IFP

IMPROVING CLINICALTRIALS.GOV

Note: This piece was prepared for the Clinical Trials Abundance project, a partnership between the Institute for Progress (IFP) & Renaissance Philanthropy, and presented at a policy workshop on October 7th, 2024

By Mark Webb, PhD

7th October 2024

Summary

Patients and physicians looking for clinical trials use ClinicalTrials.gov, a searchable database of clinical trials. But this website is cumbersome to use, with poor data and unhelpful search terms. Especially in cancer, where the need for experimental treatments is greatest, and where there are a multiplicity of cancer types and subtypes, the search interface of ClinicalTrials.gov remains a major obstacle to connecting patients with the best trials. Some very minor improvements to its search functionality would significantly expand patient access to clinical trials, thereby accelerating recruitment, a major driver of trial costs, and reducing the overall cost of new drug development. The National Library of Medicine (NLM) at the National Institutes of Health (NIH) is responsible for this website. Minor updates on their end could dramatically increase access to clinical trials and accelerate trial enrollment.

Challenge and Opportunity

The most high-need patients in cancer treatment are those who have exhausted all available treatment options. Often the only option available is participation in a clinical trial. Most physicians and patients are located far from sites where an appropriate clinical trial is being conducted, so they rely on search to find the right trial. The problem is finding a trial that matches their disease type (and often subtype) that they are eligible to join. This means searching the ClinicalTrials.gov website.

The problem is that ClinicalTrials.gov isn't tailored for this kind of search. Cancer has a diversity of types and subtypes: a cancer's pathology, histology, specific mutations, and a patient's prior treatments all influence what trials they are eligible to join. This list of "inclusion and exclusion criteria" are currently captured on ClinicalTrials.gov, but search isn't designed to consider them.

The current search interface does a poor job of helping patients find studies they might be eligible for. Whether they do a hundred overly narrow searches, or a few overly broad searches, patients must still review each trial by hand to figure out which they might be eligible for.

This problem is further frustrated by how esoteric the medical language in each clinical trial entry is. Physicians looking for an appropriate treatment for their patients don't have time to sort through hundreds of non-specific search results, and patients often don't understand these search results until they go to their doctor. In other words, much of the data is already there, but it's impractical for all but the most dedicated and skilled patients.

Plan of Action

The NLM, which is responsible for the ClinicalTrials.gov website, should update the search function of ClinicalTrials.gov to include user-friendly filters. Further, they should allow clinical trial sponsors who are responsible for entering data into ClinicalTrials.gov to enter search terms for key inclusion and exclusion criteria (I/E criteria). They should display these key I/E criteria in search results, so patients and physicians can sort through long lists of results more quickly. Finally, they should encourage sponsors to add information that patients find useful in search results. Taken together, these small updates to the ClinicalTrials.gov website could save each patient hundreds of hours of search time.

A more useful clinicaltrials.gov website will have strong network effects, as more people turn to the website as a repository for information. Although promising 'network effects' is always speculative, we can have greater confidence in this case, because patients and physicians already use ClinicalTrials.gov for finding trials, despite the website not being built with this purpose in mind. Doing a better job of matching patients who want to enroll in trials, with sponsors who want to enroll patients, would greatly augment clinical research.

Will this approach help improve cancer treatment for patients who lack other options? There is a precedent in pediatric oncology for the benefits of more comprehensive trial enrollment, emphasized in oncology researcher Dr. Vinay Prasad's book *Ending Medical Reversal,*

> *For most of the 1990s, pediatricians developed a rich and comprehensive network so that nearly all children with cancer were enrolled in some form of clinical trial. Much of their success – large improvements in survival for their patients – is attributed to the push for clinical trials. In contrast, to date, less than 10 percent of adult cancer patients participate in clinical trials, and, arguably, adult care has lagged behind. Of course, we cannot really compare improvements in adult and pediatric cancer care – they are apples and oranges. That being said, the comparison is hypothesis-generating. Would medicine be better if a larger proportion of patients were enrolled in clinical trials?*

Improvements in search will expand access to relevant trials for patients, ensure patients are better matched to the trials they join, and accelerate recruitment timelines for pharmaceutical research. In addition, as patients are better able to find trials from anywhere in the country, academic institutions and pharmaceutical companies will be able to conduct trials for rare diseases that are currently impractical.

Recommendation One: Add search filters for inclusion criteria and tumor type

NLM should create filters for the kind of search terms that are important to patients and physicians looking to enroll in clinical trials. While it's technically possible to approximate filters by using Boolean operators in the current system, few users possess both the technical understanding to use these operators and the clinical knowledge to build a meaningful search. Minor changes in what can/can't be filtered would transform a search that currently takes expertise in multiple domains into a simple search every doctor or patient can perform. Filters should include disease type and subtype, genetic requirements, excluded comorbidities, required/excluded prior or concurrent therapies, and key I/E requirements. A major challenge will be defining the categories and subcategories to use as filters.

Recommendation Two: Display key inclusion and exclusion criteria in results

The results window should display key I/E criteria, allowing patients and physicians to quickly determine which trials they may or may not be eligible for. In the current system, the only way to see this information is to click on each trial, scroll halfway down the page to the I/E criteria, and read through the ~2 dozen I/E criteria to determine whether a patient is eligible. For patients searching for a clinical trial, none of the other information about the study is relevant if they don't qualify for the study. This information should be easily accessible in search results.

Recommendation Three: Encouraging sponsors to enter useful information

Some companies have attempted to solve the well-known search problem of ClinicalTrials.gov through artificial intelligence applications that scrape data from the government website, effectively trying to add the missing functionality to the clinicaltrials.gov website. The biggest problem with this approach is the old "garbage in, garbage out" adage.

Since the system doesn't work well for patients looking to join a clinical trial, sponsors of clinical trials are not incentivized to include useful information on the website, nor to keep it updated. Yet sponsors will currently spend more than $10,000 per patient to recruitment agencies if they can help find patients with rare genetic mutations or other difficult-to-find conditions. If sponsors perceive that refining their trials' entries on ClinicalTrials.gov would help recruitment, we expect improvements in the quality and timeliness of the data that sponsors provide. NLM should encourage sponsors to update their data in the new system as they roll out the new features outlined above.

Conclusion

Despite the broad usage of ClinicalTrials.gov by patients who are looking for clinical trials, search on the platform is difficult and poorly targeted. The result is patients spending lots of time searching, with few successful connections to clinical trials. A few minor improvements would save patients hundreds of hours of sorting through results; make clinical trials accessible to the many high-need patients who have run out of alternatives in oncology; and accelerate clinical development.

About the Author

Mark Webb is Senior Clinical Research Manager at OnQuality Pharmaceuticals Ltd. previously worked at PRA Health Sciences as a Senior Clinical Research Associate from November 2017 to August 2019, and has been in phase 1, 2, and 3 studies and also served as a Lead CRA, responsible for drafting and maintaining monitoring plans. Mark obtained his PHD in immunobiology from the University of Cincinnati College of Medicine.

Author
Mark Webb, PhD
sclmlw@gmail.com

About the Institute for Progress

The Institute for Progress (IFP) is a non-partisan think tank focused on innovation policy. IFP works to accelerate and shape the direction of scientific, technological, and industrial progress. Headquartered in Washington D.C., IFP works with policymakers across the political spectrum to make it easier to build the future in the United States.

IFP was established by co-founders Caleb Watney and Alec Stapp and is a 501(c)(3) tax-exempt nonprofit organization.

Our work is made possible through the generous support of foundations, including the Alfred P. Sloan Foundation, Open Philanthropy, and the Smith Richardson Foundation, and philanthropic donations from individuals like Patrick Collison and John Collison. IFP does not accept donations from corporations or foreign governments.

Editor
Santi Ruiz
santi@ifp.org

Institute for Progress
1140 3rd St NE
Suite 401
Washington, DC 20002

ifp.org
@IFP

Co-CEOs
Alec Stapp
Caleb Watney

contact@ifp.org