

For more Clarity



Professor Michael Schlander has been dealing with health from many perspectives: He worked in the field of brain research, he is a physician as well as an economist, and he holds a Professorship for Health Economics at the University of Heidelberg. He taught at the Universities of Duisburg-Essen and Witten/Herdecke and until 2016, he was a Professor of Health and Innovation Management at the Ludwigshafen University of Economics. For 15 years, he has been a successful international manager for the pharmaceutical industry. In 2005, he founded the non-profit „Institute for Innovation & Valuation in Health Care“ (InnoValHC) in Wiesbaden and in 2008, he was a co-founder of the German Society of Health Economics (DGGOe). In 2012, he was the scientific director of the 15th Annual European Congress of the International Society of Pharmacoeconomics and Outcomes Research (ISPOR) in Berlin, which is the largest health-care conference in Europe. Since January 2017, he heads the Department of Health Economics at DKFZ. Intern talked to him about the difficulty of calculating the value of health.

Professor Schlander, at your department at the DKFZ you are pursuing research into the health economics of cancer. What makes this topic so exciting

MS: New cancer therapies have repeatedly been a subject of debate in recent years. On the one hand, medical progress in oncology is, of course, very favorable, since it facilitates customized, gentler treatments with better outcomes; on the other hand, there is talk about “cost explosion”, because new anticancer drugs are often very expensive and raise questions about long-term financing. Between these two poles, goal conflicts appear between a doctor’s obligation to provide the best possible care for individual patients and the ethical responsibility to preserve the whole, i.e., the healthcare system and the solidarity based community of health-insured people. The interesting and challenging task, economically speaking, is to analyze the economic consequences of cancer as well as of cancer research, while at the same time enhancing the effectiveness and efficiency of medical care for cancer patients.

Looking at your vita, one cannot help but think that at least two of the issues that are close to your heart must at times be conflicting. You are a medical doctor and an economist. A doctor’s concern is to provide the maximum possible therapy for a patient at all times. An economist is expected to balance benefits and costs. How does that go together?

MS: We always weigh costs or risks against benefits when it is about the best possible use of limited resources. We either do this implicitly or explicitly, but we do it in any case. How many resources do I spend in order to achieve a certain benefit, being well aware that I cannot spend these resources in another place then? This question is about the so-called opportunity costs – a principle that we follow in our everyday decisions just as much as in the big decisions that we take. As long as we do not have unlimited resources, this is invariably so. The question is only, whether we do this using formally defined methods and consistently or whether we decide intuitively.

The concrete costs for medical care can easily be calculated. Things probably look very different on the benefits side, don't they?

MS: Many people believe that this is so: that costs are not difficult to measure. After all, I see what is listed on the invoice, so I just have to add it all up. But that is a mistake. Even among economists, cost finding is often neglected. And yet it is anything but trivial. For example, there are costs that do not involve any flow of money. This is the case e.g. in home care provided by family members. Even though no money flows, costs do arise for the caregivers, namely opportunity costs: They cannot go to work or they have losses in leisure time. Conversely, there are cases where money actually flows but no costs arise. Transfer payments are an example for this: Person A supports person B by giving a certain amount while no concrete costs have arisen. And then there is the common case where there are flows of money but their amounts do not correspond to the actual costs. Take, for example, bundled payments (case rates), whose amounts do not always reflect the real costs. In addition, it always depends on the perspective from which I want to measure the costs: From the perspective of health insurances? Or from the patient perspective, where indirect costs such as lost income play a role? Or you are looking at the societal perspective, where macro-economic aspects and costs from lost productivity apply but they have to be valued differently than from the patient's perspective.

If even the calculation of costs is so multifaceted and complex, how does one determine the benefits then? To do so, one must be able to specify the concrete value of health, right?

MS: The classical approach would be to measure the individual willingness to pay. There is an old dictum: Where there is no willingness to pay there is no benefit, and the greater the willingness to pay, the greater the benefit.

But doesn't it make a difference who you ask – healthy people or patients, for example?

MS: Of course. The standard methodology is based on questioning healthy people. For a simple reason: If you ask patients, they might show an indefinitely great willingness to pay. It would be difficult to deduce anything from this for the solidarity based community

of health-insured people. Therefore, one usually takes a circuitous route by asking about the value of a statistical life year. There are various approaches for this, too. One can observe people's real behavior. This type of study is called "revealed preferences". It means that you uncover people's preferences. In the area of traffic safety, for instance, people were asked how much they were willing to pay for an airbag in their car. In doing so, you have to assume that it is known exactly how much risk reduction is associated with it. From this you can calculate the implicit value that people attach to one year of their lives. This requires a number of computational operations, but it is possible. We have just finished a project of this type. We have performed a systematic review on all economic studies on this topic of the past 20 years in order to deduce from this the value of a statistical life year. This will then represent a first approximation. You could then use this value to calculate and compare the benefits of medical measures, for example, that bring about an extension of lifespan.

Provided that each life year can be valued equally.

MS: This is an assumption made by many health economists. They then bring in a modification, namely quality of life. This takes us to the famous QALYS, i.e., quality-adjusted life years. There is a relatively large group of economists who believe that a QALY should have something like a standard value. One QALY would then correspond to one life year in a fictitious state of 100 percent health. Then there would be gradations. For example, if you are living with a health impairment, and therefore get a value of about 50 percent, then one year in this situation would be worth the same as half a year in perfect health. I am not a big fan of this methodology but it is a standard approach used in health economics – and definitely not only in theory.

Isn't this the model that is employed in the UK for decisions about whether treatments should be added to the catalog of services covered by the health insurances?

MS: Precisely. In the UK, one QALY is valued at £20,000 or £30,000. Consequently, new anticancer drugs have significantly poorer chances there to be added to the catalog of treatments covered by the National Health Service. One of my co-workers investigated this and was able to prove it statistically. However, this alone does not mean that the QALY approach is wrong. For example, if you can achieve more in cardiovascular

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medicine using fewer resources, then this does justify the question why we should invest so much in cancer research. In Germany, we are much friendlier towards new cancer therapies because we look more at the benefit when evaluating, while the costs are less important – at least for now.

Where research and development are concerned, therapies and new drugs may be less efficient at first. They are imprecise, have many side effects and they are expensive. It is only by applying and using them that they will be further developed and enhanced. Doesn't one also forgo chances by invariably focusing on efficiency?

MS: When we take the usual statistical efficiency approach, we relate the costs to the benefits at a specific time X and make a comparative evaluation of various alternatives. This can already turn out completely differently at time X+1. By then, new alternatives might have come up or new findings how the method can be better employed – or, conversely, it turns out that the treatment is accompanied by more side effects than anticipated. There have been examples for both cases in the past. Thus, we know that these effects exist and we are well able to describe them in retrospective, but we have great problems predicting them. That means that we have to find a way how to deal with uncertainties, for example by using models or presenting scenarios. This is where we leave the area of the pursuit of truth and enter, in the broadest sense, the area of technology assessment and plausibility. This is also part of health economics, in the form of health technology assessments (HTAs). What is important is that we honestly state where empirical data end and where uncertainty begins and, in addition, that we reveal our underlying assumptions. HTAs exist in virtually all health systems. In Germany, health economics within HTAs still plays a relatively minor role, while in most other countries it plays rather a major one.

Let's go back once more to the value of health: You do not seem to be really convinced of either the classical economic method on the willingness to pay or the model involving QALYs. What other ways are there to calculate the value of health?

MS: The methods you mention are useful for determining the productive efficiency of medical interventions, that is, for making statements about the contribution that a particular treatment can make to patients' health. We are working on developing another approach that will also take better account of existing social norms and preferences – factors that do play a role when it comes to resource allocation within the healthcare system. In this approach, the value that we attribute to a health intervention does not solely depend on the effect that the measure has. Of course it must be effective – if you don't achieve anything with it, it is uninteresting. But the effect it has on lifespan is only one factor, just as the effect it has on the quality of life. It is also important who benefits from the intervention in the end. This is something that most people do care about. However, here we don't immediately have to be dealing with specific persons or groups of persons. Let's take, for instance, the severity of diseases: It is a proven fact that most people think that the healthcare system should primarily help those who are severely ill. The social value of measures is generally thought to be higher then. One can also ask further questions about patient groups: What about children compared to the elderly? That, of course, is already more tricky. And yet: from an ethical and from an empirical perspective there are good reasons to say it is more important to help a child who has not yet had any chance to accomplish his or her life plans than it is, for example, to help somebody at my age – after all, I have already had time to do so for several decades. Many people would probably argue in favor of giving higher priority to the younger person than to me.

But couldn't one also argue the other way round, saying that a middle-aged person who is fully educated and in the middle of his/her working life, i.e., in whom society has already invested a great deal and who might still have children, is more productive and therefore more "valuable" for the economy as a whole?

MS: The WHO, for example, calculates exactly in this way. It determines the burden of disease from the years of life lost and the quality of life lost, i.e., at first sight, the opposite of the QALYs. It assumes a standard statistical life expectancy and calculates the losses that result from diseases in order to classify them. It then adjusts the results based on age. The age weights in this approach in fact give more weight to years lived at middle age than to years lived at older and young ages. Because very young people still have to be educated and the old people are no longer productive. Thus, the WHO takes productivity into account when calculating the burden of disease. If one logically carries this thought further, this is also a tricky business, because eventually I will inevitably get to a point where I will have to differentiate at the level of individuals who is more productive. This is actually an approach you can occasionally find among advocates of neoclassical welfare economics.

How do you avoid having to enter this ground?

MS: We are always on this ground. This is unavoidable. The minute you acknowledge that resources in the healthcare system are scarce and finite and you have to decide how to use them, you are already facing this dilemma. It's all a matter of which theoretical approach you use as a basis for your evaluation and of communicating this honestly and transparently. I always have to demand from myself and from health economics that we should make very clear and transparent what value judgments underlie our methodology or statements. We should not say that something is efficient or inefficient without making transparent what we mean exactly by efficiency and how we define it. This is already challenging because the concept of efficiency has very many nuances which are invariably based on value judgments. The question is ultimately what our health system should aim at and, thus, what the normative framework of our economic considerations is.