The medical research situation in Sweden

Preface

In cooperation with the six Swedish medical faculties, the Scientific Council for Medicine at the Swedish Research Council (SRC) appointed an inquiry group in the autumn of 2002 to study the medical research situation in Sweden. The group’s main task was to analyse the consequences of the changes in resource allocation to this research area during the last 10 years. The inquiry group consisted of Professors Emeriti Lennart Enerbäck, Gothenburg University, Jan Lindsten, the Karolinska Institutet, and Thomas Olivecrona, Umeå University. The faculty deans who took part in the cooperation were Jan Carlstedt-Duke, the Karolinska Institutet, Staffan Edén, Gothenburg University, Torbjörn Egelrud, Umeå University, Jan Nilsson, Lund University, Bengt Wranne, Linköping University, and Kjell Öberg, Uppsala University.

The inquiry group’s report describes the developments that have taken place as regards research funding at the various faculties, the number of researchers in various types of posts, postgraduate studies, scientific production and the effects of structural reforms carried out during the 1990s. One interesting feature of the report is a number of case studies in which researchers express their views about the changes in their working conditions and resource situation during the last 10 years. The deans of the medical science faculties also describe their experience and offer suggestions about how to solve the problems that have arisen.

The group’s main conclusion is that Swedish medical research must receive substantially more government resources if it is to maintain and improve its international position. These resources should primarily be allocated by the SRC’s Scientific Council for Medicine in the form of support for researcher-initiated projects, although the grants to the medical faculties should also be increased.

Hopefully, the report will shed light on the medical research situation in Sweden and will be used as input for discussions in the researcher community and the relevant faculties about ways and means of improving the
organization, governance and funding of both the research and postgraduate study systems.

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Summary

The inquiry group’s functions and methods

- The inquiry group set itself the task of finding out what changes have taken place as regards the funding of Swedish medical research during the period 1993/94-2001 and analysing how these changes have affected this research.
- The group found it difficult to obtain reliable information. The public statistics on research and the information made available by the faculties and universities were deficient in some respects. Nevertheless, the trend is unmistakable, and the group’s conclusions are the same irrespective of the sources used.

Other countries are spending more on research – Sweden is cutting back

- Developments in medical research have been very rapid in the last few years. Many Western countries, led by the USA, have substantially increased their spending on medical research.
- Sweden used to be among the leading countries in the field of medical research, but this position is now in jeopardy. Farsighted measures taken by Prime Minister Tage Erlander and other politicians shortly after World War II laid the foundation for the rapid development of Swedish medical research. This was an excellent thing for the country. As a result, Sweden achieved a leading position in clinical medicine and a highly respected position in basic medical research, not to mention the fact that a number of very profitable Swedish commercial enterprises were established.
- Well-developed medical research is crucial to the development of highest-quality healthcare and optimal resource utilization in Sweden. Research is also crucial to the maintenance and development of national pharmaceutical and biotechnological industries in the country. According to Statistics Sweden, the country’s net revenue from exports of medical products alone was SEK 27.2 billion in 2002.
- Government grants for research performed by the medical faculties (‘faculty grants’) in Sweden dropped by 8% in
real terms between 1993/94 and 2001. Taking into account several unfunded reforms and cost increases during the period, this means that the funds available out of faculty research grants have decreased by about 20%.

**Government grants are no longer sufficient to fund international competitive research**

- The number of staff employed by the faculties increased during the period. There was also a shift towards higher paid staff, in particular professors and senior lecturers (associate professors). The number of postgraduate students has increased sharply, and the average labour costs for them have increased too. Apart from this, the faculties’ costs for infrastructure, including ‘core facilities’, have increased. Together with the reduction in faculty grants, this has led to a dramatic reduction of the funds available for allocation to institutions and researcher groups for technical and administrative staff or for operating costs. These funds are now virtually non-existent.

- Government grants for medical research administered by the Swedish Medical Research Council (SMRC) and its successor the Scientific Council for Medicine at the Swedish Research Council (SRC) have diminished during the period, at the same time as the grants to other scientific disciplines have increased. The total grants allocated by the Scientific Council for Medicine in 2002 were about the same at current prices as the SMRC’s allocations in 1994/95. In terms of purchasing power parity, however, this means a reduction of about 20%.
In 1993, researchers could finance internationally competitive research out of faculty grants and grants from research councils. This stable funding base no longer exists. Consequently, researchers must obtain funds from other sources in order to be able to perform meaningful research. However, grants from such sources
are nearly always of limited duration and confined to a specific target area.

Resources are scattered among many small recipients

- It is very doubtful whether Sweden has the resources to ensure that all the present medical faculties can be internationally competitive research centres. Therefore, and in order to ensure that the existing faculties can meet their obligations with respect to undergraduate programmes, they should engage in appropriate cooperation. In any case, scattering resources across even more small recipients must be avoided.

Clinical research – great problems despite additional resources

- The funds available under the Agreement on Medical Training and Research (‘AMTR funds’) have been reorganized during the period, and they are now allocated mainly on the basis of project applications and/or demonstrated activity/research results. Many clinically oriented research groups have thus received substantial additional resources.

- The crisis in Swedish clinical research is not primarily due to a lack of funds. The strained situation in the health service, with less time for research and less importance attached to research as a qualification for a medical career, are more important factors. These issues are important in the context of the Swedish health and medical services and must be resolved.

Postgraduate studies – sufficient volume but insufficient government financing

- Medicine is the discipline in which the number of postgraduate students and doctoral degrees and the annual intake of postgraduate students are greatest. These volumes correspond to the educational objectives set by the Government and Parliament.
• The medical faculties now fund less than one-third of postgraduate students’ labour costs out of faculty grants. The tutor must cover the rest of the costs by external grants.

• There is a conflict between the statutory objectives of postgraduate studies (not more than four years’ study, a large number of courses, safe projects) and the objectives of researchers/tutors who finance postgraduate students mainly out of external research grants (internationally competitive, creative research that is likely to generate new grants).

• In the long term, the fact that so few medical students choose postgraduate programmes in preclinical departments is a serious problem for the medical faculties.
Sweden is falling behind in terms of scientific publications – risks being relegated from the top division

- Sweden has had an enviable leading position when it comes to the number of scientific publications in medicine and their impact factor in terms of the citation rate. But both these measures have been falling steadily ever since the mid-1980s. There are no signs of a recovery or even a levelling out.

![Citations. Percentage of citations in relation to other Western European countries](image)

**Figure 4.** Percentage of citations in relation to other Western European countries (floating averages).

Non-government funders are filling the vacuum

- At the same time as government grants have been eroded, there has been a large increase in non-government grants. Within the space of a few years, foundations were able to increase their grants substantially thanks to the boom in the share and bond markets, and disbursement of the funds research derived from the former wage earner foundations that commenced in 1997. Some research groups managed to attract substantial, albeit temporary, support from industry, the EU or other funders.

- Government grants for research, including AMTR funds, fell during the period 1993/94-2001 by about SEK 150
million in real terms, while non-government funds increased by about SEK 800 million.

![The faculties' research revenue (SEK million)](image)

**Figure 5.** The development of research revenue during the period 1993/94-2001 for all the medical faculties in Sweden. The amounts are expressed in SEK million in real terms (base year 2001). The amounts are indexed in accordance with the specialized Education and Research Index and represent 2001 prices. Government research grants represent the sum total of Faculty grants for research and postgraduate studies, Other government funds, Government research council funds and AMTR, Agreement on Medical Training and Research, funds (85% of the total AMTR grant). External funds consist of Other research funds (Foundations and organizations, Foreign financiers, Enterprises, Other contract revenue, and Own funds and financial revenue).

Research groups that do not fit non-government funders’ profile are being starved out

- Generally speaking, non-government funds are paid to individual research groups, not faculties. Some research groups, whose projects fit in with current areas of interest, receive large grants, while many groups, whose research does not fit this pattern, receive little or nothing from these targeted sources. The result is less diversification and investment in ‘fashionable’ projects.
- The inquiry group obtained a number of progress reports from research groups through the faculties. Many of these express great concern, sometimes even resignation, about the future. As a result of the erosion of basic government funding (faculty grants and grants from the Scientific Council for Medicine), they see no opportunities for long-term funding for their research, despite excellent knowledge of their subject, exciting
projects and good results in the form of publications and postgraduate programmes.

The inquiry group’s conclusions and proposals

- In order to ensure long-term development, government funding for Swedish medical research, especially for researcher-initiated projects, must increase substantially. The aim should be to make it possible for cutting-edge research groups to finance competitive projects with faculty grants and grants from the SRC’s Scientific Council for Medicine.

- The resources allocated to the Scientific Council for Medicine should be substantially increased. The Council’s own analysis indicates a need to triple its resources by 2008. In the view of the inquiry group, even this increase may not be enough, since it would mean that the level of funding in Sweden in 2008 would still be lower than that in the UK and Canada today and far behind the USA (in per capita terms).

- Most of the funds should be used for researcher-initiated projects. The Scientific Council for Medicine should be responsible for determining the amounts and arrangements as regards government grants to national resource centres. Apart from this, the Council should allocate the available funds as it sees fit.

- The resources allocated to the medical faculties must also be increased. A reasonable figure would be an overall incremental increase of SEK 750 million in annual grants by 2008. A condition for eligibility should be that these funds must be used to strengthen basic resources, fund postgraduate education and create a more balanced career structure by increasing the number of middle-level positions. The deficits that have arisen as a result of the faculties’ expansion and the commitments they have already honoured should be covered by cutbacks and streamlining.