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Review Article

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Economic Impact Of Covid-19 In Hospitals In Germany

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Abstract

Introduction: *The novel coronavirus (COVID-19), discovered in China in December 2019, evolved into a severe global pandemic in early 2020. In 2021, its mortality was reduced thanks to vaccinations, and contact restrictions could be scaled back.*

Objectives: *The aim of this paper is to identify the economic consequences of COVID-19 in hospitals and to document them on the basis of statistical data.*

Methodology: *Expert interviews, statistical analysis, data processing, depicting the conclusions and linking them to the statistics and information provided by interviewees*

Findings: *An overall picture of the cost impact of the coronavirus pandemic in hospitals emerges.*

Conclusions: *Cost neutrality cannot be achieved by organisational measures alone. In addition to infection protection and vaccinations, greater additional funding is required to combat the pandemic.*

Keywords: Coronavirus, COVID-19, pandemic, cost impact, expert interviews, statistical analysis.

Global economic development in 2020 and 2021

Because of the coronavirus pandemic in early 2020, the new decade began differently than expected. The economy and public life were repeatedly put in a state of full lockdown when incidence rates were high in 2020 and 2021, in order to keep mortality rates as low as possible. Many medical care facilities experienced a sharp increase in patients, especially in the winter months, and showed signs of being overwhelmed [1,2,4]. Vaccinations in 2021 greatly improved the mortality situation, particularly among older people and persons with comorbidities, and the pandemic strategy could be adjusted in the following year (2022), and measures scaled back.

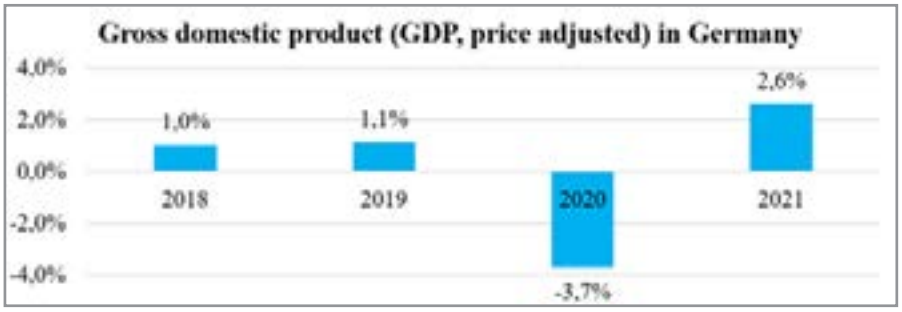

Figure 1: The impact of COVID-19 on GDP (Source: author's own depiction)

In the first year of the pandemic, society and the state were particularly cautious, which resulted in a contraction of economic output of -3.7%. In the following year, the economy adjusted to the situation, and the effect of the previous year was compensated for at least partially, with +2.6%. In 2022, because of the Russia-Ukraine conflict, growth was 1.9%.

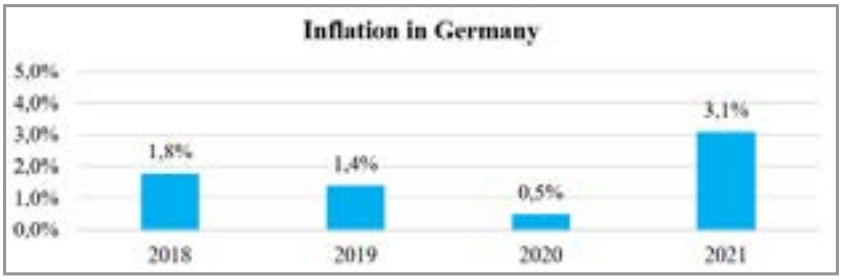

Figure 2: The impact of COVID-19 on inflation (Source: author's own depiction)

Supply shortages arising from lockdowns caused inflation to increase to 3.1% in 2021. In 2022, it rose to as much as 8.6% because of the oil/gas shortages resulting from the Russia-Ukraine conflict [3, 5].

Survey on the Economic Impact of COVID-19

In preparation for a survey, 318 clinics and facilities in Baden-Württemberg were contacted, 14 of which stated they were available to participate in expert interviews on the topic of financial questions relating to COVID-19. The interviews were conducted with managing directors, site managers and/or middle management in summer 2022, in person or in online meetings. The survey covered the period 2020 to 2021 and an outlook for the year 2022, which was not over at the time of the interviews. A broad range of facilities was covered. The facilities that took part had 100 to more than 2,000 employees, and were run on a public, non-profit or private basis. The facilities surveyed also covered an extensive range of almost all disciplines of primary, secondary and tertiary care.

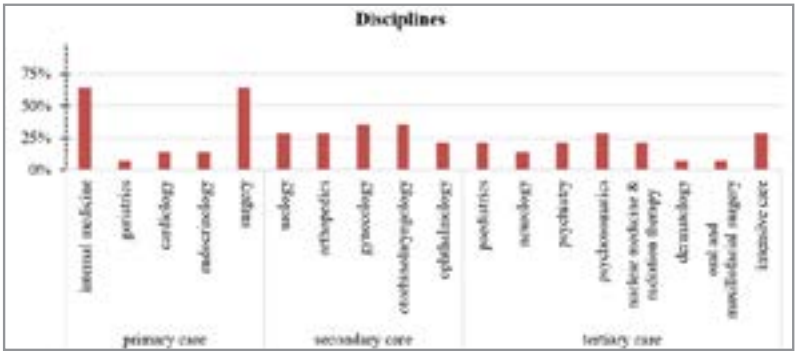

Figure 3: Disciplines of the facilities (multiple answers possible; source: author's own depiction)

In some cases, these facilities experienced a severe drop in bed occupancy during the pandemic. In both comparison years 2018 and 2019, the bed occupancy rate was 4/5 or better for 71% of respondents. In both 2020 and 2021, only 36% of the facilities surveyed were able to achieve this level of occupancy. The support measures from the state were (partially) able to compensate for this underoccupancy and the associated fixed costs. These were not the only effects caused by the coronavirus pandemic, however. Additional impacts are shown in the following figures.

Impact of COVID-19 Clearly Noticeable

All facilities confirmed the impact of COVID-19 on costs, albeit to differing degrees and involving different cost types. Many facilities reported clear negative changes in personnel costs, such as those for medical staff, care staff, medical-technical staff and administration. Care work, which had struggled to attract potential staff even before the pandemic, was cited by more than half of those surveyed. A common reason given was the additional shifts to cover sick leave.

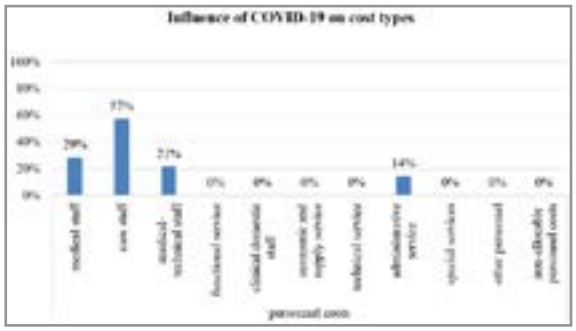

Figure 4: The impact of COVID-19 on personnel costs (n = 14; source: author's own depiction)

In terms of material costs, it was only central administration and community services as well as insurance and tax departments that were not affected by the coronavirus pandemic in any of the surveyed facilities. In some facilities, food and purchased services rose just as much as expenses for business and administration, and for maintenance covered by nursing charges. All facilities saw cost increases in relation to medical supplies. The cost item 'miscellaneous' underwent an increase in costs for almost two thirds of the facilities. This item, for which no further details are provided, includes temporary workers compensating for absences and fluctuation who could not be recruited via the ordinary labour market. It was pointed out, however, that this section of the labour recruitment market was rapidly depleted, and specialists were then no longer available. The training market is not able to make any additional contribution in this regard because of the latency period and demand. Because of governmental restrictions and a certain level of ambiguity in regulations within Germany and abroad, measures aimed at acquiring staff from abroad require a great deal of patience. The cost item water, energy and fuel showed virtually no noticeable increases in costs in 2020/2021, although this situation deteriorated explosively in 2022 because of the oil/gas shortages resulting from the Russia-Ukraine conflict. The facilities do not consider this to be connected with COVID-19, however.

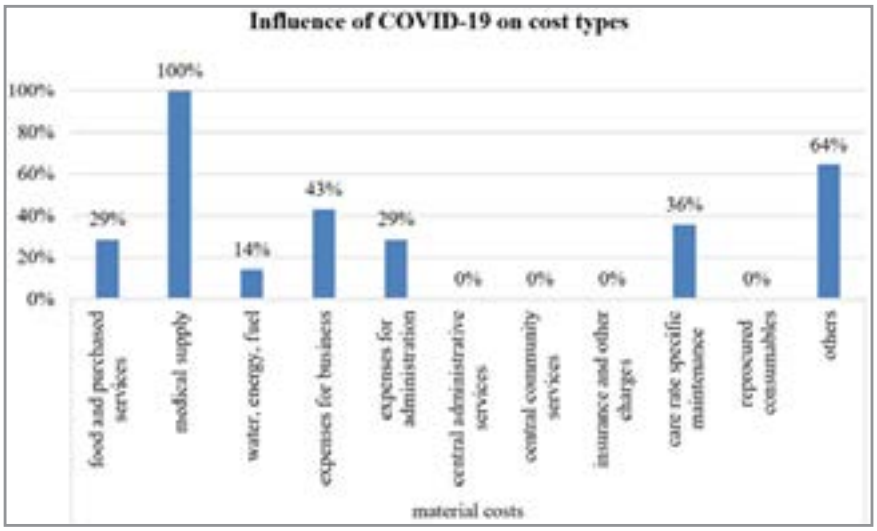

Figure 5: The impact of COVID-19 on material costs (n = 14; source: author's own depiction)

The following figure shows the categories of miscellaneous costs and deductions. For miscellaneous costs, merely a cost increase of 7% was specified for interest payments. No cost increases were reported in connection with taxes, training institutions or training funds. Furthermore, none of the respondents cited deductions such as outpatient care, research or education. The deductions are informative subitems that are also included in the specified personnel, material and miscellaneous costs.

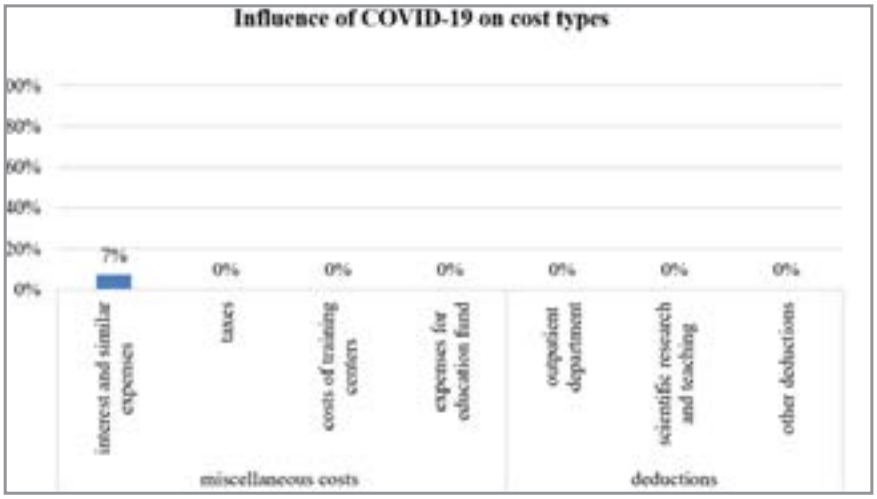

Figure 6: The impact of COVID-19 on miscellaneous costs (n = 14; source: author's own depiction)

The impact on general costs was rated as noticeably and measurably worsening. Almost one third of respondents reported a slight deterioration in the current cost situation as a result of COVID-19, and just over two thirds a moderate degree of deterioration.

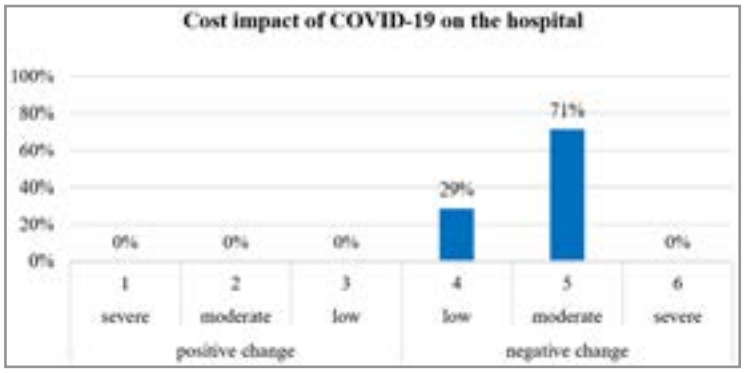

Figure 7: Intensity of COVID-19 impact on costs (n = 14; source: author's own depiction)

The pandemic also had an effect on the revenue situation and thus the operating profit/loss. Even though the fixed costs were compensated for by state measures to some extent, it was not possible for all losses to be covered. Many fixed (i.e. unchanging) cost items could not simply be made more flexible because of the changed situation. One example of this is the reduction in patient numbers. The lack of patients resulted in specialist personnel capacity not being exploited to the full in some specialist areas. These specialist staff could not simply be moved to areas involving contact with COVID-19 patients, however, as this would require specific expertise and understanding of routine procedures.

Certain Expenses Could Therefore Not Be Reduced to the Same Extent As Revenues

In addition to cost impact, there were also balance sheet implications. Stocks were accumulated. While these initially have no direct effect on profit, they do have a negative impact on cash flow, as the building up of stocks needs to be paid for and funds need to be provided accordingly. Measured against other cost items, however, the stock accumulation was not of central importance. As the procurement market was also rapidly depleted, stocks could only be increased to a limited extent. At the same time, reserves were increasingly built up, at least at the start of the pandemic, as it was expected that long-term operating restrictions would lead to some restructuring measures. The facilities were subsequently able to adjust, however, and the reason for building up reserves then no longer applied.

Non-quantifiable additional expenses arising from COVID-19

To avoid costs, cost-neutral compensation is also possible in the form of restructuring work and increasing work density while keeping working hours the same. This additional labour without time off in lieu or overtime results in a heavier workload.

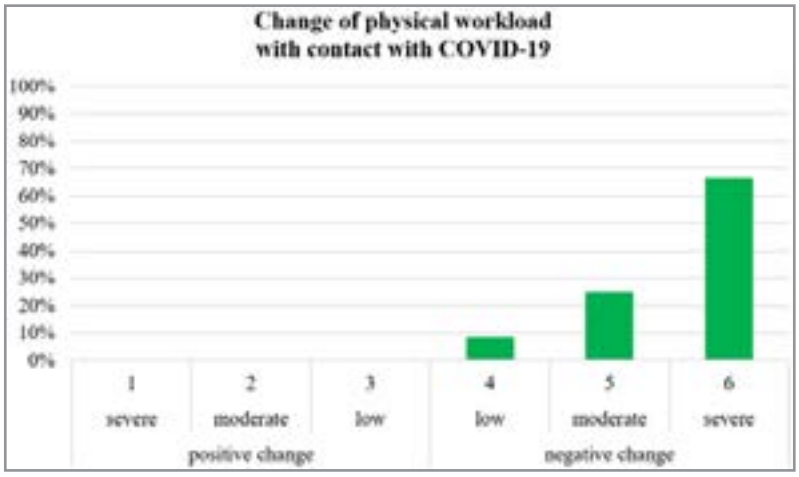

Figure 8: Change in the physical workload for those with contact with COVID-19 patients (n = 12; source: author's own depiction)

A simple example of this is the additional equipment (masks and full protective clothing) which must first be put on, worn during work under difficult conditions and then taken off again in order to protect the patient and the wearer from infection. This has an effect on the physical workload. More than two thirds rated this form of workload with the maximum rating, stating that it had become considerably worse. More than 20% reported a moderate degree of deterioration and the other respondents (10%) reported only a slight deterioration.

The psychological workload has also undergone changes for the worse. Almost 60% reported a severe negative change, over 30% a moderate degree of deterioration and almost 10% a low negative impact. The impact was not considered as extreme as for the physical workload, but there is still a clear impact in this regard. According to the respondents, the reason for the impact not being as intense was that support of the treatment process, which unfortunately often involves severe symptoms and death of the patients, follows set routines.

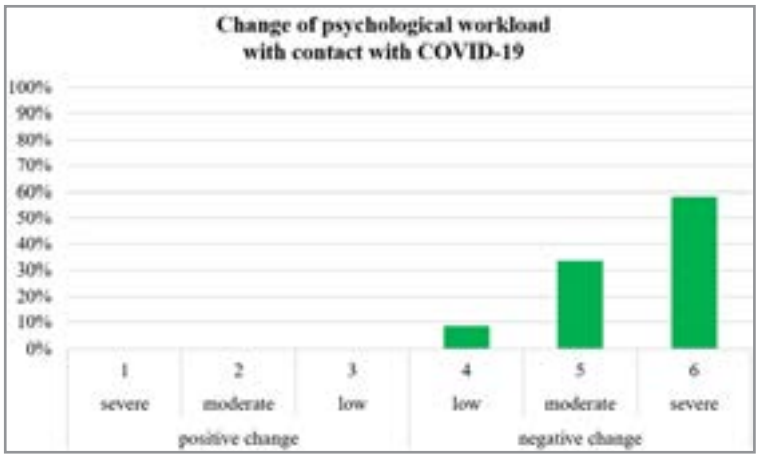

Figure 9: Change in the psychological workload of those with contact with COVID-19 patients (n = 12; source: author's own depiction)

This does not mean that the clinic staff are not affected by what the patients and families go through. This is also shown in the figure above – the impact is very apparent, and it also explains why the job is becoming considerably less appealing for the workforce as a result.

When it comes to the workload of the overall clinic staff, things are slightly more nuanced. Depending on the area, for example in administration or financial reporting, the impact has less importance. The negative impact on the overall clinic staff is still clear, but not as extreme as for those who have contact with COVID-19 patients. More than 10% of respondents report a severely negative influence, 50% a moderate deterioration and 30% just a slight deterioration.

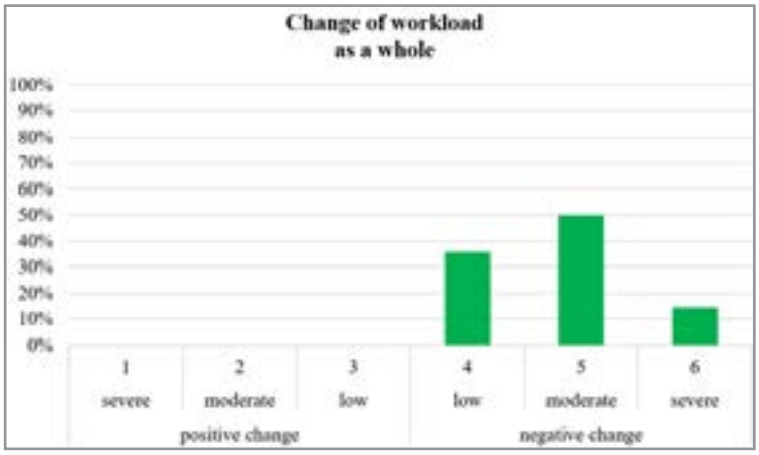

Figure 10: Change in workload in the facility as a whole (n = 14; source: author's own depiction)

Things are also nuanced in terms of the overall labour utilization.

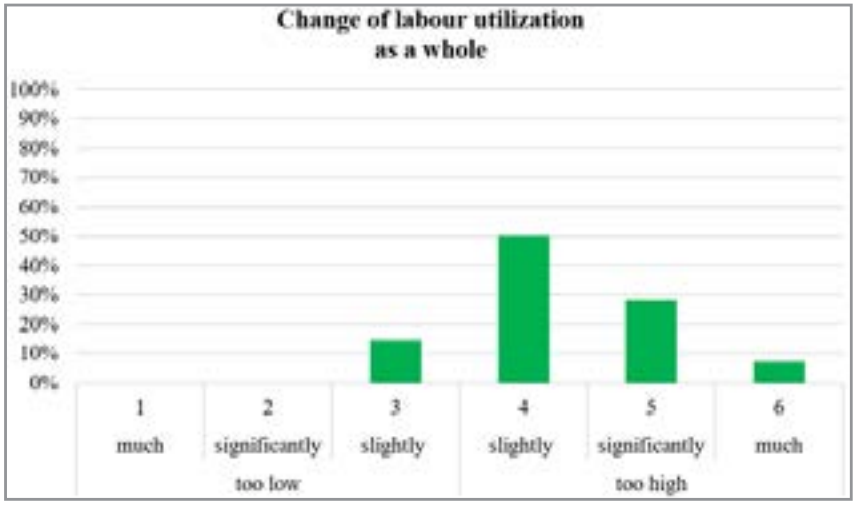

Figure 11: Change in labour utilization in the facility as a whole (n = 14; source: author's own depiction)

These nuances are often down to the type of facility in question. There are focused facilities, for example, which concentrate on psychological/psychosomatic cases. While these facilities are also experiencing additional difficulties due to the pandemic, such as preventive measures, increase in sick leave and adjustments made in response to new long-term/temporary state regulations, they do not provide care for COVID-19 patients and any patients found to have specific coronavirus symptoms are discharged from the facility immediately. Accordingly, there were some facilities that reported that their labour utilization during the pandemic had decreased and that they suddenly had more time for topics such as digitalisation. Over 10% of the facilities had a slightly lower labour utilization overall. Half of the facilities reported only slightly more changes across all departments, almost 30% reported excess labour utilization and almost 10% gave the maximum rating, 'labour utilization much too high', for their own facility during the pandemic.

Shortcomings & Potential for mprovement

As the situation has (further) worsened, the facilities require more support. From the clinics' point of view, this concerns both material and personnel.

Many facilities, for example, would like to have more modern technical equipment and better maintenance. A lot of the technical equipment used for examinations and treatment uses outdated technology. This could be rectified by means of flat-rate payments per patient or specific funding pools. Furthermore, stocks of medical supplies were too low and sufficient replenishments were not available on the market. Simple supplies such as protective masks, protective gloves and body bags quickly became unavailable. These goods, mainly produced in Asia where they were also needed, had long delivery times, which made infection control considerably more difficult at the start of the pandemic. Better strategic preparation is required on the part of government bodies in the form of centralised guidelines.

In addition to the backlog in investment and the shortage in safety supplies, the personnel situation poses a major problem in the clinics. It is not primarily about higher pay for employees. The employees often appear very satisfied with their wages, combined with the many overtime and flexibility premiums. Criticism instead tends to be aimed at the lack of equality between the facilities in terms of how workers are categorised. There are major wage differences depending on which facility an employee works at. It is therefore a harmonisation of tariff structures that is being demanded.

The extensive documentation requirements are another obstacle with regard to the attractiveness of the job. The time needed for documentation is much too high, leaving less time available for valuable work supporting and treating patients. The area of nursing care, which was already understaffed in the past, has been made even less appealing by COVID-19. Because of the high level of sick leave, even greater flexibility is required, more protective measures are needed to prevent infection from spreading, and mandatory vaccinations have caused many nursing staff to leave the profession. Compensation from the training market is not possible, as the low appeal prevents any growth in the number of skilled workers. The number of people in training for the coming years will not be sufficient to cover needs in any case. The only remaining option is to recruit nursing staff from abroad. The bureaucracy and strict requirements regarding recognition of training qualifications give rise to latency times, with workers often only being available after several years have passed.

Future doctors also criticise the quality of the training system in the facilities. Because of the personnel situation and the lack of time, they often feel undertrained for their work in the respective specialist departments. The training provided for apprentices fares somewhat better in the ratings. Doctors having too much to accomplish in the limited time of a workday and the large number of vacant (assistant) positions reflect the shortcomings in the appeal among medical staff. COVID-19 has only strengthened this phenomenon. Routine procedures are given priority over one-to-one care owing to time constraints, which is not helpful to staff (and at societal level, to patients). The key demands of the nursing and medical staff are therefore a reduction in bureaucracy, more workers to cover requirements including reserve capacity and more time for the continuous training system.

New Challenges During the Pandemic

During the coronavirus pandemic, a number of new task areas arose, which the clinics responded to with emergency measures, some of which were mandated by the state. For example, the stricter requirements for infection control gave rise to more demanding work conditions. Constant new rules regarding stricter or reduced visiting times, planned events being cancelled, safety services being implemented/expanded, hygiene regulations being adjusted constantly, masks, disinfection and material shortages (for consumable goods), for example, made it necessary to introduce a crisis management team/task force to respond to the changes on a day-to-day basis. It is clear that the clinics are highly responsive in this regard.

To address the shortage of skilled workers and the loss of appeal caused by COVID-19, creative ideas are called for. For the existing workforce, it is vital to promote a sense of cohesion and team spirit in addition to the usual financial possibilities. Treating employees to drinks or other refreshments has a positive effect, as this represents tangible recognition and compensation for the increased workload. The possibilities for recruiting new personnel have already been mentioned. The labour market including temporary work is largely depleted and finding foreign skilled workers requires a great deal of patience. Another option is to use marketing campaigns to strengthen the employer brand. Digital media presents very obvious potential here. People applying for jobs want binding measures, concrete commitments regarding what will change in this sector in the future. Advertising alone will not generate the desired attention. The facilities seem to have their hands tied here. Budgets are limited and the sector's reputation suffers.

Conclusions for the Health Sciences

For the specialist area of public health/health sciences, there are certain conclusions that can be drawn. The situation of shortages in the clinics, which has been known about for many years, was not taken seriously enough in the past. In many ways, this pandemic has served to draw attention to existing issues, and the loss of staff shows that too little is being done for these facilities and action has been needed for some time. Policymakers are now being requested to solve the causes of these problems.

In material terms, many facilities have an investment backlog, and this should be addressed directly by funding pools and indirectly by flat-rate payments per patient. In the case of personnel, job analysis and organisation should be used to improve working and learning processes and staff vacancies need to be filled and further boosted by additional measures. Examples of additional measures include reducing bureaucracy, harmonising tariffs and supporting the immigration/integration of personnel from abroad. In general terms, the crisis mode, i.e. the symptomatic processing of topics from one crisis to the next, should be avoided in future. Strategic preparation for the next pandemics is needed, as otherwise society will once again find itself caught off guard and unprepared. Policymakers displayed a reluctance to make changes prior to the beginning of the pandemic and a clear change is needed from being 'reactive' to being 'proactive' – i.e. to come up with action-based solutions in preparation for the next pandemic. What is needed to make this possible and when will it be implemented? This change in mindset calls for stocking up on supplies with a view to infection control, with well-organised, stable supply chains, available and up-to-date equipment in the facilities including emergency reserves and well-trained personnel with free reserve capacities.

These requirements will be hard to implement in the short term because of the extensive backlog, but a start needs to be made. It is also important to not restrict plans to the current pandemic. Work needs to be done to identify what might await us in future. Another important task is to make the general public aware that, in addition to the basic requirements mentioned above, even more recruitment is needed and additional immigration will be necessary in order to have a sufficiently large pool of personnel. It will otherwise not be possible to retain today's levels of prosperity owing to demographic change. It is not possible to achieve cost neutrality through organisational measures alone. In addition to vaccinations (a great deal has been done here from a 'proactive' perspective), additional investments are needed for devices/equipment, more personnel working under better conditions, and strategic pandemic preparation. The shortages have been identified – we now need to tackle them.

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