

Another kind of crisis threatens Germans: In the global marketplace of medical knowledge, Germany's share is limited

By Gerd Antes

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Our ideas about how modern medicine is done are simple: In an ideal world, primary research is conducted in an increasingly efficient way and produces new ideas. From this research, new therapies are developed, which then have to compete in clinical studies against other therapies, or against nature, and thus prove their superior effectiveness and their innocuousness. The results are collected in databases and made accessible in a user-friendly manner via the Internet. Both doctors and patients have easy and free access to these findings and use them to inform cooperative discussions of diagnoses and the choice between available therapies. In this manner, the indispensable groundwork for optimal patient care is laid, admittedly involving considerable financial investments.

A look at reality, however, is sobering. Just as we in the developed world today use water and electricity as a matter of course, knowledge will in just a few years be common property, available from countless information outlets and ubiquitous by means of wireless services. Soon, the components of the medical system and, in particular, of the doctor-patient dialogue will enter a new era. However, despite considerable international efforts, satisfactory data from clinical studies are not available for many screening and diagnostic tests and therapeutic interventions.

Knowledge pool and knowledge gaps

More than 500,000 comparative studies have been conducted worldwide, representing an enormous pool of knowledge. Although more than 13,000 studies are added to this pool each year, many questions remain unanswered. Pivotal knowledge gaps exist, especially in those areas in which studies are not financed by industry as they consider them unprofitable. Because the financing of patient-oriented clinical studies is being continuously shifted from the public into the private sector, these gaps will not be closed unless fundamental changes in the appropriation of societal investments are made.

Another situation far from ideal is the adaptation of new evidence into healthcare systems. As countless studies from the last forty years have revealed, the application of knowledge is realized in alarmingly slow ways. The results of this delay are a number of preventable fatalities and inadequately treated patients (the exact numbers naturally being unknown). This conclusion is true not only for drug treatments and non-medicinal interventions, but also more broadly for general recommendations for health care. One of the most significant examples concerns sudden infant death syndrome (SIDS). The recommendation that babies should sleep on their stomach (in the prone position) in order to decrease the risk of SIDS was maintained for many years. Even though existing data already indicated that the prone position increased, rather than reduced, the risk, "belief" kept the upper hand on knowledge for many years, inevitably resulting in a high number of preventable deaths of children.

Germany plays only a secondary role

The research communities and healthcare systems of many countries are concerned with the often large gaps and barriers between available and verifiable knowledge and the conduct of

doctors and patients. The American Institute of Medicine has compared the diffusion of knowledge into the so-called “know-do-gap” (comparable to a drop of coffee permeating a sugar cube) to a Brownian motion and has called for a better understanding of the underlying mechanisms. In response, a large number of cost-intensive activities have been initiated in Canada and other countries under the heading “knowledge translation.” Placing the emphasis on varying aspects of the issue, it is primarily Australia, the UK, New Zealand, The Netherlands and the Scandinavian countries that have put the topic on their national agendas, focusing both on the generation of knowledge as well as the systematic utilization of knowledge.

In this movement towards a global medical knowledge and information society, Germany is playing only a minor role and, in many instances, does not have any say at all. Instead of attempting to provide complex explanations, here are a few facts that cannot be ignored: A look at the studies concerning the great controversies of the past few years is impressive. Recommendations for hormone replacement therapy, breast cancer screening and specific stroke units have been exclusively based on studies that were carried out in other countries. Germany’s minimal role is again confirmed by the current discussion about the benefits of the vaccination against cervical cancer. The study at the center of this discussion included 12,000 women in 90 study centers in 13 countries and a number of academic centers in its analysis, none of them in Germany. Even though the vaccine’s scientific foundations were developed here and were recently awarded a Nobel Prize!

English is a must

A glance into *The Cochrane Library*, currently the most extensive database of information on the effects of healthcare interventions, is telling. The systematic reviews included in the *Library* are based on approx. 50,000 comparative studies. These were selected, after being quality-checked, from a pool of 120,000 studies relevant to the various interventions. The German contribution to this pool is, in relation to the country’s population, almost ten times smaller than that of the leading countries, among them in particular Sweden and Denmark.

It is almost needless to point out that the rapidly growing international knowledge pool, which contains indispensable information on the application of interventions on humans, is created exclusively in English and advanced mainly in the UK and North America. This situation will still intensify in the future. All systems of academic recognition and rewarding, at the institutional as well as the personal level, are based on the publication of study results in journals with high impact factors (signifying the number of citations of a journal in other journals). These journals are exclusively English publications, and their impact factors are up to fifty times higher than those of German publications. Forgoing a discussion of the usefulness of these factors at this time, it needs to be emphasized that this development is irreversible.

A lack of interest

Considering that Germany does not play a significant role in the generation of knowledge, perhaps it should be particularly adept at using the existing global knowledge pool. This, however, is not the case. The language barrier between the world of knowledge and the reality of healthcare delivery in Germany is the crucial reason for this. According to relevant studies, 80% of German doctors cannot or do not want to read in English in their professional life. Thus, they inevitably remain outside the global knowledge pool and have to rely on secondary reporting in German journals as well as on information from the pharmaceutical industry, which is often deplored as biased.

But what about the other 20% of German doctors, the doctors who want to face the ‘English’ challenge? Their institutions and associations mostly fail them. The German political institutions and organizations exhibit an astounding ignorance of and a widespread indifference towards these developments. Thus, the majority of the medical community, and even a number of university hospitals, do not have access to relevant scientific resources.

Globalization cannot be ignored

One can only guess at the reason for this disparity. It surely cannot be financial. It should be well worthwhile for our society to spend one to two Euros per doctor, or one Euro cent per inhabitant, in order to provide access to relevant medical information that can routinely be applied. Or, should the provision of access to fundamental elements of their work really remain a private endeavor for doctors, patients, reviewers, judges, guideline development boards, the representatives of ethics commissions and those carrying out studies?

Viewed from any angle, one has to conclude that Germany’s contribution to global knowledge in medical care does not match its size and role as a G8 country and the leading country in exports. Neither the globalization process nor the millions that other countries are investing can be ignored. Notwithstanding the commendable efforts already made, it is high time that decision makers in Germany acknowledge the signs of the times and join ranks in order to actively and aggressively break new ground, instead of continuously placing the responsibility on others. International working groups, such as the recent conference “Setting the Global Health Research Agenda” organized by the WHO, Unesco, and the World Bank (without any German contribution), demonstrate that this appeal is directed at everyone. Time is short, especially since Germany’s deficits, compared to other leading nations, are steadily increasing.

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