

## Know Your Industry: Developers in Health Care

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The good news for IT professionals — and specifically, applications developers — considering careers with hospitals, pharmaceutical companies and other health care institutions is that the industry is very robust right now, and it will get better as the population of the United States and other developed countries continues to age. It's a business awash in money, and several of the companies within it desperately need top technology talent to come in and create, maintain or enhance (or sometimes all three) their IT environment.

“I think the climate is very good,” said **Sunil Gupta**, associate director of statistical programming at Quintiles, a pharmaceutical-testing firm. “It's an exciting field to be in, whether you're new or looking to transition from another industry. We're in a strong growth period. The need to develop high-quality programming very quickly is still high. More and more companies are having their own infrastructure teams that provide more dedicated IT support. That is indicative of the demand that's there, the security that has to be in place and the expertise needed to support all of the activities going on. There's much more focus and support from senior management to make sure that all of the hardware and software are in place to help everyone work as efficiently as possible.”

One of the main challenges application developers face in their roles within health care companies is figuring out what solutions will work best for their organizations and then educating their superiors — the folks who approve and fund all IT initiatives — on why these are necessary. “The decision makers need to be more aware of the variety of tools and programming languages out there,” Gupta said. “I think there's a lot more focus on integration. The challenge is being aware of where the industry is going and what people are doing, and making sure that you're not being left behind. It does take time to understand what's being requested and to see how it can be integrated within your current infrastructure.”

Another issue is ensuring efficiency in using virtual resources. To do this, Gupta recommended pulling information together into a single unit. “There's much more of a focus on using metadata, meaning you have a centralized location of attributes for data sets and variables and make sure that's applied consistently,” he explained. “By having it in one location, you save time and resources by not duplicating that.”

Technical skills for IT pros in health care not drastically different from other areas, although Gupta mentioned the software development lifecycle having a special emphasis in the industry. One key non-technical area of expertise techies should have is in regulations such as HIPAA. “It's a very tightly regulated industry,” Gupta said, and added that the most important one in pharmaceuticals

was the Food and Drug Administration's (FDA) 21 CFR Part 11 statute. (Readers can find out more about 21 CFR Part 11 at [http://www.fda.gov/ora/compliance\\_ref/part11](http://www.fda.gov/ora/compliance_ref/part11).)

Other key non-technical skills include communication and teamwork, he said. "People don't work on islands. Previously, we were talking about teams of five or less. Now we're talking teams of 20 or 25. The concept of team has really expanded and that just indicates the magnitude of the work and projects that are in the industry."

To learn more about the ins and outs of health care, IT pros should seek out an experienced, knowledgeable mentor in their organization. "Hopefully, mentors will be assigned. In this industry, you have the core people who have been doing this for many years and are very experienced. Because the demand is so high, we're constantly looking for new talent. They might know how to program any language, but they're not that familiar with clinical trials or other aspects of the industry. Hopefully, they'll be assigned a mentor so that they can be watched closely. They'll learn at a much better pace than they would on their own," Gupta said.

Even if they do have a mentor, though, it also helps if they take the initiative to learn those concepts on their own. Ideally, they'll start prior to looking for work in the industry, Gupta said. "Learn as much as you can about it. Read as much information as possible. Attend user groups, take classes. If you have a contact in the industry, ask them questions. See what types of applications they're using. Learn about the features and expectations of the users so you can relate to them. As applications developers, your objective should be to design tools so that non-technical and technical professionals can take advantage of them to accomplish tasks. Have a good understanding of the business's needs and the requirements of the industry, and see how you can apply your talents and skills to meet that."