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University Medicine as an Integral Part of the University

HRK German Rectors' Conference

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Brief overview

University medicine[1] is an integral part of the university, with close links to other university disciplines. It is therefore involved in fundamental strategic decisions in relation to the university's profile and core areas of research and teaching.

University, medical faculty and university hospital form a community of responsibility whose cooperation should be upheld through effective agreements based on defined goals and deliverables within the framework of clear governance structures. Agreements should also be guided by the objective of containing the 'centrifugal forces' arising from different interests and remits by means of mandatory process interconnections.

Universities and university hospitals suffer – to a differing extent – from structural underfunding, which is being exacerbated by a severe investment lag in relation to building fabric and research infrastructure. Universities and university hospitals therefore need a substantial and guaranteed increase in their funding allocations. Both are genuinely interested in providing a well structured and sufficiently funded university healthcare system, which does not exist at present. Instead, the current framework presents the risk that the economic competition in which hospitals find themselves will overshadow and dominate research concerns in university medicine. In particular, the cross-subsidisation of university hospitals using funds allocated for research and teaching must be curbed by means of clear regulations.

The recruitment of excellent early career researchers is crucial to the capabilities and competitiveness of university medicine. This includes the early attraction of students to the world of research. However, many qualified young researchers decide against a research career because of the current conditions. To offer early career researchers attractive prospects, there is a need for suitable career paths and concepts, adequate pay and in general the creation of a structure that supports and encourages research and gives researchers a suitable environment for their work.

Health research in Germany benefits from inter-institutional cooperation and networking, as seen in exemplary fashion in recent years in the German Centres for Health Research. However, the development of such structures must not disrupt the integrated interdisciplinary network of research, teaching and healthcare provision that characterises university medicine in favour of non-university research institutions. Sufficient scope must remain for knowledge-led, innovative research outside such structures and

[1] This resolution does not apply to veterinary medicine or specialist healthcare occupations, which will be addressed if appropriate in a separate paper at a later date.

networks, which is one of the traditional and particular strengths of university medicine.

I. Introduction

Health research has made enormous strides in recent decades. In response to demographic change, growing life expectancy and rising demand for health services, new methods of treatment have been developed and adapted to prevailing needs. The more recent developments in highly qualified and highly specialised medicine include personalised or precision medicine and the study and treatment of rare diseases.[2]

University medicine makes an important contribution to these developments. It represents the core of health research and healthcare provision in Germany. The special, unique position of university medicine arises from the combination of research, teaching and patient care. This combination is the only framework capable of providing the necessary environment for the qualification of early career researchers and comprehensive translational research and therefore for new, innovative treatments, because innovations are generated 'close to the patient's bedside' and require healthcare facilities. Collaboration between anybody being directly involved in university medicine and also cooperations with other university disciplines and non-university (research) institutions are essential to the process of innovation in university medicine. Basic medical research and clinical research cannot take place without the cooperation of medicine, natural sciences, engineering sciences, humanities and social sciences.[3]

II. University medicine as an integral part of the university

Due to its contributions to research, teaching and healthcare provision, university medicine has been a key discipline at universities since its very beginnings. In particular, the university environment enables dialogue and cooperation with other university subjects, which make important contributions to medicine or derive important contributions from it.[4] [5] University medicine therefore needs to be embedded in the wide range of disciplines represented within the university.

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[2] This was also noted by the Commission of Experts for Research and Innovation [hereafter referred to as EFI (2014)] in its report in 2014, p. 54.
[3] Cf. Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) [hereafter referred to as DFG (2015)], Recommendations of the Permanent Senate Commission on Key Questions in Clinical Research on the further development of clinical research at universities, p. 4.
[4] DFG (2015), p. 11.
[5] This was noted in the joint paper published by the Universities Member Group of the HRK and the German University Chancellors' Working Group on University Medicine in 2010 [hereafter referred to as MUKAH (2010)], p. 3.

As an integral part of the university, university medicine contributes to the institution's profile and competitiveness through interdisciplinary networking with other subjects and the particular strengths of the individual university. At the same time, the research and teaching aspects of university medicine are involved in the university's strategic decisions.

In terms of internal differentiation, the dualism of research and teaching on the one hand and patient care on the other is a constitutive element of university medicine. Both areas are important aspects of its quality-oriented ongoing development and scientific productivity. Faculties of medicine are responsible for delivering excellent research and teaching and for the training and encouragement of early career researchers. University hospitals – which are normally organised as independent institutions within the hospital system in the interests of efficient hospital economics – have a regional healthcare mandate and, as places of clinical research, responsibility for research-based patient care that also serves the purposes of research and teaching. University hospitals also play an essential role in advanced specialist physician training. The overall process of the training and advanced training of physicians is therefore a particular feature of university medicine.

III. Governance structures

The three interlinked areas of responsibility in university medicine – university, medical faculty and university hospital – form a community of responsibility based on the remits, interests and decision-making powers assigned to each of them by law. Bringing these together in a structure that promotes cooperation is a considerable challenge for any institution.[6] The question of local implementation – be it an integration or a cooperation model – plays a secondary role. What is vital is joint, coordinated structural and development planning between the university, medical faculty and university hospital, clear constitutional and governance structures and effective contractual agreements on the goals and deliverables of cooperation.

The 'centrifugal forces' arising from the different funding conditions and different interests and performance parameters[7] can be contained through development planning in which all actors – university leadership, dean of the medical faculty and management board of the university hospital – are involved according to their roles and responsibilities and through binding process limitations.

[6] MUKAH (2010), p. 4.

[7] Coordination and dialogue should take place in connection with appointments, for example – with due awareness of the sometimes opposing interests of the various institutions.

The management teams of university and faculty should participate in the bodies of the university hospital, thus allowing their interests to be adequately represented. In particular, the dean of the medical faculty as the representative of academic interests and concerns should be given a stronger position on the management board of the hospital in that decisions affecting research and teaching must be unanimous. The interests of the university hospital's management board must also be adequately represented within the university.[8]

The constitutional requirement of the protection of freedom of research was most recently re-affirmed by the so-called MHH ruling of the Federal Constitutional Court[9]. In accordance with this decision, researchers must be involved in all "research-relevant developments", which includes decisions relating to organisational structure and budget.[10] The Federal Constitutional Court also ruled that decisions in healthcare provision, if intrinsically linked to research activity, are also research-relevant and therefore require the direct or indirect involvement of researchers.

IV. Funding of university medicine

Universities and university medicine are genuinely interested in providing a well structured and sufficiently funded university healthcare system. Without hospitals, clinical research and medical training would not be possible. University hospitals can also only fulfil their role as maximum care providers with sufficient facilities. However, the current framework presents the risk that the economic competition in which hospitals find themselves will dominate research concerns in university medicine.

In terms of hospital economics, the remit and funding situation of university hospitals has deteriorated considerably in recent years. Reform developments in the healthcare and hospital system have intensified competition, which also affects university hospitals, without taking their special situation into account. From an economic point of view, university hospitals have to shoulder an above-average burden resulting from a high proportion of extreme cost cases, the provision of state-of-the-art equipment for innovative examination and treatment methods, and a high proportion of physicians undergoing training or advanced training.[11] A new pillar must therefore be added to the current remuneration system of case-based flat rates to take into account

[8] See MUKAH (2010), p. 6.
[9] Decision of the Federal Constitutional Court on 24 June 2014, 1 BvR 3217/07.
[10] See head note 1 of the decision of the Federal Constitutional Court of 24 June 2014, 1 BvR 3217/07.
[11] EFI (2014), p. 67.

the special costs of university hospitals and their special remits in the funding system.[12]

As long as university healthcare provision remains structurally underfunded within the hospital funding system, the current situation where funds allocated for research and teaching are diverted to patient care will only get worse. The hidden subsidisation of patient care to the detriment of research and teaching will continue unnoticed for as long as those responsible for policy fail to create clear regulations and enforce their implementation. As a result, Germany's capabilities in medical and clinical research will be undermined and its competitiveness will suffer.[13]

It is also essential to agree on the exchange of services between medical faculties and university hospitals in terms of funding and to create transparent structures for the planning and use of the research and teaching budget. The department should be given authority to decide on the proper use of the budget for research and teaching. Furthermore, steps should be taken to ensure that, in spite of the associated difficulties, the keeping of delayed separate accounts is made more transparent or replaced by advance performance agreements. The Federal Constitutional Court recently took a step to this effect when it expressly required legislators to pass budget regulations for the protection of freedom of research with which to counter "the risk of internal cross-subsidisation of patient care through funds for research and teaching by means of mandatory separate accounts".[14]

The economic problems facing university medicine are compounded by a no less precarious funding of the universities, which are suffering from similar structural underfunding and feel forced to compensate for a lack of basic funding allocations through competitively sourced second- and third-party funding. This is resulting in a growing imbalance between basic funding and third-party funding, with third-party funding accounting for a steadily increasing proportion of total university budgets and therefore placing additional burdens on the infrastructure. The current level of overhead funding does not cover the full costs of projects. In a field like medicine, where third-party funding is a vital resource, these dynamics have a serious impact.[15]

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[12] EFI (2014), p. 68: University hospitals in the Netherlands receive special funding for their special role in research, training and innovation. Known as the 'academic component' for research, it is funded by the Ministry of Health. In Switzerland, hospitals are paid additional per-capita lump sums for the training of physicians.
[13] Similarly, EFI (2014), p. 69.
[14] Decision of the Federal Constitutional Court on 24 June 2014, 1 BvR 3217/07.
[15] The HRK has therefore been calling for a long time, most recently at its General Meeting in November 2015, for the overhead funding for all

Finally, the possibility of opening up additional funding sources to universities through the assignment of advanced training measures currently reserved for the medical associations should be considered. Advanced scientific training is now a core task of higher education institutions. It would therefore be logical if universities could offer advanced training for physicians.

V. Infrastructure and building fabric

The structural and technical infrastructure in university medicine – like the universities in general – requires considerable investments. Many university buildings are unsuitable for modern medical research due to their age and condition. In addition, the structural situation at many university hospitals is the main obstacle to economically optimised hospital operations. According to estimates by the German Council of Science and Humanities (WR)[16] and the HIS Institute for Development in Higher Education (HIS-HE)[17], the investment lag throughout the higher education sector now amounts to some €30 billion. Renovation measures only address the problem to a limited extent and in many cases delay the necessary investments in new construction. With reference to Art. 91b of the Basic Law, the federal and state governments must therefore enter into appropriate investment agreements to secure the future competitiveness of university medicine.
The federal states also have an obligation to fund investments in structural and technical infrastructure in line with the Hospital Funding Act (Krankenhausfinanzierungsgesetz), which does not cease to apply as a result of the special structure of university hospitals.

Further investments in (research) infrastructure are needed, including investments in information and communication technology. Modern medicine, especially precision or personalised medicine, requires the use of large volumes of data including biodatabases. Linking, merging and evaluating data opens up an array of new research approaches. This requires both suitable infrastructure in situ and corresponding knowledge and expertise on the part of researchers. To maintain Germany's international competitiveness in these areas, significant investments are needed in the establishment and expansion of platforms, databases and IT infrastructure at both universities and university hospitals, as well as in the linking of these systems[18].

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research projects supported with public third-party funding to be increased to at least 40%.
[16] WR according to *Handelsblatt*, 8 January 2009.
[17] HIS-HE „Finanzierungsbedarf für den Bestandserhalt der Hochschulgebäude bis 2025" [Funding Requirements for the Maintenance of University Buildings until 2025], Forum Hochschulentwicklung 1/2016.
[18] DFG (2015), p. 14.

VI. Studying and teaching

The federal and state governments are currently hammering out a comprehensive reform of medical studies as part of the 'Medical Studies Master Plan 2020'. This addresses key questions relating to the allocation of study places and a greater emphasis on general medicine in course programmes and the practical element. The reform agenda is strongly influenced by current structural problems relating to a shortage of doctors in rural areas. While reforms of medical studies justified on scientific and medical grounds are fundamentally to be welcomed, reforms prompted solely by current structural problems should be rejected as inappropriate.

This applies firstly to the allocation of study places in medicine, which should continue to be based solely on objective criteria such as aptitude and not partly determined by a 'rural doctor quota', as is currently being considered by politicians. Fundamentally, universities should continue to have the right to decide autonomously, on the basis of state laws, what admission criteria they apply.

The political desire to give more emphasis to the subject of general medicine is fundamentally to be welcomed. However, here too individual institutions should be able to make decisions on the establishment of chairs in general medicine within the context of their own institutional profiles and with continued autonomous decision-making. This is especially true where they require suitable equipment and networking with general medical practices.

A practical element is an essential part of medical studies. But care must be taken to maintain a balance between practical relevance and the acquisition of basic scientific knowledge. Particularly with regard to later science-led practice following the model of the scientifically trained physician, more emphasis must be placed on giving students basic scientific knowledge during their studies and encouraging an interest in research at an early stage.

VII. Early career researchers

University medicine faces significant challenges in the recruitment of researchers for basic and clinical research. Many medical graduates decide not to pursue a research career because they do not see either good career prospects or attractive remuneration. To many, a university-based career seems insecure compared with the alternatives.

We must therefore develop routes in university medicine which make it possible to distinguish, in tasks and contract design, between young doctors who aspire to a research and clinical career and the (larger) group of those who aspire only to a medical

training and are not primarily interested in research, but are indispensable in healthcare and teaching.

Doctors who mainly conduct research work are less well paid than their colleagues who devote most of their time to patient care, although they have three times the workload and perform research and teaching duties in addition to caring for patients. These differences in pay, caused by different classifications (TV-L or TV-Ä), must be eliminated and competitive incentives must be created for academic careers.

The inconsistent and non-transparent credit given to research hours in advanced specialist physician training also deters many from research. We must therefore endeavour to develop uniform guidelines for the crediting of research hours in advanced specialist physician training.[19] Efforts must also be made to enhance the attractiveness of medical research as a career. This could be achieved through the development of career concepts[20] by the universities, which would however need the assurance of funding from those responsible for policy. It is crucial to create financially secure (for hospital operations too) and attractive opportunities for research that allow early career researchers to concentrate on their own research without disadvantage. Creating these opportunities for university hospitals requires transparent planning and funding and must be assured by the dean. Overall, the structures and hierarchies within university medicine must be scientifically adequate and conducive to research.

VIII. Inter-institutional cooperations

Cooperation between the medical faculty and other university departments and its integration in research alliances with non-university institutions are essential in view of today's competitive situation. In particular, cooperation between medicine and natural sciences, engineering sciences, health sciences, humanities and social sciences is gaining in importance in both basic and clinical research.

To promote exchange between different professions in the healthcare sector, universities and universities of applied sciences are also cooperating in the areas of research and teaching to rise to the future challenges of healthcare professions.

[19] See also EFI (2014), p. 79.

[20] See also, for example, the advanced training programme for clinician scientists, developed by the DFG's Senate Commission on Key Questions in Clinical Research (Recommendations of the Senate Commission on Key Questions in Clinical Research: Establishing an Integrated Research and Training Programme for Clinician Scientists in Parallel to Residency Training, April 2015).

In addition to interdisciplinary and university cooperation, partnerships with non-university research institutions also play a prominent role. The exchange between basic research, clinical research and practice and cooperation through research alliances are indispensable to the translation of scientific knowledge into new technologies and treatment methods in medicine.

One particular form of cooperation in medicine can be seen in the *German Centres for Health Research* (DZGs). The structures created here support and link research in selected key areas (major diseases) to give essential impetus to the process of translation. The aim is to achieve a long-term, internationally competitive linking of basic and clinical research. The special position and distinguishing characteristic of university medicine is the fact that it has the unique capacity to bring together the breadth of research, teaching, training, advanced training and patient care for the purposes of basic, translational and clinical research.

In the further development of the DZGs, we must address the question of how the position of university medicine within the DZGs can be strengthened and how they can be integrated in the universities. This is all the more true since the amendment of the Basic Law in 2014 removed one aspect affecting the DZGs, namely the 'ban on cooperation' which previously existed in the university sector.

While cooperations with non-university research institutions mainly involve large projects carried out by research alliances, one of the special and traditional strengths of university medicine is the knowledge-led, innovative research that results from current problems in patient care. In this respect, university medicine must continue to guarantee scope for individual research that provides vital impetus for innovation.