

Clinical Researcher

The Authority in Ethical, Responsible Clinical Research

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Tech Careers in Clinical Research

Alexis Gabard



The spotlight on the pharmaceutical industry over the past year has garnered attention from a growing number of technology professionals interested in contributing their talents to vaccine and drug development. According to [Novartis research](#) compiled in June 2020, 72% of technology professionals were more likely to consider working in pharma as compared to six months prior. About the same number of professionals (73%) said their opinions of pharma have improved due to its response to the COVID-19 pandemic. Even more (85%) said the application of data science has been a crucial factor in pharma's rapid response.

Technology professionals with experience in data science, software development, security, information management, and artificial intelligence play an important role in the next generation

of drug, biologics, and device development. In clinical research, they develop, test, and manage the tools that allow scientists, research sites, and sponsors to collaborate effectively.

As the amount of data swells, the industry needs these tech experts now more than ever. International Data Corporation (IDC) predicts that by 2025, the global [DataSphere](#) will grow to [175 zettabytes](#)—the equivalent of 175 trillion gigabytes. IDC estimates [healthcare and life sciences data](#) comprise about 7% of the enterprise DataSphere.

Clinical Research Tech Opportunities

This is a defining time for pharma and for clinical research. COVID-19 set an example for how digital technology can improve the clinical research experience for researchers, patients, and physicians. Because of COVID-19, decentralized trials were widely adopted much faster than expected, and by all indications, they are here to stay.

The industry needs people who know how to manage data generated by decentralized trials. That includes data from telemedicine platforms, home health nurses, patients' mobile devices, and physicians. The researchers who design protocols for decentralized trials may know what they need from a scientific perspective, but they rely on technical professionals to build the systems that support those needs.

For example, a protocol may allow sites to conduct patient visits over the phone, in person at patients' homes, by videoconference, and in person at the clinic. To make that happen requires someone with the technical expertise and critical thinking skills to consider those components collectively and individually, and to implement one or more systems in support of any combination of those modalities.

With increased use of electronic source (eSource), whether it be electronic patient-reported outcomes (ePRO), electronic clinical outcome assessment (eCOA), or electronic direct data capture (DDC), clinical research sites also need technology professionals to assist with implementation and management. As the virtual clinical trial model is adapted more widely, sponsors, contract research organizations, and sites need technology professionals who can test,

manage, and troubleshoot telehealth platforms, eSource platforms, electronic data capture (EDC) systems, medication management software, and remote patient monitoring.

Many drug and medical device developers and their vendors have a growing need for clinical database design, data operations, development, infrastructure (DevOps), and programming professionals. To succeed in a tech or tech translation role at these firms requires a careful bridging of clinical research knowledge and technical expertise through cross-functional collaboration.

Why is clinical knowledge important? When we subject a study-specific build to user acceptance testing (UAT), for example, we run through what a patient, caregiver, investigator, and/or site coordinator will see and use when participating in a clinical trial. The clinical database designer needs to translate a protocol's schedule of activities, including unexpected activities and visits, into technical requirements. Working with technical departments, the designer ensures that the solution supports the conduct of the clinical trial. Dual clinical-technical knowledge would be helpful in most clinical research technology positions, but it is not required.

[Russell Reynolds Associates](#) interviewed digital and technology leaders at 10 of the largest global pharma companies. It found only 25% of chief digital officers (CDOs) have a background exclusively in life sciences. The report also cited a trend toward bringing in tech leaders from outside the life sciences industry to fill newly created CDO roles. In addition, four out of 10 pharma companies have elevated digital and technology leadership to an N-1 level role.

As with upper management, recent graduates with either data science, information technology, or clinical research education have their pick of career opportunities. For example, a [Ranstad report](#) found demand for clinical research associates and trial managers grew by 46% between mid-2019 and mid-2020.

Learn as You Grow

For nonexecutive tech professionals, healthcare, medical, or science experience will give you a competitive advantage, but you don't need to run out and earn a medical degree to get a job in the field. Passion, a willingness to learn, and a strong work ethic will take you far.

Take initiative to learn the skills you're missing. Ideally, you can do this on the job. One of our employees, Caitlin, joined our quality organization straight from a clinical research program. Her hard skills were solid, but she needed to find her voice when communicating with the team. She worked on her communication skills, and as a result, she was promoted in the quality organization and then moved into a customer-facing role as a lead clinical database designer.

On the technical side, our eSource developers learn how patients and clinicians use the technology and how that technology impacts patients' lives. That knowledge drives their "why." They can see how they're part of something bigger than the code they develop or the database they create.

Be Prepared for Ebbs and Flows

While many companies offer generous benefits packages, the work-life balance within them ebbs and flows. Clinical trials are cyclical and are driven by funding and interactions with regulatory agencies. During spikes in activity, the delivery team is prepared to work harder and longer; it is important to recognize the importance of self-care during these times and employ individualized practices that prevent burnout.

Advice for Tech Professionals

For those interested in moving into the technology side of clinical trials, consider these tips to land an interview or a job offer:

- **Apply for an internship.** Even mid-career professionals can benefit from internships. If you can manage it financially, a short-term internship will help you gain valuable on-the-job experience. It may also turn into a full-time position.
- **Make new connections.** Reach out to technical or clinical research professionals to ask questions about the industry or their job. Leverage LinkedIn connections, professional organizations, and personal connections. When a position has 1,000 applicants, your connections will help you move toward the front of the line.
- **Follow your passion.** Many people get into healthcare, medicine, and life sciences because they want to make a positive impact on the world. Where does your passion lie,

and how can you combine it with your existing skills? That passion will help escalate your career much faster than chasing a salary.

- **Show your value.** During interviews, focus less on what you've learned and more on how you can bring value to the organization. Show that organization you have the initiative and the skill set they're looking for; be ready with your own "elevator pitch."

Technology professionals who want to take part in the digital transformation of clinical research have numerous opportunities available. Follow your interests and seek out opportunities to bring value, and you'll soon find yourself in a challenging, rewarding career.



Alexis Gabard is Director of Study Operations for Clinical Ink, where she delivers high-quality, customized projects to internal and external stakeholders, including executing and managing development of enabling technology from concept to close. She oversees study design requirements and specifications, study build and programming, study configuration and testing, UAT, study deployment and updates, and process improvements.