Involvement of Programmers in M&S Projects in 2006

In 2006, M&S Prog was involved in nearly 40% of the projects, with a ratio of 1 programmer for 6 modelers. There was a higher focus on late phase projects due to the complexity on data generation and need for regulatory rigor.

Programmers skills

A good programmer, within M&S, must have strong technical SAS® programming skills and experience in data handling. S/he must be open to changes, innovative and creative. S/he must be able to convert (sometimes vague and changing) modeling requests into a dataset specification. Communication between the modeler and the programmer must be good, the programmer must understand the modeler’s needs, the modeler must understand possible data issues and discuss with the programmer actions to be taken.

Data extraction and manipulation are the key components. All programmers have at least a Master-level statistics background, which allows them to conduct basic statistical analysis. Others have in addition an IT or scientific background, which allows them to do computational and modeling platform development work.

What are the main differences between a dedicated M&S Prog group vs. a Statistics department programming group?

- Dedicated M&S Prog group
  - Work at the study level – within a program
  - Cope with ad-hoc dataset specifications, update the input dataset based on modeling results

- Statistics department programming group
  - Work at a more prescriptive level
  - Generally do not update the input dataset

A strong similarity is that both groups are transparent about what they are doing and follow good clinical practices.

Prospects

Due to the diversity of talent in the group, we are considering to expand the role of the programmers to do more statistical analysis and commence PopPK analysis. The plan is to develop talented programmers into modelers, thereby providing a career ladder.

Conclusion

The authors believe that a dedicated programming group can significantly improve the efficiency of a modeling and simulation organization within a pharmaceutical company.

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References