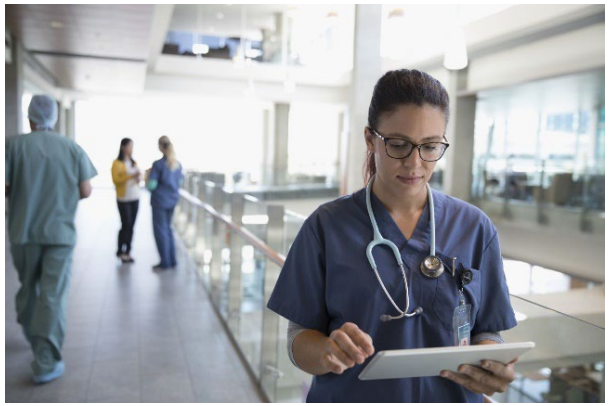
Oregon Clinical & Translational Research Institute



Electronic Health Record (EHR) Recruitment Tools:

Determining which tool is best for your study

Outline

- Introduction to EHR-based recruitment tools
- Understanding the different tools
- Study and recruitment considerations
- Determining the best tool based on study factors
- Additional resources

EHR-based Recruitment Tools

There are many electronic health record (EHR) based tools available for study recruitment purposes. At OHSU, tools are available within and outside of the computer application Epic, which supports patient care and research. Epic tools for research can be used for determining study and recruitment feasibility, identifying potential participants, and messaging with them.

Available tools outside of Epic:

- Research Data Services (RDS) – previously Research Data Warehouse (RDW)
- TriNetX

Available tools within Epic:

- Slicer Dicer
- Reporting Workbench (RWB)
- Best Practice Advisories (BPA)
- MyChart Messaging

Understanding the Different Recruitment Tools

Research Data Services (RDS)

- **About:** Collaborative data service that provides a range of data support including identifying potential participants, obtaining custom retrospective datasets, populating/hosting clinical data models, consulting on EHR data, and supporting complex data science projects
- **Use to:** Obtain a list of patients who meet eligibility criteria or a complete dataset to analyze or obtain a patient count for complex queries
- **Staff/Team Requirements:** Use of this tool requires working with OCTRI Informatics, no self-service option is available
- **Timeline:** This tool can be used one time, providing a single list of identified patients or data, or continuously, providing multiple lists and data, if a longer date range or continual data is needed
- **Costs:** Cost varies and is based on funding source of study and total project hours, email octri@ohsu.edu for a quote
- **Pros:** Ability to search for and identify specific/complex criteria and population subsets, which can save time in recruitment efforts. OCTRI analysts are EHR data experts who can advise on study population definitions
- **Cons:** RDS cost varies based on project hours, being higher for more complex projects, which can be difficult for studies with little to no recruitment budget. Additionally, data is not in real time, which may not work for some studies
- **IRB Requirement:** IRB approval is required to use this tool. Based on the specifics of the study, the HIPAA prep to research or HIPAA waiver of authorization must be IRB approved for your study
- For additional information, to get started with RDS, or to contact OCTRI Informatics, email octri@ohsu.edu

TriNetX

- **About:** A cohort building and discovery tool for study teams to explore and analyze OHSU patient data, as well as data from TriNetX member organizations
- **Use to:** Assess feasibility of research studies, obtain counts and lists of patients who meet eligibility criteria, or a complete dataset to analyze
- **Staff/Team Requirements:** Self-service tool for cohort counts, extracted datasets require working with the OCTRI Informatics Team
- **Timeline:** Can handle large timelines but data is delayed (not real-time)
- **Costs:** Cost varies and is based on activity and funding source of study. De-identified cohort counts are $0 and identifiable datasets range from $0 for standard local data sets to substantial fees from TriNetX for funded studies using network-wide datasets.
- **Pros:** Tool includes clinical data on 2 million OHSU patients, including 153M diagnoses, 136M procedures, 526M medications, and 293M lab results. Over 145 patients from member organizations
- **Cons:** Patients who have opted out of genetic research have been excluded.
- **Training Requirement:** A one-time, free training in Compass is required before access to TriNetX is granted
- **IRB Requirement:** IRB approval is required for row-level datasets. Based on the specifics of the study, the HIPAA prep to research or HIPAA waiver of authorization must be IRB approved for your study. De-identified cohort counts may be accessed without IRB approval
- For additional information, to get started with TriNetX, or to contact OCTRI Informatics, email octri@ohsu.edu

SlicerDicer

- **About:** Tool within Epic that allows users to perform simple queries on patient data. Investigators can a) discover patient cohort counts from Epic data for prepatory to research purposes and/or b) access PHI with proper IRB approval
- **Use to:** Assess feasibility of research studies and/or create patient data sets
- **Staff/Team Requirements:** SlicerDicer is a self-service recruitment tool
- **Costs:** No cost to use
- **Pros:** Determine the feasibility of your study and access cohort counts for grant applications at no cost
- **Cons:** Limited to high level data only, unable to query for complex criteria, large volume of data, or a longer date range
- **Training Requirement:** SlicerDicer requires access to Epic, access information available here. Help guides and training materials located on the Research Data page. An online, self-paced training course is available through Compass
- **IRB Requirement:** IRB approval is required to use this tool to access PHI or view cohort information for small patient groups (<11). Based on the specifics of the study, the HIPAA prep to research or HIPAA waiver of authorization must be IRB approved for your study
- For additional information, or to get started with SlicerDicer, email researchdata@ohsu.edu

Reporting Workbench (RWB)

- **About:** Tool within Epic that allows users to perform simple, real-time queries on patient data. The report results are actionable, allowing users to go directly into a patient's chart for further review or to manage tasks
- **Use to:** Access real-time, recent patient data
- **Staff/Team Requirements:** RWB is a self-service recruitment tool
- **Timeline:** Best for when you need to identify real-time data or want to identify potential participants with upcoming clinic visits (i.e., "schedule scanning")
- **Costs:** No cost to use
- **Pros:** Real-time identification of patients and no cost to use outside of study staff's time to utilize it
- **Cons:** Limited to high level data only, unable to query for complex criteria, large volume of data, or a longer date range
- **Training Requirement:** RWB requires access to Epic, access information available here. Help guides and training materials located on the Research Data page. An online, self-paced training course is available through Compass
- **IRB Requirement:** IRB approval is required to use this tool. Based on the specifics of the study, the HIPAA prep to research or HIPAA waiver of authorization must be IRB approved for your study
- For questions and additional information, email researchdata@ohsu.edu

Best Practice Advisories (BPA)

- **About:** Identify potential participants that meet your specific criteria through advisory alerts on patient encounters. Alerts will result in either an automatic 'In Basket' message notifying study staff of the potential participant (Silent BPA) or the 'Research Recruitment navigation' section is activated, providing a visual signal to the encounter provider that an alert exists (Passive BPA). Please note, this is for workflows that are time sensitive, not a good replacement for reporting options

- **Use to:** Identify potential participants in real time based on a new "encounter"

- **Staff/Team Requirements:** Use of this tool requires working with Epic Research Team, no self-service option is available

- **Timeline:** Best for when your protocol has narrow timelines, you need real-time identification, and immediate notification

- **Costs:** Cost varies and is based on total project hours. Average project range is ~$800-$1,500

- **Pros:** Real-time identification of patients that meet your specific search criteria

- **Cons:** For Passive BPA, the patient being informed of the study is based on the encounter provider both seeing the alert and telling the patient about it, which is not guaranteed to happen

- **Training Requirement:** An EpicCare for Research training is required. Trainings are offered virtually, registration is available through Compass. Additionally, an 'In Basket' message training will be needed

- **IRB Requirement:** IRB approval is required to use this tool. Specific templates will be provided as you work with the Epic Research Team on your project

- For additional information, to get started with BPAs, or to contact the Epic Research Team, email epicresearchteam@ohsu.edu

MyChart

- **About:** Recruitment invitation sent to a pre-determined group of people through their MyChart account
- **Use to:** Contact individuals identified through Cohort Discovery, RDW or RWB reports
- **Staff/Team Requirements:** Use of this tool requires working with Epic Research Team. Speak with the team prior to obtaining a dataset to ensure your study is a good fit for MyChart and your dataset is formatted correctly for use
- **Timeline:** Best for when you want to reach a large number of potential participants quickly
- **Costs:** Cost varies and is based on total project hours. Average project range is ~$600-1,000. Additionally, there is the potential cost associated with the dataset you are using for MyChart
- **Pros:** Provides potential participants study information within an OHSU related platform they are familiar with and maximizes study staff's time through focusing on those who have replied and expressed interest in the study
- **Cons:** Identified participants must have an active MyChart account to be contacted this way, so it is possible some in your dataset cannot be contacted using this tool
- **IRB Requirement:** IRB approval is required to use this tool. Specific templates will be provided as you work with the Epic Research Team on your project
- For additional information, to get started with MyChart, or to contact the Epic Research Team, email epicresearchteam@ohsu.edu

Study and Recruitment Considerations

When selecting the best tool for your study, there are study and recruitment factors to consider in that decision. Each tool is different and best for different study scenarios. Considerations include:

- Enrollment goal
  - Is your total goal a small or large number?

- Length of the recruitment phase
  - Does enrollment close within a couple of months, a year, etc.?

- The complexity of the study's eligibility criteria
  - Are you looking for a very targeted, specific population subset or a broad, all-encompassing one?

- The time sensitivity of identifying and contacting potential participants
  - Is the participant only eligible before or after certain events, tests, or medications?
  - Do participants need to be identified and contacted in real time to events or healthcare encounters?

- Funding source and recruitment budget for study
  - Is your study industry sponsored or investigator initiated?
  - What monetary amount do you have for recruitment efforts?

- What you plan to do with the information from Epic
  - Access cohort counts or identify potential participants?
  - Contact participants during a healthcare visit or send them information about your study?

- What level of participant data is needed
  - Do you need data to include detailed items like lab test results or will you review the medical chart for more details?

Determining the Best Tool Based on Study Factors*

Study Factors Impacting EHR Data & Recruitment																
	Count / Patient List / Full Dataset			S	Access / Support / Training			Query Criteria				Timing and Function				Contact
EHR-based Recruitment Tool	Cohort counts	Patient List	Full Dataset	Cost	Self-service	Training Required	Support Available	Broad criteria	Complex criteria	Query over a short timeframe	Query over a long timeframe and/or large amount of data	Real time notification of potential participant	Identify participants in real time	Contact potential participants in person during healthcare visit	Send secure message through healthcare system	
TriNetX	x	x	x	Depends[2]	x	x	Partial[5]	x	x	x	x					OCTRI
SlicerDicer	x	x	x		x	x[4]	Partial[5]	x	x[6]	x						Research Data Concierge
Reporting Workbench (RWB)		x	x		x	x[4]	Partial[5]	x	x[6]	x			x	x		Research Data Concierge
Research Data Services (RDS)	x[7]	x	x	x			Full	x	x	x	x					OCTRI
Best Practice Advisory (BPA)[1]				x			Full		x	NA		x	x			ITG Epic for Research
MyChart				Depends[3]			Full			NA					x	ITG Epic For Research

1. BPAs are primarily used for recruitment when identification of potential participants presenting in the medical system is needed. Discrete criteria are needed to set up BPAs. Consultation with the Epic for Research team is required to assess feasibility.
2. Costs associated with TriNetX occur if a custom dataset is required. Cohort counts, standard limited datasets and MRN lists only are available at no cost under the self-service model.
3. Costs associated with MyChart messages are incurred when batched messages are needed. If a study team with MyChart access wishes to send an IRB approved recruitment message manually, there are no costs for use.
4. Training is required for Epic access but not required for these tools. Reviewing documentation for these tools is highly recommended.
5. The OCTRI Informatics team is available to answer questions related to TriNetX, the Office of the CRIO is available for demonstrations and troubleshooting SlicerDicer and RWB.
6. Complex criteria could mean needing multiple variables displayed for a cohort of patients, or multiple variables used as criteria to find a cohort, or data over a long period of time. Multiple display/criteria variables or data over long periods of time may not be available in these tools.
7. Counts are typically run using TriNetX or SlicerDicer, but for complex queries RDS may be necessary.

*For help determining the best tool for your study factors, email octrirecruitment@ohsu.edu for a complimentary recruitment consultation

Additional Resources

OCTRI Informatics
https://www.ohsu.edu/octri/powering-innovation-and-translational-science-octri-informatics

OHSU Research Data Concierge
https://ohsuitg.sharepoint.com/sites/CT.Research-Data2/SitePages/Epic-Data.aspx

OHSU Epic for Research
https://ohsuitg.sharepoint.com/sites/OHSUEpic/SitePages/Epic-Research/Research-Home.aspx

For more information, additional resources, and to request a recruitment consultation, please visit the OCTRI Recruitment webpage or email us at octrirecruitment@ohsu.edu.

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This document was created in support of CTSA grant UL1TR002369.

Document Version: July 2026