

Life as a Statistician in the Pharmaceutical Industry

I'm currently working for a pharmaceutical company as a statistician, after having completed a MSc in statistics a year ago.



There are about 60 people in the department I work in, of whom around 20 are statisticians. People in the department are grouped by project team, so I sit near the other statisticians and programmers in my team – it works well this way, as it's easy to ask the programmers I work with a question (or vice versa) without having to walk a long way to do so. The whole building is open plan, so it's easy to interact with others – not just in my department but with other functions as well. The clinical scientists on my project often pop over and ask me a question, and it's easy for me to go to their desks and ask a question or discuss an issue with them.

The statistics courses I attended at university have proved very useful, for the most part, but there's much more to the job than just needing a technical knowledge of statistics. I need to be able to explain statistical concepts to the non-statisticians I work with, and in return I need to develop an understanding of my colleagues areas of knowledge, from a general overview of pharmacology to a more detailed knowledge of the disease areas I work in. I also need knowledge and understanding of the regulatory bodies, to whom we submit licensing applications for the new drugs that we develop.

The work I do is interesting and varied – no two days are ever the same! A statistician's main responsibilities include ensuring the trials are designed appropriately, making sure appropriate data is collected, ensuring integrity of the data and conducting appropriate analyses of the data.

Designing trials involves discussing the requirements with other functions, such as the scientists on the project who have in depth medical knowledge of the disease area, the operations department who ensure the design is feasible to run, and the regulatory department, who ensure that the trial will satisfy the requirements of the industries regulatory bodies. Some of the things to be considered when designing trials include: what is the aim of the trial? To show that your new drug works better than one already on the market, or to show that your drug works just as well as one already on the market but is safer? We need to decide what data to capture, for example, if the drug is to help ease pain, then how would we measure how much pain a patient has? How often are these measurements taken? We also need to decide what sort of design is appropriate – if there are several drugs being compared, does each patient take one drug only? Or does a patient get treated with one drug, then after a certain period treated with a different drug? Is it possible to stop giving patients ineffective or unsafe doses before the trial finishes, and just carry on the study with the effective doses? Is it possible to stop the trial early if the drug being studied performs better than expected? All of these are possibilities and the statistician needs to consider which method is appropriate to meet the objectives of the trial.

The statistician is also responsible for working out how many patients are required in the study, either by using an off the shelf package or, in more complicated scenarios, by simulating data yourself. Most statisticians in the industry have, or will be expected to develop, some knowledge of programming too to produce some analyses, graphs or reports using the statistical software that is used in the pharmaceutical industry.

Many pharmaceutical companies have offices in several different countries, and many study teams work with colleagues who are based at more than one site. This brings opportunities for international travel, to meet face to face. There are also opportunities to attend international conferences, and to meet with the medical personnel involved in the day to day running of the trials. I've also travelled to several different areas of the UK for training courses, to learn about new statistical techniques that are relevant to the area I'm working in, on top of attending courses that are held at my company.

The social life at my company is good – as well as big events like the Christmas party that the whole company attends, events such as quiz nights and ten pin bowling trips are organised regularly. At least once a month or so, a night out will be organised by someone in the department to celebrate someone's birthday or other special occasion, which are always well attended too. There is also an onsite gym and a range of sports teams at the company, which welcome people of all abilities.

If you're looking for a stimulating job, with lots of interaction with other disciplines and opportunities for travel, then working as a statistician in the pharmaceutical industry is one that you should consider!



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