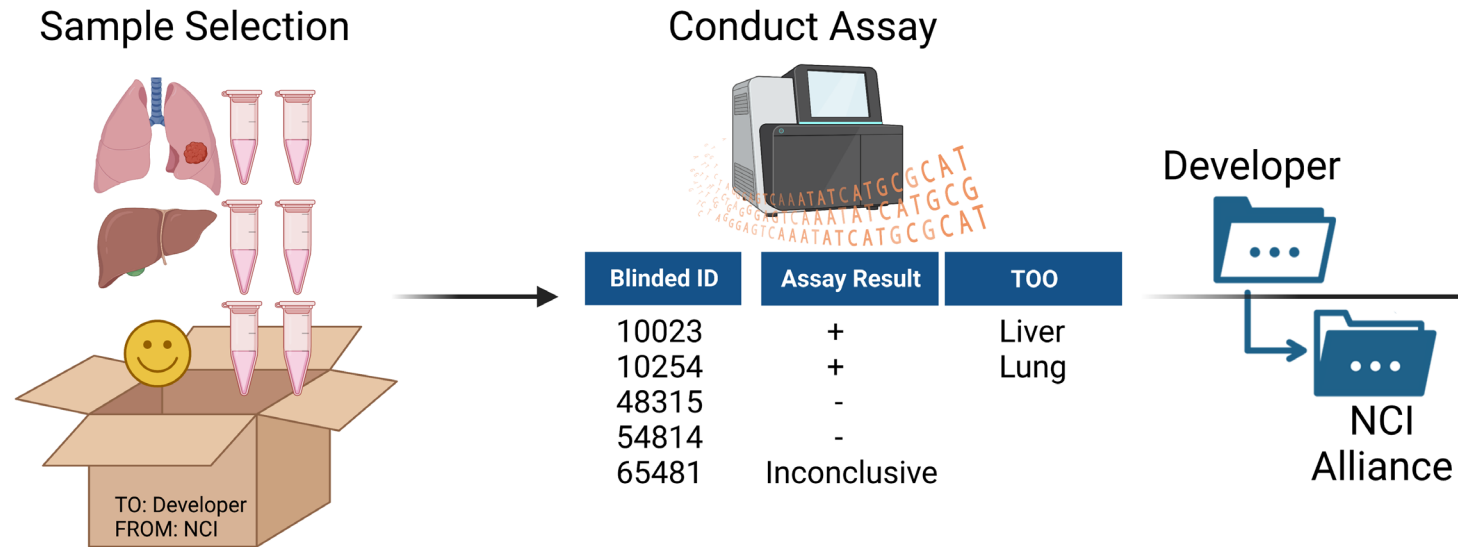
Established Criteria Elements

NCI to evaluate applications based on the following criteria:

- Types of cancers detected
- Sensitivity
- Specificity
- Tissue of origin accuracy (if applicable)
- Sample type and volume
- Prior studies conducted
- Scalability to meet Vanguard requirements



Performance Verification Process –Specimens

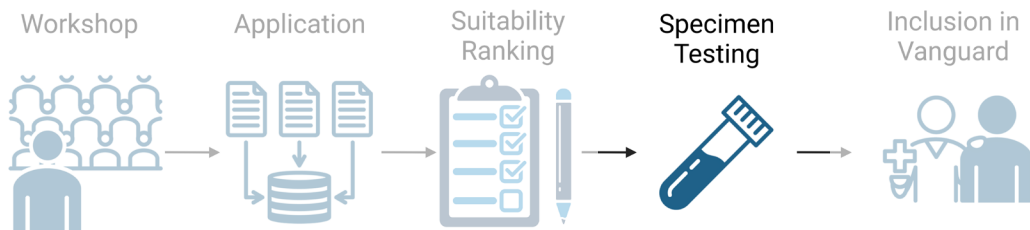


NCI is to:

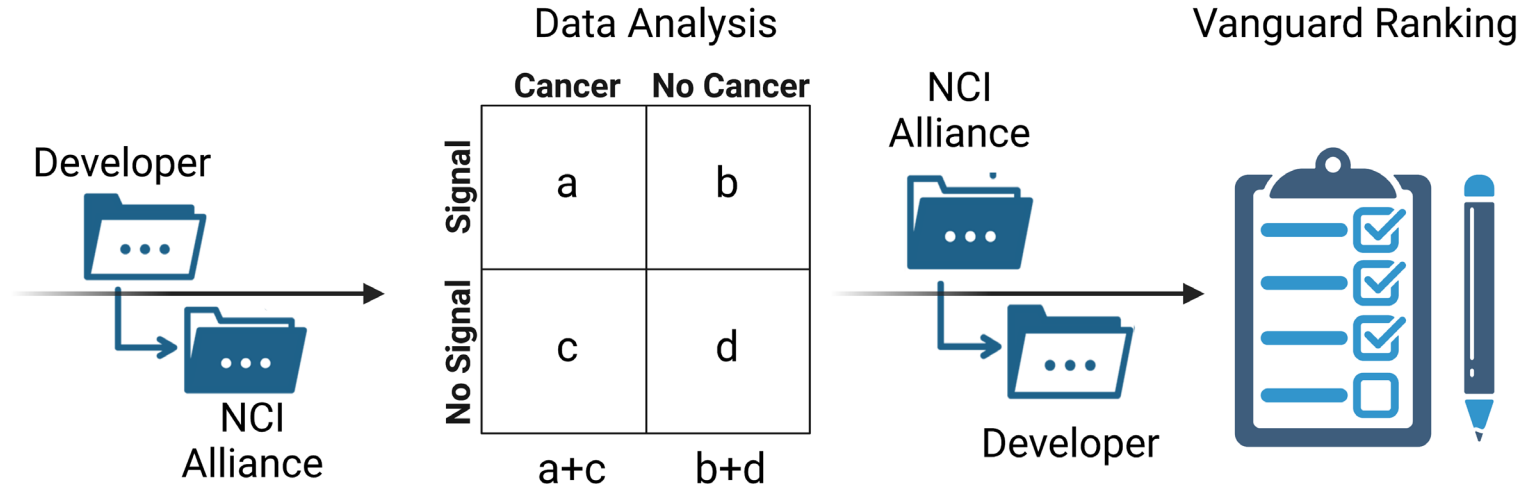
- Select and ship samples (800-1600 vials)

Developers are to:

- Conduct assay
- Return results to NCI

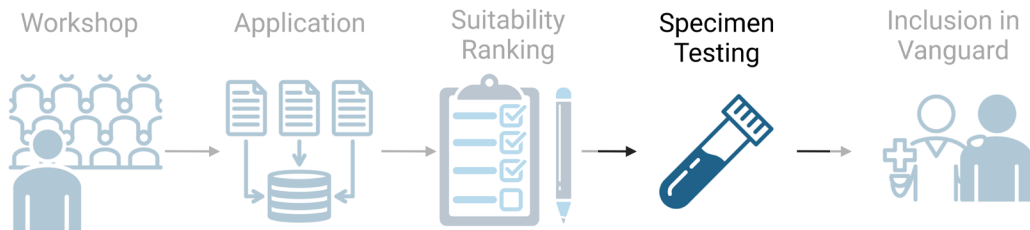


Performance Verification Process –Specimens



NCI is to:

- Analyze results with clinical data (Alliance collaboration)
- Discuss findings with assay developers



Inclusion in the Vanguard

- NCI will select two suitable assays for the Vanguard using previously described criteria taking into account:
 - Application materials, data, and supporting information
 - Outcome of performance verification process
- Assays not selected for the Vanguard will still be eligible for future studies
- There will be other opportunities to work with the CSRN



NEXT STEPS: Application Process

May 8, 2023: Earliest date to request application

June 2, 2023: Last date to request application

June 9, 2023: Due date to submit application

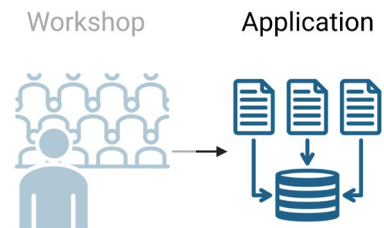
Please check and follow the application instructions on the MCD webpage



Information found here:
<https://prevention.cancer.gov/MCD>



For questions email:
NCIMCED@mail.nih.gov





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(MCD) Assay Developers

Thank you!