

## **Demystify "Ten years of pharma programming experience required"**

### **- What hiring managers actually look for**

Peng Yang, Clindata Insight Inc, Moraga, CA

#### **ABSTRACT**

Pharmaceutical SAS programmer job descriptions often times specify a certain number years of experience as a requirement. But what exactly does it mean to have 5 or 10 years of experience? Does one person's 10-years count the same as another person's 10-years? In this paper, we will discuss the relationship between industry experience length and some key qualifications for a successful pharma SAS programmer. Some of the qualifications are not quantifiable and elusive to explain, thus the number of years is used as one of the simplified criteria in job posting. Discussion around the qualifications can help recruiters conduct more effective screening and it can also enable candidates to write more specific and informative resumes for their job search.

#### **INTRODUCTION**

It has been very common to see job descriptions to list a minimum years of experience as a requirement in pharmaceutical programming recruiting practice. The number of years of experience serves as a guideline for a recruiter to filter the candidates to get to those who may be a good fit for the job. Is this simplified, binary response of meeting certain years of experience a good "surrogate endpoint" for other non-quantifiable attributes that hiring managers are looking for? This paper takes a deep dive and discusses recruiting issues unique to pharmaceutical programming.

#### **CERTAIN QUALIFICATION TAKES LONGER TIME TO DEVELOP**

I often ask myself why it takes a much shorter time to learn programming in other industries than in the pharmaceutical industry? What makes our job so unique? What makes this bar so high for entry-level programmers? After working in this industry for more than a decade, I found some answers through working in different roles, from a statistical programmer, a lead programmer to a programming functional head.

One main reason is that the drug development process has a very long life cycle. From phase I to approval, it can take 6 to 12 years. If the clinical studies could all be done in weeks, not years, our job requirement would be rewritten. To fully understand the drug development and approval process, a programmer needs to perform work for different phases of the studies with different objectives and it can easily take multiple years. Below are two types of skills that take a longer time to develop and I am sure that there are many others.

CRF review does not seem to be a very critical task to a programmer, but it can have a big impact. Doing a good job at the CRF review can save a tremendous amount of time and trouble for later analysis. Having supported studies from the very beginning to the end, an experienced lead programmer can provide insights to new study CRF design review, bringing up potential issues before seeing the data. A less experienced programmer may not know what to look for as there are no data to program. Estimating how long or how much resource is needed for a certain type of deliverable or supporting a certain regulatory task is also heavily based on prior experience. A very seasoned lead programmer has been through similar situations many times and he/she is more likely to come up with a more accurate estimate and know what risks need to be mitigated.

Another reason has to do with the confidential nature of the job. Clinical study data, analysis, along with work processes are considered company confidential information. Companies do publish certain results, but it is still very difficult to learn the details from the outside. Hiring managers tend to favor those who have first-hand working knowledge from reputable pharma and CRO companies.

#### **LESS TRAINING AND SUPERVISION**

Often times when a manager finally gets a contractor requisition approved, a project deadline is already looming and there is no time left for any training other than a basic orientation of where to find study documents. In this situation, managers need someone who can jump start within a couple of weeks, if not days. The candidate's skill set needs to exactly match what is needed by the project, and programmers with longer working experience are more likely to have a skill set match. The tight timeline practically eliminates the candidates who need training to be productive, even though some of them may have great potential.

After the economic downturn of 2008, more and more pharma companies are moving from hiring full time employees to hiring contractors or using CRO vendors. This paradigm shift has a profound consequence on how much effort can be spent on training. Even though lack of experience can be offset to some extent by training, the opportunity for training has become more limited.

When hiring managers ask for someone with longer experience, it is implied that they want someone who can function with higher autonomy and less supervision. Under a tight timeline, the team may not have bandwidth to take a less experienced resource that requires a lot of supervision.

## **RELATIONSHIP BETWEEN EXPERIENCE AND PRODUCTIVITY/QUALITY**

There is no doubt that every hiring manager wants to hire someone who is productive. Does longer experience equate to higher productivity and quality? Most of us will answer this question with an answer of "maybe". Intuitively, if one repeats doing a task multiple times, he/she should know how to get it done faster and better. In reality, it can also depend on an individual's drive for higher efficiency and quality. This type of information needs to be thoroughly probed at the technical and behavioral interviews and reference checks. In addition to evaluating a candidate's technical expertise, it is very important for hiring managers to assess whether the candidate's learning, problem-solving and communication style will be a good fit with the current team setting, including non-programming functions.

## **PAST PERFORMANCE**

The number of years can be easily counted, but the past performance is harder to assess as no one attaches his/her performance evaluations on the resume. Some positive indicators hiring managers look for may include being given increasing level of responsibility, project accomplishment, receiving performance awards and receiving external recognition. Another important way of vetting the performance is through people that have directly worked with the candidate in the past and who have observed the candidates in action, under stress. Those who have differentiated themselves to be highly effective professionals with great work ethics and commitment tend to stay as good performers in a new position.

## **THE PERSON WITH 1-YEAR EXPERIENCE REPEATED 10 TIMES**

It is not common, but it is possible that certain programmers can keep their skills set and productivity in stagnant stage for years. Even though on the resume, they have many years of experience, there is not much substance behind the number. This can be a result of both extrinsic and intrinsic factors.

**Extrinsic factors:** In certain companies, getting the job done or even well done does not require a constant skills upgrade. The company hardware, software and process may stay the same for years and the company may lack a culture of adopting new technologies and new standards. In this environment, an individual can be viewed as a reliable performer without noticing that the outside world has moved on and the skill gap is already very wide. They only find out this reality with surprise when it is time to look for a new job.

**Intrinsic factors:** Not every programmer is motivated to learn new things or take on new challenges. Self-improving requires a higher level of discipline to set aside time to read, research and practice. Ultimately it is each individual's personal choice to go with "comfort zone" or "growth zone".

During my candidate screening process, I often ask about candidate's knowledge on latest SAS, CDISC and FDA guidelines. When candidates told me that their company was using a much older version of SAS, lower version of CDISC or no CDISC at all, I then asked them about whether they have spent any personal effort to learn any of those on their own. Sometimes the answer is a very firm "no" because they claimed there was no need. In this case, their experience needs to be discounted because a big portion of it may be just repeats in the old system.

## **THE HIGH ACHIEVER OUTLIER**

So if we look for the right skill match and use years of experience as a filter, we should get to the right candidate and everything is fine, right? Watch out, you may miss a category - the rare high achiever outlier. They are programmers who demonstrate excellence at an early stage of their career and accomplish goals much faster than the average crowd. Their success can also be attributed to both extrinsic and intrinsic factors.

**Extrinsic factor:** Some places are faster paced and have more active clinical trials and submission work. If the individual happens to be in the middle of lots of actions and receives good training and mentoring, he/she can essentially live the "dog years". Their one-year of experience can add enough value as three-years of experience by others.

**Intrinsic factors:** Some of the most successful programmers possess superb cognitive skills and an insatiable desire to learn and improve. They also tend to relentlessly drive their own career development and take pride in delivering value to the company.

Because this category of programmers does exist and they can be the super stars, it is in a hiring managers best interest not to exclude them as a result of overly rigid selection criteria and compensation structure. If these candidates are hired, they can provide exceptional value to the organization.

## **THOSE WITH NO INDUSTRY EXPERIENCE**

We have discussed the average, the low and the high achievers. What about the people with no industry experience? How can they be evaluated? We have this invisible door, which seems to prevent some bright young talents to come in. They may end up going into other industries, which are friendlier to entry-level programmers. Is it possible to give them a break? What is the future of our industry if everyone says no? If a candidate has a good understanding of the data that he/she works with and possesses good analytical skills, there is a good chance that he/she can gain pharma domain knowledge over time and eventually become a productive programmer for clinical studies.

## **CONCLUSION**

There are benefits and downside of using number of years to evaluate candidates. Certain qualifications in pharmaceutical programming need a longer time to obtain due to the nature of this industry; thus there is no true substitution for experience. On the other hand, experience does not guarantee quality and productivity. I hope this paper can provoke some discussion on what makes a candidate competitive and desirable in the job market and what makes a successful pharmaceutical programmer.

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## **CONTACT INFORMATION**

Your comments and questions are valued and encouraged. Contact the author at:

Peng Yang  
Clindata Insight Inc  
P. O. BOX 6716  
Moraga, CA 94570  
Work Phone: 650-255-8747  
E-mail: [pyang@clindatainsight.com](mailto:pyang@clindatainsight.com)  
Web: <http://www.clindatainsight.com>  
Twitter: @clindata

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