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Matching Patients to Accelerate Clinical Trials (MPACT): Enabling technology for oncology clinical trial workflow

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Introduction

- The Veterans Health Administration (VHA) has an estimated 50,000 incident cancer cases annually
- “Increase Veterans’ access to high-quality clinical trials” is a strategic priority of the VHA’s Office of Research and Development
- The success of many trials is hampered by an inability to meet targeted patient accruals
- One critical factor is the lack of efficient eligibility screening processes; coordinators spend an estimated 6-9 hours per patient

MPACT: Matching Patients to Accelerate Clinical Trials

- Research Coordinators were included as part of requirement creation, system design, workflow modeling, and usability assessment
- User-centered design approach and Agile method to facilitate rapid build-test-deploy cycles
- Data from VA's Corporate Data Warehouse (CDW), VA cancer registry, and the VA National Precision Oncology Program (NPOP) for targeted genomic sequencing results

Coordinator workflows

Identified three high-impact opportunities for automation in the prescreening workflow:

1) Automated prescreening list
2) Search filters for additional phenotypic and care-related data
3) Data integration with future clinic appointments

Identified three key high-impact opportunities for facilitating the screening workflow:

1) Electronic eligibility criteria worksheet
2) Eligibility criteria review
3) Tracking of screened patients

MPACT: Current State

- MPACT is currently being piloted with 17 oncology trials (5 prostate, 1 bladder, 10 lung, and 1 head and neck) at 19 VA facilities with 35 active users
- All participants of the structured interview reported time savings; for example, one participant quantified this gain as “usually took me 6 hours to do” before MPACT and now “I've done screening in under an hour.”

MPACT Data

- Short lists of potentially eligible patients are created using information from the health record and the VA National Precision Oncology Program
- Wide-ranging additional data needed to support screening (labs, medications, notes, molecular alterations, etc.) is also presented in the interface alongside criteria to avoid the need to context switch between CPRS/JLV and MPACT
- All data is updated nightly through automated pulls

Discussion & Conclusion

- The objective of MPACT is to improve the efficiency of the screening process for oncology trials.
- Before the implementation of MPACT, patients with rare biomarkers used to repeatedly appear. MPACT's patient tracking functionality avoids "rescreening the same patients over and over again", reducing the time burden.
- Commercial products such as IBM Watson or open-source platforms such as MatchMiner would be limited to the inherent workflow found in these products along with challenges of data mapping and integration.
- A limitation of this report is that the feedback collected from our group of users is part of an iterative user-centered design process and not a formal qualitative research study.

Trial Matching Patient Search

Displays patients who have been diagnosed with cancer and may be eligible for clinical trials.

Station Search Select: 578: Hines, IL

Trial: Lung-MAP | MRN: First Letter Last Name & Last 4 SSN | Last Name | First Name

Oncology Clinic (Edit Choices): (all) | Patient Eligibility Status: Potentially Eligible | Patient Status: (all) | Appointment Date Start: Select Date Range Start | Appointment Date End: Select Date Range End

☐ Strict Match ☐ Alive Only ☐ Sequencing Available

Search

Data Source	Last Updated Time
CDW	Dec 7 2022 10:25AM

Show 10 entries | Column Filter | Export To

Trial	MRN	Last Name	First Name	Gender	Age	Oncology Clinic	Next Appointment	Eligibility Status	Eligibility Note	Status	Contacted	Sequencing Available
Lung-MAP	[redacted]	[redacted]	[redacted]	M	[redacted]	HIN HEM/ONC MD D	[redacted]	Potentially Eligible	post SBRT to contralateral 2nd primary 1/2022			
Lung-MAP				F		HIN HEM/ONC MD D		Potentially Eligible	Recurrent x2, post CRT, NED 4/2022	Other Status		
Lung-MAP				M		HIN HEM/ONC GOLD FELLOW		Potentially Eligible	not enough tissue, possible if re-bx in future			Yes
Lung-MAP				M		HIN HEM/ONC WHITE FELLOW		Potentially Eligible	not enough tissue, no plan to bx			Yes
Lung-MAP				M		HIN HEM/ONC SILVER FELLOW		Potentially Eligible	local recurr s/p CRT, PS=3 5/18/22 cardiac issues CT stable			
Lung-MAP				M		HIN HEM/ONC PURPLE FELLOW		Potentially Eligible	T8 met bx + adeno ; PS=1	Provider Declined		Yes

To Results | Trial: Lung-MAP | Patient: [redacted] | info | DOB: [redacted] | GENDER: M | L4SSN: [redacted] | CANCER TYPE: Prostate, Nsclc | PDF

Eligibility Criteria

9%

Instructions

For each criterion requiring test results and dates, please record this information on the LUNGMAP Onstudy Form and submit via Medidata Rave®. Any potential eligibility issues should be addressed to the SWOG Statistics and Data Management Center in Seattle at LUNGMAPQuestion@crab.org prior to registration. NCI policy does not allow for waiver of any eligibility criterion (http://ctep.cancer.gov/protocolDevelopment/policies_deviations.htm). In calculating days of tests and measurements, the day a test or measurement is done is considered Day 0. Therefore, if a test is done on a Monday, the Monday 4 weeks later would be considered Day 28. This allows for efficient patient scheduling without exceeding the guidelines. If Day 7, 14, 21, 28 or 42 falls on a weekend or holiday, the limit may be extended to the next working day.

Q. 5.1a Comment

Step 0 Pre-Registration

Patients with adequate archival tissue or a qualifying commercial FoundationOne CDx report should be registered directly to Step 1, without registering to Step 0. Patients who will submit tumor tissue from a new biopsy (not archival tissue) must also submit whole blood for ctDNA testing collected within +/- 7 days of the biopsy, preferably the same day. These patients must be registered to Step 0 in OPEN to obtain a patient ID number for the whole blood submission.

Screening Status | Medical History | NPOP Reports | Oncology Note | Tumor Board Note | Pathology Report | Radiology Report | Labs | Medications

FoundationOneLiquidDx (Report ID = [redacted])

Report Summary

SubmittedDiagnosis	Lung adenocarcinoma
Disease_Ontology	Lung adenocarcinoma
Pathology_Diagnosis	AdenoCa, FNA of a L neck Lymph node, metastatic, C34.9, C77.9, 8140/3
SpecimenSite	Blood
SpecimenType	Tube Set
SpecimenCollectionDate	[redacted]
ReportDate	[redacted]

Gene Sequence

Gene	Alteration	Alteration Type
AKT2	amplification	CopyNumberAlteration
Blood Tumor Mutational Burden	13	Unknown
BRAF	G596R	SNP

To Results | Trial: Lung-MAP | Patient: [redacted] info | DOB: [redacted] | GENDER: M | L4SSN: [redacted] | CANCER TYPE: Prostate, Nsclc | PDF

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Search:

Date	Procedure Name
[redacted]	CT CHEST (THORAX) W/CONTRAST
	CT CHEST (THORAX) W/CONTRAST
	CT CHEST (THORAX) W/CONTRAST

CT CHEST (THORAX) W/CONTRAST, [redacted]

EXAM: CT CHEST, ABDOMEN, PELVIS WITH CONTRAST

DATE: [redacted]

COMPARISON: CT chest 1[redacted]

CLINICAL HISTORY: Stage IV adenocarcinoma

TECHNIQUE: Axial images of the chest, abdomen and pelvis with oral and IV contrast were obtained. Coronal and sagittal reformatted images were subsequently generated. CT Radiation dose: 923.95 DLP (mGy-cm).

FINDINGS:

CHEST:

Acknowledgement

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