

Management and performance of research groups

Good research is not only a matter of finding talented researchers. The environment in which they work is also important. Ensuring that researchers are properly embedded in the organisation is the job of management, at both research group and institution level. Precisely how can research group leaders organise their groups, and lead them to perform better? To date, only fragmented, incomplete studies had addressed this issue. The Rathenau Institute's Science System Assessment department has therefore performed a study in the field of medical research to fill the gap. The study builds on others examining how research group leaders organise and lead their groups, and the effects of these efforts on the performance of their group. The results provide a practical guide for research group leaders, and can be used in study programmes and management training. The study also provides administrators and policymakers working at research institutions with information that can be used as a basis for developing research policy, and creating conditions that enable research groups to produce high performance.

Research questions

The overall study comprised four individual studies addressing the following questions:

- What information is available in the research literature about factors affecting research performance? What gaps exist in this information?
- What changes have occurred in recent years in the management and organisation of academic medical research groups, and how have they affected their performance?
- What differences exist between the organisation and management of top academic research groups, and of other good performing medical research groups?
- What output do research groups produce for society, and is there a link between the academic and societal performance of medical research groups?

From the literature we revealed several factors that affect the performance of research groups. Some of these factors exist at group and group member level. Contextual factors also play a role.

Results

The size of research groups increases and they often have a second leader

In 2007, medical research groups were larger in size on average than they were in 2002. This growth can be ascribed mainly to the increase in the number of PhD students, with an extra two to three on average in each group. The optimum size for a group is between 10 and 20 FTE. Once the group grows beyond around 15 FTE (research and support staff), most groups tend to appoint a 'co-leader'. With two leaders, responsibilities can be shared, producing a manageable span of control of around 10 FTE. We found, for example, that co-leaders are more closely involved with the laboratory research. They also enhance the supervisory capacity, making the group better able to cope with the extra PhD students. After all, two leaders have more time for supervision than one. In addition, fairly small research groups do have the advantage that they offer plenty of opportunities for good researchers to move on to become independent research leaders themselves. This is vital to the dynamism of the science system.

Leaders of excellent research groups remain closely involved in the research

Of the 188 medical research groups studied, 22 perform better than the rest. The leaders of these 'excellent research groups' are not purely managers. They are more likely to still spend time in the laboratory than the leaders of the other research groups. They also spend more time on other research activities, such as writing proposals and papers, and giving presentations. Their strong orientation towards research is also reflected in a stronger feeling of active involvement in the research. Excellent research group leaders are therefore more likely to conduct their own research, and they are more likely to publish papers in international journals as first author. They also vary their leadership activities more, dividing their time more evenly between their various tasks, basing their choice of new research subjects on broader strategic considerations, and attracting funding from a wider range of sources. Though it is important that research leaders develop management and leadership skills, this should not be at the expense of their commitment to research.

Good research performance does not preclude societal-useful output

Interestingly, there is no link between academic performance and societal performance. A focus on achieving a good performance in terms of research does not preclude socially-useful output, but nor do the two automatically reinforce each other. Where the body funding the research has a clear policy of encouraging socially-useful output, and of assessing performance on this basis, this tends to result in a greater yield for society. The social benefits of Dutch health research are a growing focus of attention, and both programming and results are considered important in this context. Our study showed a wide range of socially-useful output from different research groups, including presentations for the general public, media contributions and courses for health care professionals and policymakers. Methods for measuring this output – in both quantitative and qualitative terms – are still in their infancy, but they are gaining in importance. Procedures and criteria for measuring the application and implementation of knowledge are currently being developed.

More information

If you would like more information about this study, please contact the authors, Inge van der Weijden (email: i.vanderweijden@rathenau.nl) and/or Maakie Verbree (m.verbree@rathenau.nl). Scientific papers and working papers on the various individual studies are available on request.

In 2010 the results of this study will be presented to several research organisations and policymaking bodies. The study of the management and performance of research groups is also to be continued. In spring 2010, research group leaders working in health research will be sent a third questionnaire. We will also be launching an in-depth study of academic leadership, based on interviews with research leaders and researchers.