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# Nursing staff in hospitals

Having more nursing care staff increases the quality of care –  
Concrete guidelines for staff planning are needed

- International studies show that having more nursing care staff leads to a better treatment outcome.
- German hospitals employ comparatively few nursing care staff.
- The workload taken on by nursing care staff has significantly increased, but not to the same extent across all German federal states.
- Minimum staffing requirements are appropriate for many specialized departments. However, they should not be interpreted as an upper limit, and should not be implemented at the cost of other departments.
- Although Germany's planned regulatory measures are a step in the right direction, effective implementation needs to be ensured.

## Authors



Dr. Jan Böcken  
Senior Project Manager  
jan.boecken@  
bertelsmann-stiftung.de



Dr. Thomas Kostera  
Project Manager  
thomas.kostera@  
bertelsmann-stiftung.de

The caliber of a hospital and quality of the treatment a patient receives there is dependent not only the skills of the physicians working there, but also on the treatment provided by nursing care staff. It is to a large extent the care provided in hospitals that determines the quality of patient treatment, and often whether an operation achieves the desired outcome. If poor quality care is provided, wound infections, falls and other complications can pile up. This can be prevented by well-trained nursing care staff that do not face too great a workload.

The issue of whether there are enough nursing care staff in German hospitals is time and again the subject of controversial and sometimes emotional debate in expert groups, and political and public spheres. Based on the work of the Federal-State Working Group on Hospital Reform (Bund-Länder-Arbeitsgruppe zur Krankenhausreform), the nursing jobs funding program in the Hospital Structures Act (Krankenhausstrukturgesetz, KHSG) provides € 660 million for additional nursing care jobs between 2016 and 2018. In addition, hospitals have received a nursing surcharge since the beginning of 2017.

After almost one-and-a-half years' work, the Expert Commission on Nursing Care Staff in Hospitals (Expertenkommission Pflegepersonal im Krankenhaus) recently determined a need for further action. "Adequate staffing in hospital care is indispensable for the quality of patient treatment and the working conditions of staff" stated the commission, which, in addition to German Federal Minister of Health, Hermann Gröhe, includes a number of state health ministers, as well as other individuals from the governing CDU/CSU and SPD parties involved with health policy. One of the commission's recommendations is to have a minimum staffing level in intensive care units and for the night shift. From 2019, the amount available for the nursing surcharge and additional care personnel will also be increased from 500 million euros to 830 million euros annually.

The debate regarding adequate staffing is taking place in the context of increasing cost

pressures in hospitals. The blame for this can be attributed to the fact that state investment grants have been too low for a long time. The insufficient specialization of hospitals is another is also to blame. Despite the increasing expenditure of health insurance funds for inpatient care, a considerable number of hospitals are in the red. These institutions often face the reproach that their attempts to reduce costs are made unilaterally at the expense of the nursing care staff.

“ Good care in a hospital depends on adequate staffing levels. ”

Hermann Gröhe, German Federal  
Minister of Health

The numerical data for care in hospitals are patchy and, in part, contradictory with respect to the exact number of nursing care staff, their allocation to specialized departments and the bases for calculating the required nursing care staff positions. This being the case, the Bertelsmann Stiftung has subject the nursing care staffing of German hospitals to a fact check. The Bertelsmann Stiftung study focuses primarily on three questions: What impact does the deployment of nursing care staff have on patient safety? How have the number of nursing care staff and their workload developed in recent years? How satisfied are patients with the care they receive? To address these questions, the Berlin research institute IGES has analyzed the quality reports of all German hospitals, as well as international studies on the influence of nursing care on the quality of inpatient treatment.

### Having more nursing care staff results in fewer complications

The international academic literature shows that the deployment of more nursing care staff improves treatment outcomes in hospital. Studies have been able to directly associate improved

nursing care staffing with reduced patient mortality and complications following operations. Conversely, having less nursing care staff results in complications occurring more frequently.

In 2014, the University of Pennsylvania published a study focusing on 420,000 patients over 50 years of age, located in 300 hospitals from nine European countries. The study showed that the probability of patient mortality associated with general, orthopedic or vascular surgery within the first 30 days of admission decreased by seven percent when the proportion of nurses holding a bachelor degree increased by ten percent. Many other studies show that having insufficient nursing care staff leads to more wound infections, cases of pneumonia, and urinary tract infections caused by catheters. Patients experience less falls when more and better qualified nursing care staff are employed in a hospital, and a similar correlation with bedsores (decubitus ulcers) has been shown.

### German hospitals employ comparatively few nursing care staff

In 2015, there were almost 291,000 full-time positions for nursing care staff in general hospitals in Germany, and nearly 30,000 in specialist hospitals for psychiatric, psychotherapeutic, neurological and geriatric patients. Nursing care staff represented 36.1 percent of the staff of general hospitals (49.2 percent in specialist hospitals), so forming the largest employee group in hospitals by far. In private general hospitals, both for-profit and not-for-profit, the proportion of nursing care staff (39 percent) is significantly higher than in public hospitals (33.6 percent). The nursing care staff constitutes around 40 percent of employees in small hospitals with less than 300 beds, in contrast to 31 percent for hospitals with more than 800 beds.

In 2012, every 1,000 cases treated in Germany were looked after by an average of 19 nurses staff (full-time). The average for OECD countries was almost 32, and for Japan there were around 53 full-time nursing care jobs for every 1,000 patients. In comparison to other countries, the level of nurse staffing in German hospitals is significantly below average (see Figure 1). This is also the case when the nurse staff per 1,000 days of hospitalization is considered – Germany is actually in last place here (see Figure 2). Many studies consider the comparatively low international ranking of Germany in this respect to be a sign

#### Number of nursing staff per 1,000 cases, 2012

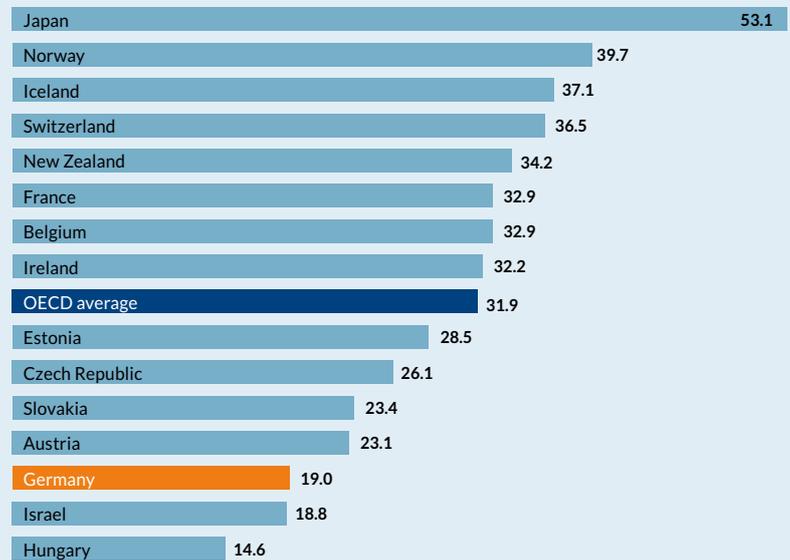


Figure 1 | Source: IGES, based on OECD data (as at 1 June 2016)

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#### Number of nursing staff per 1,000 days of hospitalization, 2012

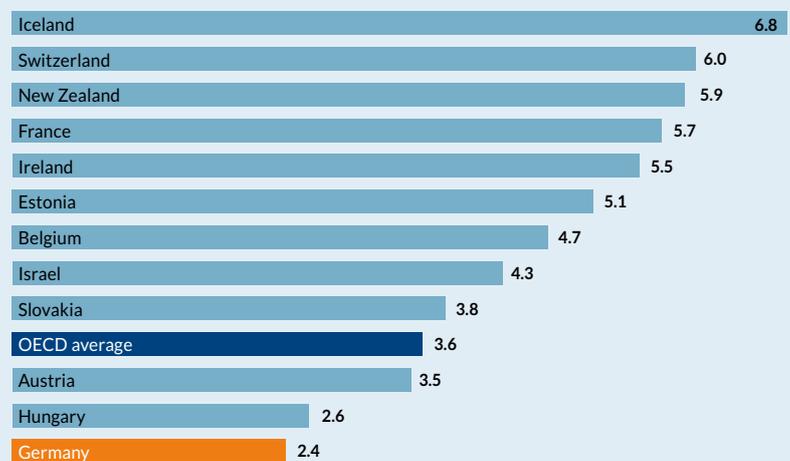
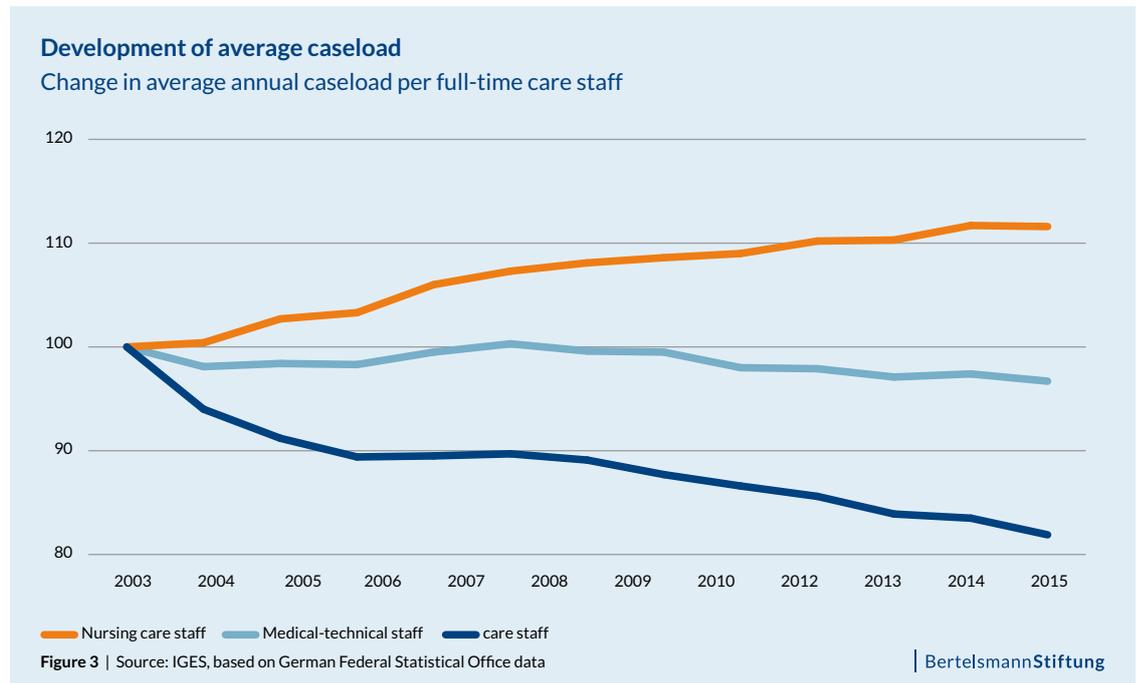


Figure 2 | Source: IGES, based on OECD data (as at 1 June 2016)

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that German hospitals are understaffed with nursing care personnel. Another sign of this is that German nursing care staff complain that they often don't have enough time for the patients, or can't provide what they feel is the appropriate

level of care. As the international comparison also shows, the range of activities performed by German nursing staff could be expanded to include a larger share of more highly qualified functions. Indeed, nursing staff in other countries often perform duties that are reserved for physicians in Germany. This is the case, for example, in Sweden and Finland, where nursing staff possess more wide-ranging

competencies than they do in Germany. In other countries, nursing care duties are delegated by fully-qualified nursing staff to less well-trained nursing aides. In Germany, on the other hand, qualified nursing staff have represented an unchanged proportion of all nursing care staff since 2000.

#### Nursing care staff workload is increasing

German hospitals continuously reduced their nursing care staff up to 2007. Although this trend reversed in 2008, there were still 3.4 percent less nursing care staff in 2015 than in 2000. In contrast, the number of physicians has increased by 42 percent over the last 15 years.

The workload of nursing care staff in inpatient care has increased not only due to staff reductions, but also because during the same period the duration of patient hospital stays declined significantly. In 2003, a full-time nursing care worker in a general hospital had a caseload of 57.3 (statistically speaking), while in 2015 this totaled 64 – an increase of 11.6 percent more patients per nursing care staff member. In contrast, in 2015, physicians had a patient caseload 18.1 percent lower than in 2003 (see Figure 3).

### Patient satisfaction with treatment provided by nursing care staff (presented as school grades\*)

State	Average patient satisfaction
Baden-Württemberg	1.92
Bavaria	1.86
Berlin	1.99
Brandenburg	1.86
Bremen	2.04
Hamburg	2.01
Hesse	2.01
Mecklenburg-Vorpommern	1.82
Lower Saxony	1.95
North Rhine-Westphalia	2.03
Rhineland-Palatinate	1.89
Saarland	1.93
Saxony	1.82
Saxony-Anhalt	1.89
Schleswig-Holstein	1.93
Thuringia	1.85

\*Based on the German grading system from 1.0 to 5.0, with 1.0 being the highest possible grade and 5.0 being the lowest.

Figure 4 | Source: IGES, based on PEQ and SQB data, survey/reporting year 2014

The workload of nursing care staff increases when patients are discharged faster. Shorter stays in hospitals mean more hours of care per patient day, as data from the United States shows. An additional indicator for the increasing workload in nursing care is the case mix index, which measures the average resources required to treat a patient. The required resources rose by 0.7 percent annually from 2010 to 2014, even though this rise already factors in the increased number of nursing care staff in this timeframe.

### Development differs from region to region

The workload of nursing care staff differs from region to region. In 2015, a full-time nursing care position in Hamburg had an average caseload of barely 55, in contrast to an average caseload of 63 in Lower Saxony. The caseloads in North Rhine-Westphalia and Berlin (both 62) were also above average, while they were lowest in Baden-Württemberg (57) and Hamburg (55) (see Figure 5).

Since 2003, the caseload of nursing care staff has increased in all German federal states except Mecklenburg-Vorpommern and Schleswig-Holstein. The increases in Berlin (24 percent), Lower Saxony (20 percent), Bremen (19 percent) and Saxony-Anhalt (16 percent) were far above the national average (an increase of 11 percent) (see Figure 6).

### Patient satisfaction remains high

The increasing workload of nursing care staff hasn't yet directly resulted in patients being dissatisfied with the care provided in hospitals. The internet portal [www.weisse-liste.de](http://www.weisse-liste.de) has analyzed survey data from almost 350,000 patients, and rated the care provided in 2014 as generally good, although older people and men were more satisfied than younger people and women. Patients were somewhat less satisfied in North Rhine-Westphalia and Bremen than in other German federal states. Satisfaction was highest in Saxony, Thuringia and Mecklenburg-Vorpommern (see Figure 4).

### Average caseload, 2015

Caseload per full-time position in nursing care services

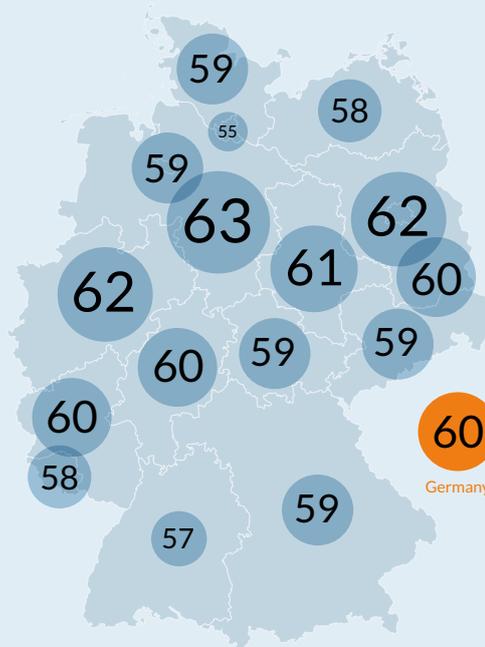


Figure 5 | Source: IGES, based on German Federal Statistical Office data | BertelsmannStiftung

### Change in caseload (in percent)

Change in annual average caseload per full-time position in nursing care services by German federal state, 2003–2015

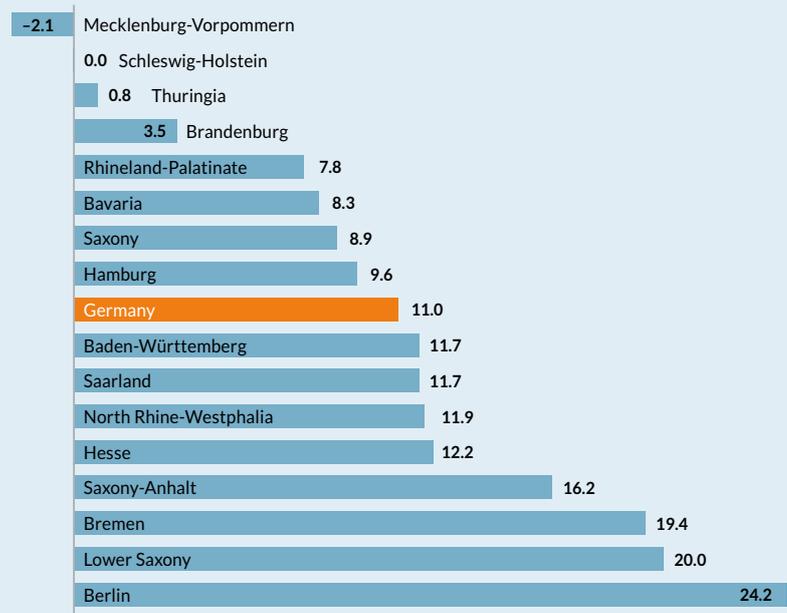


Figure 6 | Source: IGES, based on German Federal Statistical Office data



### What is the real extent of the shortage of nursing care staff in German hospitals?

The key question of the extent of the shortage of nursing care staff in German hospitals is difficult to answer. Provided by a number of parties, the estimates on the gaps in nursing care staff positions for the 2009 and 2016 nursing job funding program are based only on a consideration of input factors, and are thus primarily oriented towards patients' nursing care requirements. However, in order to determine the required positions, the impact of the number of nursing care staff on treatment outcomes should also be considered.

Our study on nursing care staffing shows that more well-trained nursing staff per hip fracture treatment case results in less postoperative wound infections per hospital, and thus to better treatment outcomes.

In addition, the 2014 quality reports of German hospitals indicated that patients with hospital-acquired pneumonia (but are otherwise healthy and not older than 65) enter early rehabilitation earlier the more physiotherapists a hospital employs. No correlation could be proved at the level of specialized departments. One reason for this could be the insufficient quality of data in the quality reports.

The correlation between the nursing care staff ratio and the quality of treatment is clearer when the accounting data are also included. A study by

the Hamburg Center for Health Economics (HCHE) determined for the Expert Commission on Nursing Care Staff in Hospitals a definite additional need for nursing care jobs in 15 various specialized departments. During day shifts, one nursing care worker is needed for every 7.5 patients in all specialized departments to best avoid undesired treatment outcomes (complications) such as pneumonia, wound infections, decubitus ulcers, sepsis, urinary tract infections, and respiratory failure. To achieve this, a total of up to 6,000 additional nursing care jobs need to be created across all German hospitals. The HCHE study indicates that a minimum number of nursing care staff be specified for all 15 specialized departments that were reviewed.

### Making care personnel planning future proof

The current nursing jobs funding program for 2016 to 2018 could, taking into consideration hospitals' own contributions, generate a total of around 6,800 full time positions. This equates to around 3.5 positions per hospital – but these are not expressly coupled with care-sensitive areas. The nursing jobs funding program and the nursing surcharge provided for in the KHSB are, however, measures that don't suit an output-oriented remuneration system for hospitals. In addition, the additional funds provided in the nursing surcharge are not earmarked for a specific purpose. To ensure the sustainability of the nursing surcharge, hospitals need to demonstrate that the funds are also really utilized for "care in bed."

The Expert Commission on Nursing Care Staff in Hospitals has recommended the determination of staff minimums in care-sensitive areas, including intensive care units and the night shift. The German federal government introduced these proposals into the legislative process in April 2017. The details are to be negotiated by the German Hospital Federation, the National Association of Statutory Health Insurance Funds and the Association of Private Health Insurance Funds. It remains to be seen if this negotiated solution will result in a viable agreement. In some places, the legislative proposal leaves some room for interpretation that could run counter to the interests of efficient care. This relates to the rather vague wording relating to taking staff from other departments, the scale of any penalties if the minimums are not complied with, the enforcement of additional charges, and the point in time of an evaluation of the practical implementation

“ Having more staff is not sufficient on its own. We need more qualified nursing care staff, who then assume responsibility for a qualitatively higher range of duties. ”

Dr. Patrick Jahn,  
University Hospital Halle (Saale)

of nursing care staff indicators. The latter should be given a high priority: there is the risk that many hospitals will interpret the indicators as an upper limit rather than a minimum. Care should be also be taken to avoid interpreting the figures as an average, leading to major understaffing of the nightshift, or nursing care staff being taken only from departments without stipulated minimums.

Hospitals will only plan the deployment of nursing care staff according to quality criteria if the quality of care is made transparent. This, however, requires the regulatory measure of quality control. In this respect, the legislative proposal is a step in the right direction. Attention should be paid to changes in the remuneration system to provide that they promote the quality competition between hospitals instead of thwarting it. In

order to ensure that German hospitals sustainably maintain sufficient nursing care staff, good indicators of care-sensitive outcomes need to be developed that can then also be used in external quality control.

Not least, international comparisons have shown that minimum staffing requirements for certain specialized departments can be of use. California and the Australian state of Victoria have already had a positive experience with these. California has the lowest number of patients per nursing care worker out of all U.S. states, as well as the lowest rate of preventable medical errors.

Minimum staffing requirements don't always have to be legally prescribed: in April 2016, in the Charité in Berlin, the first German collective agreement was concluded for a hospital stipulating a binding staff ratio in care-intensive departments. In addition, the collective agreement defines excessive workload indicators for nursing care staff. Particularly relevant indicators include overtime, sickness rate and staff turnover. These indicators are then to be subject to public reporting. Many Australian states have such minimum staffing requirements determined by collective agreements.

Independent of minimum staffing requirements determined by collective agreement or by law, from a medium-term perspective there is still the issue of a restructuring of the hospital sector. A stronger concentration or specialization of particularly care-sensitive departments in a few institutions certainly makes sense. As both the staff and financial resources cannot be increased indefinitely, this kind of restructuring seems inevitable.



For further information, please refer to the IGES Institute Berlin study "Faktencheck Pflegepersonal im Krankenhaus."

The study can be downloaded at [www.faktencheck-pflegepersonal.de](http://www.faktencheck-pflegepersonal.de)

## Recommendations for action

### Having more nursing care staff increases the quality of treatment

Adequate nurse staffing in hospitals is indispensable for the quality of inpatient treatment and the working conditions of staff. As our study shows, Germany lags far behind when compared internationally. The expert commission has already made proposals to address this that the government parties have introduced into the legislative process. The following points should be given primary consideration with respect to the legal formulation and effective implementation of the regulatory requirements:

#### Quality and transparency

- › The development of further care-sensitive outcome parameters for quality reporting and the stipulation of care quality standards should take place as quickly as possible.
- › Binding and proportionate penalties should apply if care standards are not complied with.
- › The statements provided in the quality reports relating to nursing care staff should clearly present to patients the impact of nursing care staffing on the quality of care.

#### Staffing requirements

- › The provisions relating to minimum staffing requirements have to be implemented consistently, and, above all, non-compliance has to be effectively penalized.
- › Minimum staff requirements should also be based on other countries' experience.

#### Care research

- › Minimum staffing requirements have to be stringently evaluated, as provided. Above all, transparent mechanisms need to be developed for this.
- › The planned evaluation should provide reliable information in order to effectively prevent nursing care staff from being taken from wards where there are no minimum staffing requirements.

#### Working conditions

- › The nursing profession needs to be enhanced through delegating more duties, as is practiced in Scandinavian countries, for example.
- › Reform of nursing training should take into account the changing nature of the tasks required to be performed.



SPOTLIGHT HEALTHCARE is an initiative of the “Improving Healthcare – Informing Patients” program at the Bertelsmann Stiftung. Published several times a year, SPOTLIGHT HEALTHCARE addresses topical issues in healthcare. The Bertelsmann Stiftung is committed to promoting a healthcare system relevant to public needs. Through its projects, the Stiftung aims to ensure the provision of needs-based and sustainable high-quality healthcare in which patients are empowered by access to readily understandable information.

As part of the program, the project “Healthcare Fact Check” takes a closer look at a specific healthcare topic several times a year. Healthcare Fact Check aims to help limited resources to be used more appropriately and ensure that healthcare services are more closely aligned to the actual needs of patients.

#### Further information at

[bertelsmann-stiftung.de/healthcare-fact-check](http://bertelsmann-stiftung.de/healthcare-fact-check)

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Program Director  
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Contact:  
Sonja Lütke-Bornefeld  
[sonja.luetke-bornefeld@bertelsmann-stiftung.de](mailto:sonja.luetke-bornefeld@bertelsmann-stiftung.de)  
Tel.: + 49 5241 81-81431