



C3OD, An Abstraction and Recruitment Tool



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INTRODUCTION

Clinical trials remain the best avenue to establish the efficacy of newly proposed interventions. However, recruitment, retention, management, and execution of clinical trials have numerous associated challenges that can impact successful completion. From feasibility analysis, to enrollment targets, there are quantifiable barriers to trial recruitment that arise in part from the manual process of screening candidates. Examples include the need to manually review medical records including information from multiple locations, the need to consider complex recruitment criteria for a multiple trials, and overburdened care-providers. Additionally, clinicians expressed the strong need for the patients to be identified BEFORE their date-of-service so they and clinical trial staff can engage them during their appointment. Thus, it is critical to provide more automated solutions to pre-screening that can efficiently facilitate recruitment.

Goals Our goals include improving the efficiency of clinical trial development through delivery of improved feasibility analysis and improved management of clinical trials through automated pre-screening of candidates.

FUTURE DIRECTIONS

During the initial roll-out, we have identified some critical areas-of-opportunity for future developmental efforts. These include hardware and software improvements, data source management and growth, data transfer and automation, UI development, NLP and improved unstructured data searching capabilities.

KEY VALUE METRICS

- 3** Number of additional trials able to be screened per coordinator
- 263.33** Computational rate of abstraction (charts per second)
- 97.68 %** Reduction in chart screening burden
- 134.9** Hours of screening time saved over 9 extracts (at a very conservative 2 minutes per patient chart review)
- 0** Number of enrolled participants not included in C3OD extracts for C3OD sourced studies

METHODS

Out of the many different modalities that are being employed to address recruitment obstacles, we are attempting to design a technical solution to the prescreening process with both; rate (of recruitment), efficiency, and accuracy as drivers. We have designed a curated database called C3OD, with which we are able to fulfill requests for identifiable and actionable patient data underlying those numbers.

C3OD utilizes a multi-sourced, automated approach to data aggregation. These data are filtered, transformed, and indexed (where appropriate) during data extraction then loaded into a centralized repository on a specified schedule to be utilized as a single harmonized data-source. Data is then deidentified with unique keys for consumption in other use-cases.

In this use-case, we are addressing the arduous prescreening process by reducing the total number of potential study participants with which our coordinators must abstract data by delivering a curated (and drastically reduced list) of potential participants that meet study criteria. Additionally, this list incorporates the extra dimension of future-visit dates-of-service, and is being delivered to our coordinator team prior to when the patient is being seen by the physician. This process allows time for additional abstraction of outlier criteria. Moreover, we have automated the generation and delivery of said list on a recurrent basis and delivered via secure means. This automation has eliminated the administrative time burden of directly interfacing with the tool to run the study extracts.

RESULTS

Below is a table of our first 9 patient extracts. Patients identified by study inclusion/exclusion that have future physician visits vs. the number of total patient charts that would have needed to be abstracted without the use of C3OD.

Extract No.	Total Scheduled	Total Identified	Percent Identified vs total
1	469	16	3.41
2	480	12	2.50
3	424	11	2.59
4	376	8	2.12
5	556	9	1.62
6	451	8	1.77
7	482	11	2.28
8	503	13	2.58
9	402	8	1.99

Total number of Extracts	9
Total Scheduled Patients	4143
Total Identified Patients by inclusion-exclusion	96
Average Percent Identified vs Total scheduled	2.31
Number of enrolled patients	2
Estimated productivity cost savings	97.68 % per 1 FTE of total chart screening time for C3OD enrolled studies
Number of additional trials able to start recruiting a direct result of time savings	3

WHAT THE TEAM IS SAYING

“This is working and helping, a pretty great tool” – **Natalya B.**, Study Coordinator.

“C3OD has provided our research team with the opportunity to maximize potential participant screening; what used to take a coordinator hours of time to screen hundreds or charts, is now a streamlined process based on key eligibility criteria and screening only those who meet this threshold. Therefore, saving us time, maximizing coordinator efforts, and an overall more efficient process of matching patients to clinical trials.” - **Jennifer K.**, Associate Professor, Medicine - Clinical Oncology

“The use of C3OD has streamlined our prescreening process, allowing us to distribute resources to clinical locations where we have pre-identified potentially eligible patients. This high-throughput screening allows us to screen more efficiently and effectively.” – **Joaquina Baranda**, MD Early Phase Oncology