Clinical trials landed in the tech spotlight earlier this year when [Apple launched an iOS software framework](http://techcrunch.com/2015/03/09/apple-introduces-researchkit-turning-iphones-into-medical-diagnostic-devices/) to let users sign up for medical trials. The challenge generally for medical researchers remains signing the right people up to studies with very specific criteria for participants. On one level that’s a matching problem — which suggests technology can help (Apple certainly thinks so).

[TrialMatch](http://trialmatch.club/" \l "%21/" \t "_blank), a hack demoed onstage here today at the TechCrunch Disrupt SF Hackathon, is also targeting this problem. Co-founder Brian Clark has been working on the idea for around six months.

Overnight here at the hackathon he built an interface that pulls in the 200,000 clinical trials on [ClinicalTrials.gov](https://clinicaltrials.gov/" \t "_blank), cleans up the data to establish clear inclusive/exclusion criteria, and lets potential triallists create a profile on TrialMatch to be automatically matched to trials that match their personal criteria. The system then sends an email when a potential match is established.

The aim is to allow users to import their medical data into the system via an API (although Clark didn’t pull in any actual medical records during the hack because he hasn’t paid for HIPAA compliance at this pre-MVP stage).

“We scan your entire medical record and we’ll say do you match all the inclusionary criteria and do you not match all of the exclusion criteria… Or you say ‘I want to get it for my neck cancer’, we’ll run it for that specifically, and then we’ll send you any matches that you get that already exist. Or when a new clinical trial comes about we’ll automatically notify you of the new one,” he explains.

The germ of the idea he originally had was to create a database of medical records. But after talking to doctors that was honed to a more specific premise aiming to match patients to clinical trials. Clark’s co-founder also has a medical condition so has a personal interest in the space, after spending several months trying to get into a particular clinical trial only to be being rejected at the last step because he didn’t match a specific criteria.

“We wanted to create the world’s largest database of medical records and give it to researchers but we didn’t know what that would be useful for. So we went and talked to hundreds of doctors… and a number of those doctors said I would love to pick out my patients for my clinical trials from that database,” Clark tells TechCrunch. “There’s not a lot of really good technology in the space to actually match patients.”

Research firms will typically partner with a hospital to identify potential trial participants among existing patients. Or else they hire a contracted research organization to conduct a marketing recruitment campaign seeking participants. “It’s a lot of manual stuff,” he notes. “It’s not really that tech heavy.

While the majority of matching criteria can be gleaned from a scan of a user’s medical record — Clark estimates this at about 75 percent — other trial criteria may need additional data. Criteria that can’t be gleaned from a medical record could be something like the participant needs to be able to speak a particular language, for instance. Pulling additional data from elsewhere is something the team is going to look into in future, he says.

It is also specifically thinking about integrating with 23andme’s API as a way to further flesh out the data it can access on potential triallists.

“Maybe we’ll pull your 23andme data — based on certain clinical trials are now recruiting based on certain genomic factors people have, can we help recruit to those trials as well? 23andme has an API where they can add genomic data to our system,” he notes. “We would love — and this is tricky, we don’t know if this would work from a business standpoint yet — if we narrow it down to these 1,000 patients are like high targeted patients, can we just pay for their 23andme data? And would that result in more clinical matches for them?”

But matching patients to clinic trials is also about more than just identifying specific medical criteria. Researchers need to be confident a selected triallist is going to be able to participate in the way a particular trial demands — so that’s another more amorphous challenge that TrialMatch needs to be thinking about.

“Just matching the patient is only one part of the problem,” admits Clark. “A big part is can you actually understand what this clinical trial is going to do to you? How responsible for it are you? What are you going to take? How long is it going to last for? What are the side-effects? There’s a long list of that and patients can’t understand that all the time. So that’s part of the recruitment process. It’s not just getting the match. It’s making sure they understand, when we say this is matched to you, you know what this is going to do so you actually are compelled to sign up for it. So that’s very important as well.”

It certainly is a lot to think about, but Clark points to clinical trials being a $260 billion a year industry — with $20 billion spent “just on recruiting patients” — so the size of the opportunity is clear. Still, the various layers and players involved here likely explain why recruitment for clinical trials remains such an expensive and manual process. It’s not so much about building fancy tech, as accessing sensitive data.

“The problems kind of abound with this,” he admits. “Which is why it’s such a big industry and why there’s not a real tech player winning it yet and we would love to be that one.”

Convincing people to sign up to share sensitive medical data with a third-party matching platform is one obvious challenge. Potential legal issues around per-patient recruitment could be another. “We don’t want to go to jail to do this!” he adds, with a laugh.

How might TrialMatch get patients to sign up? “That’s what we’re figuring out at the moment,” he says, adding that they’re talking with a cancer treatment and research institute about doing an unpaid pilot to test how effectively the system works.

Advertising when people Google particular symptoms to flag up potentially relevant clinical trials could be one route to reaching relevant people, he suggests.

“Probably the biggest question is how do we figure out the business side. And how do we build a good brand for patients,” he adds. “We have to be very trusted by the patient to handle this safely for them.”

Regulations around storing health data, such as HIPAA compliance, are less of a health startup roadblock at this point — with Clark noting that third party services, such as Atlas Health, sell HIPAA Compliant cloud hosting. “You throw money at that problem,” he adds.