

Background Paper

Health care of non-COVID-19 patients in times of the coronavirus

Key messages

This paper examines the health care situation of non-COVID-19 patients in times of the coronavirus pandemic. Looking at the health care of people with diabetes and of those dependent on care, and at the duties of the public health authorities as examples, it presents preliminary descriptive findings on the utilisation and the provision of care. In summary, the following is established:

- Current evidence indicates a decline in the utilisation of disease management programs by people with diabetes. Among children and adolescents with type 1 diabetes, the number of cases of metabolic crises with ketoacidosis has doubled.
- In nursing care, the findings in all care settings indicate a lack of personal protective material, a lack of staff, insufficient patient-centred care processes and health risks resulting from social isolation measures and psychological stresses on staff. In home care, there is also evidence that family carers are facing significant additional burdens.
- Despite the enormous workload in infection prevention, the employees in the public health services were able to additionally complete the bulk of their mandatory tasks, which was only made possible by employing additional staff members. However, they were unable to carry out all of their monitoring tasks, such as school entry health examinations.

This paper aims at political decision-makers at the communal, state and federal level, healthcare institutions, the scientific community and interested citizens.

Version 01, published on 10 September 2020

Background

In an effort to contain the COVID-19 pandemic and pool resources to identify and provide care to patients infected with COVID-19, health care for non-COVID-19 patients was restricted in the early stage of the pandemic. For example, as part of the derogations related to the pandemic, the Federal Joint Committee suspended the documentation requirement for disease management programs (DMP) and patients' obligation to attend recommended training from the first to the third quarter of 2020 (1). Furthermore, in order to ensure that patients infected with COVID-19 received the care they need, a large number of resources for intensive medicine and also for work on the regular wards was provided (2). Nevertheless, this reorganisation resulted in a series of difficulties in the provision of care for patients with chronic and acute illnesses. Among other things, there was a lack of resources for the initial treatment of heart attacks (3) and on stroke units (4). In addition, it is safe to assume that people who did not become infected with COVID-19 minimised their utilisation of health services for fear of becoming infected and, for example, decided to forego preventive measures such as check-ups and elective as well as urgent treatments (5). A study that examined the utilisation of care in an A+E unit in Munich during the pandemic showed a decline in the number of patients (6). Trends towards lower patient numbers were also observed in the diagnosis and treatment of chronically ill patients, for example, in primary cancer diagnoses (7) and in the DMP of outpatient medical care (8).

However, other areas also appear to have been significantly affected by the changes and restrictions in health care resulting from the COVID-19 pandemic. These include, for example, nursing care and therapeutic care, and the responsibilities of the publicly funded health care.

To be able to recognise and counteract potential risks and health hazards of the reported care situation in a timely manner, it is important to describe and simultaneously monitor the changes in health care.

Aim

This paper examines the care situation of non-COVID-19 patients since the start of the pandemic. The situation may be characterised by a variety of aspects, such as changes in the availability of care providers, decisions taken by non-COVID-19 patients concerning the utilisation of care, or also possible consequences of the reorganisation of care. In this context, it can be assumed that the conditions evolved over time and also exhibited regional variations.

This paper focuses particularly on the qualitative and quantitative descriptive observation of processes, but also on patient-relevant outcomes. It initially looks at three examples: the health care of chronically ill patients using diabetes as an example, the health care of people requiring nursing care and the public health services.

The aim is to acquire knowledge on the utilisation and provision of care and on potentially resulting health consequences that have occurred within the scope of changes in health care during the pandemic. It is designed to provide basic information for a more in-depth debate.

Methods

This background paper offers a brief overview of the following three areas: the health care of chronically ill patients using diabetes as an example, the health care of people requiring nursing care and the publicly funded health care. In July and August 2020, we carried out a first exploratory analysis of the care situation based on publicly available health care data and initial findings from the literature. This paper presents research-based findings from previous crisis situations and preliminary results from national and international observations in times of the COVID-19 pandemic.

Results

Example 1: Health care of chronically ill patients as exemplified by diabetes

Studies from previous crisis situations have yielded varying results. A review summarises the results of studies conducted after natural disasters, such as Hurricane Sandy and Hurricane Katrina and the earthquake in Japan (9). While some of the studies found no unfavourable health outcomes, others reported restrictions in medical care (medication, health screening), deteriorations in metabolic control and increases in diabetes-related complications such as foot ulcers and cardiac events.

Preliminary international studies on the consequences of the COVID-19 pandemic originate, among others, from Great Britain and India. Lipscomb et al. examined the documentation of newly diagnosed diabetic foot ulcers in the region around Brighton. In April 2020 they found a decrease exceeding two standard deviations compared to the mean of the preceding two years of 48 new ulcers per months, and a 52 % decrease compared with April 2019 (10). Follow-on investigations will show whether fewer foot ulcers did, in fact, occur, possibly due to the reduced physical activity of people with diabetes, or whether patients with foot ulcers avoided visiting their doctor, thus resulting in a delay in increased numbers of severe foot ulceration due to deferred treatment, and

whether the risk of amputation is increased (10). Ghosal et al. modelled the effects of the pandemic lockdown on metabolic control and the resulting risks for co-morbidities associated with diabetes in India (11). The prediction showed a significant decline in metabolic control and a significant increase in risks, including heart attack (0.9 % increase), stroke (0.5 % increase) and amputations (10.4 % increase). In view of the differences between the healthcare systems, as well as varying courses of the infection process, we must question to what extent these results can be transferred to Germany.

Data for Germany are currently limited. An analysis of the German Diabetes Prospective Follow-up Registry (DPV) for children and adolescents with type 1 diabetes showed that the disease presented with metabolic ketoacidosis (uncontrolled, life-threatening hyperglycaemic state) in nearly twice as many children during the pandemic compared with the same months in the previous two years. This may have been due to a decrease in the provision of health services, a reduced utilisation of health care for fear of becoming infected, or complex psychosocial factors within the families (12). Early preliminary evaluations of the data of the disease management program (DMP) for type 2 diabetes in the North-Rhine region showed a marked decline in the number of DMP participants since the start of the pandemic compared with the corresponding months of the previous year 2019. There was a decline of around 5 % in February and March 2020 and of 20 % to 40 % from April to June (e.g., around 190,000 patients in June 2019, around 120,000 patients in June 2020). Patients with type 2 diabetes who had a check-up in the second quarter of 2020 were older, had been registered in the DMP for longer, more regularly took part in the DMP, were generally female and more strongly affected by co-morbidities than patients who did not have a check-up in the second quarter of 2020. They also achieved their treatment goals earlier in the first quarter of 2020 than patients without a check-up in the second quarter. The observations suggest that a positively selected, particularly DMP-adherent sub-group of DMP patients attended their regular check-ups during the ongoing COVID-19 pandemic (these results stem from as yet unpublished evaluations of the ZI). This could mean that particularly patients with a generally low adherence may have fallen through the health care net and therefore received a significantly inadequate level of care. Further analysis are warranted to identify vulnerable groups and adapt care processes.

Example 2: Health care of people requiring nursing care

In all care settings, such as residential care, home care and hospital care, nursing care is a major contributor to managing the COVID-19 pandemic; however, it is also affected by the effects of the pandemic. At the same time, its relevance for the healthcare system as a whole became clearer than ever before. The situation was already tense before the pandemic. Particularly precarious topics

included, for example, equipment for personnel, qualification, recognition and pay, establishing patient-centred care processes as well as expertise in nursing science. These topics have become even more relevant in the context of the pandemic (13–15). Persons who depend on care are particularly vulnerable to the COVID-19 pandemic (16, 17). In this regard, we must differentiate between burdens on healthcare professionals, patients and their relatives. To date, however, there are barely any studies available that would allow us to assess how the pandemic has affected nursing care in Germany.

A survey revealed that home care services and nursing homes are well aware of the high mortality risk associated with COVID-19 for their patients and residents (18). Only few facilities are, in fact, affected by COVID-19 outbreaks; however, when they are, several people are usually affected (18). Care facilities faced considerable structural challenges which also jeopardised the provision of care to non-COVID-19 patients, particularly until May 2020. These included, in particular, the lack of personal protective equipment (19) and disinfectants for the workforce, a delay in the availability of test results of patients or nursing home residents and employees, as well as a very high level of absenteeism due to illness (15, 18, 20). The temporary strict social isolation measures imposed on all nursing home residents, which equally affected family members, therapists, services such as podiatry, but partly also contact to physicians, were critically discussed against the backdrop of potential damages that may result for the residents (14, 17, 18). In August 2020 the German Society for Nursing Science submitted an S1 Guideline on “Social participation and quality of life in inpatient care for the elderly under the conditions of the COVID-19 pandemic”, which gives recommendations on how to cope with this situation (21). However, the implementation of the infection control measures caused significant organisational challenges for personnel in care facilities. They also caused psychological stress, such as worrying about the spreading of infection among employees and residents (20). The high infection rates among staff members in care facilities, which in some cases were fatal, further highlighted this concern (16).

In home care, there are indications of potentially unstable or vulnerable care situations. This conclusion is derived on the basis of the decline in utilisation of non-cash benefits in home care services, the shut-down of semi-residential services, the reduced support by family members and friends, the reduced contact to primary care physicians and the loss of foreign domestic workers living in patients’ households (18, 22). Also here, there are reports of a lack of personal protective equipment and disinfectants, an inadequate consideration in distribution plans and crisis scenarios, as well as the concern about employees and patients becoming infected (15, 20). A further aspect is

the additional burden experienced by family carers, for example due to the increased difficulty to reconcile one's job with providing the necessary care during the pandemic, but also due to increased social isolation (22–25).

A similar trend is observed in inpatient care in hospitals. Here too, there are reports about a lack of personal protective equipment and a lack of nursing staff, but also about the burden on employees due to internal transfers to new work areas and, to some extent, short-time work or changes in work hours (26–28). A review demonstrated a significant burden on nursing staff due to stress, but also an increased incidence of symptoms of depression and anxiety (29). Three surveys among the health care professions also indicate that nurses are particularly exposed to stress during the COVID-19 pandemic (28, 30, 31).

Example 3: Public Health authorities

For the public health authorities there are few studies available that examine the care situation or task fulfilment in times of crisis. In papers relating to the management of the influenza A/H1N1 pandemic by the public health workforce, the authors maintain that important topics and tasks had to be deferred for months in order to establish and implement the surveillance of new infections with the hitherto unknown influenza virus and to analyse the results thereof, take infection control measures, cover the high consultation requirement as well as organise and implement the vaccination campaign (32, 33). We expect to see similar observations in a post-hoc analysis of the COVID-19 pandemic.

Even in “normal” times, the public health services frequently reach their limits. The increased workload caused by the COVID-19 pandemic was and is barely manageable without additional resources (fee-based physicians, support from other administrative areas, medical students, Federal Armed Forces). The first major outbreaks in Heinsberg and Tirschenreuth caused the crisis unit to be activated in all public health authorities in Germany and the entire workforce to be deployed in infection control (34–40). Even before nursery schools and schools were closed and contact restrictions were imposed at the end of March, which de facto made it impossible for the public health services to perform their tasks in the conventional sense, the public health workforce had already suspended some of its mandatory tasks in more severely affected municipalities and districts in early March. Among many others, this included school entry health examinations, dental health screenings and prophylactic measures, outreach work for people in psychosocial stress situations by psychiatric social services, and all expert assessments. We can only speculate about the impact of the

lack of school entry health examinations. However, it is safe to assume that some children with latent developmental disorders, visual and hearing disorders as well as gross and fine motor disorders will attend school. Deferred assessments can affect people's capacity for work, but also the need for early intervention or the assumption of treatment costs in accordance with the German Asylum Seekers' Benefits Act (AsylbLG).

Taking Hamburg as an example, the following changes in the provision of care compared with the same period in 2019 were established (34):

In the first half of 2020,

- there were roughly 150 fewer cases of assistance for children and adolescents with developmental disorders, mental health problems, psychological and psychosomatic disorders or imminent or manifest mental, psychological or multiple disabilities, compared with the first half of 2019 (3,344 to 3,493).
- there were approx. 600 fewer cases of assistance for mentally ill adults, mentally disabled adults and their relatives, compared with the same period in the previous year (5,777 to 6,391).
- the Central Committal Service committed nearly an additional 100 persons in accordance with the Hamburg Law on Help and Protective Measures for Mental Illnesses (HamburgPsychKG) (2,296 to 2,187), whereby the number of committals has been on the rise in Hamburg for many years.
- 54 % of school entry health examinations were carried out, compared with 77 % in the previous year.
- approx. 30 % of the school dental examinations and dental examinations pursuant to the Hamburg Education Act (HmbSG) and the Hamburg Childcare Act (KiBeG) were carried out in comparison with the first half of 2019.
- roughly twice as many infection control cases were counted compared with the same period in the previous year (39,555 to 20,419).

To some extent, the numbers only barely differ from those in the previous year, but the number of infection control cases has doubled.

In accordance with the recommendation of the German Federal Government, five containment scouts for every 20,000 inhabitants were additionally employed. With 1,845,017 inhabitants, this

corresponds to nearly 460 additional employees, whereby it must be noted that these employees are not trained in medicine, epidemiology or health sciences. Students in particular proved helpful; they were recruited both by the Medis4ÖGD project of the Federal Association of Physicians of German Public Health Departments (35) and by the Robert Koch Institute. The support of colleagues from other administrative areas and primarily from the Health Insurance Medical Service (MDK) proved helpful. In addition, many colleagues from other areas of the public health workforce were transferred to work in infection control at the start of the pandemic.

There is yet no data available, for example, on the number of official medical reports, on outreach work for people in psychosocial stress situations, etc. According to preliminary information from different public health authorities, these tasks were suspended at least from March to May 2020. In particular with regard to outreach work, it must be considered that other institutions within and outside the administration were also not able to work at all, or only to a very limited extent (e.g., help for the homeless, food banks, etc.).

To sum up, it can be said that, despite the large number of infection control cases, the communal public health workforce additionally completed the bulk of their mandatory tasks. This was and will, in the future, only be possible by employing additional staff members and by the employees of the public health services taking on extra work. More detailed investigations and analyses are needed to examine the potential consequences of the limited school entry health examinations and support of vulnerable groups due to COVID-19.

Conclusion and recommendations

The first review indicates problematic health care situations and resulting health consequences, caused or exacerbated by the infection control measures. Further investigations are needed in order to verify and, above all, substantiate this hypothesis. Subsequent papers will focus more on specific questions. The following questions will be assessed in particular:

- Which group of people with chronic illnesses is particularly affected? What processes have changed? Can we already predict short- and medium-term effects?
- What health-threatening stresses are present in nursing care? What starting points can be identified to ensure, in particular, communal nursing care in pandemic and other special demand situations and to support employees, patients and relatives in a targeted manner, e.g., with community health nurses, advanced practice nurses and/or by promoting home

care concepts?

- To what extent were public health services (for example, outreach work for people with psychosocial stress) offered during the COVID-19 pandemic? What approaches to continuously maintain these care concepts even in times of crisis can be derived from this?
- How does the (frequently very general) definition of risk groups (e.g., over 60s) cause people to not seek the care they need, for example, out of fear of becoming infected? How can affected persons be supported in accessing established care routine during a pandemic?
- What consequences can be derived for health services research and for practical health care delivery?

References

1. Gemeinsamer Bundesausschuss, Hrsg. Beschluss des Gemeinsamen Bundesausschusses über die 19. Änderung der DMP-Anforderungen-Richtlinie (DMP-A-RL): Ausnahmeregelungen für Schulungen und Dokumentationen aufgrund der COVID-19-Pandemie 2020.
2. Härter M, Bremer D, Scherer M, Knesebeck O von dem, Koch-Gromus U. Impact of COVID-19-pandemic on Clinical Care, Work Flows and Staff at a University Hospital: Results of an Interview-study at the UKE. Gesundheitswesen 2020. doi: 10.1055/a-1226-6828.
3. Gitt AK, Karcher AK, Zahn R, Zeymer U. Collateral damage of COVID-19-lockdown in Germany: decline of NSTEMI-ACS admissions. Clin Res Cardiol 2020. doi: 10.1007/s00392-020-01705-x.
4. Bersano A, Kraemer M, Touzé E, Weber R, Alamowitch S, Sibon I et al. Stroke care during the COVID-19 pandemic: experience from three large European countries. Eur J Neurol 2020. doi: 10.1111/ene.14375.
5. Ansmann L, Hörold M, Tempes J, Messer M, Uthoff SAK, Apfelbacher C et al. Wie gelingen gute Entscheidungen zur Inanspruchnahme von Gesundheitsversorgung für Nicht-Covid-19 Erkrankte?: Die Verantwortung der Gesundheitsorganisationen in der Pandemie [Hintergrundpapier]; 2020. Verfügbar unter: <https://www.public-health-covid19.de/images/2020/Ergebnisse/Hintergrund-HL-Zugang-V1.pdf>.
6. Tschaiakowsky T, Becker von Rose A, Consalvo S, Pflüger P, Barthel P, Spinner CD et al. Patientenzahlen im Rahmen der COVID-19-Pandemie in einer zentralen Notaufnahme. Notfall

- Rettungsmed 2020. doi: 10.1007/s10049-020-00757-w.
7. Weisel KC, Morgner-Miehlke A, Petersen C, Fiedler W, Block A, Schafhausen P et al. Implications of SARS-CoV-2 Infection and COVID-19 Crisis on Clinical Cancer Care: Report of the University Cancer Center Hamburg. *Oncol Res Treat* 2020; 43(6):307–13. doi: 10.1159/000508272.
 8. Beier M. Wie Hausärzte die Corona-Pandemie meistern; 2020 [Stand: 23.08.2020]. Verfügbar unter: <https://www.hausaerzte-bayern.de/index.php/berufspolitik/berufspolitische-informationen/rundschreiben/4813-wie-hausaerzte-die-corona-pandemie-meistern.html>.
 9. Allweiss P. Diabetes and Disasters: Recent Studies and Resources for Preparedness. *Current Diabetes Reports* 2019; 19(11):131. doi: 10.1007/s11892-019-1258-7.
 10. Lipscomb D, Smith AS, Adamson S, Rezazadeh EM. Diabetic foot ulceration in COVID-19 lockdown: cause for concern or unexpected benefit? *Diabet Med* 2020; 37(8):1409–10. doi: 10.1111/dme.14340.
 11. Ghosal S, Sinha B, Majumder M, Misra A. Estimation of effects of nationwide lockdown for containing coronavirus infection on worsening of glycosylated haemoglobin and increase in diabetes-related complications: A simulation model using multivariate regression analysis. *Diabetes Metab Syndr* 2020; 14(4):319–23. doi: 10.1016/j.dsx.2020.03.014.
 12. Kamrath C, Mönkemöller K, Biester T, Rohrer T, Warncke K, Hammersen J et al. Ketoacidosis in Children and Adolescents With Newly Diagnosed Type 1 Diabetes During the COVID-19 Pandemic in Germany. *JAMA* 2020. doi: 10.1001/jama.2020.13445.
 13. Dichter M., Kocks A., Meyer G., Stepan A. Pflege ist systemrelevant - nicht nur in Corona-Zeiten: Gemeinsame Stellungnahme zum Internationalen Jahr der Pflegenden und Hebammen vor dem Hintergrund der Corona-Pandemie in Deutschland; 2020.
 14. Dichter MN, Sander M, Seismann-Petersen S, Köpke S. COVID-19: it is time to balance infection management and person-centered care to maintain mental health of people living in German nursing homes. *Int Psychogeriatr* 2020:1–4. doi: 10.1017/S1041610220000897.
 15. Hunlede D, Thole C, Wehrstedt N, Wiedermann A. Einbindung von Pflegefachwissen im Rahmen der Pandemie: Pflegerische Selbstverwaltungen sollten dringend Teil der Krisenstäbe sein. *Pflegewissenschaft* 2020:10–4.
 16. o. V. Täglicher Lagebericht des RKI zur Coronavirus-Krankheit-2019 (COVID-19): COVID-19 Lagebericht 15.08.2020; 2020 [Stand: 15.08.2020]. Verfügbar unter: https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Situationsberichte/2020-08-15-de.pdf.

17. o. V. Pflegebedürftige und Menschen mit Behinderungen zwischen Schutz und Selbstwirksamkeit in der Corona-Pandemie: 93. Gesundheitsministerkonferenz Sonderkonferenz am 18.06.2020 [Resolution]; 2020. Verfügbar unter: https://www.gmkonline.de/documents/top-32--resolution_pflegebeduerftige-zwischen-schutz-und-selbstwirksamkeit_1592483755.pdf.
18. Wolf-Ostermann, K., Rothgang H. Zur Situation der Langzeitpflege in Deutschland während der Corona-Pandemie: Ergebnisse einer Online-Befragung in Einrichtungen der (teil)stationären und ambulanten Langzeitpflege. Bremen: Bremen; 2020.
19. Küstner K. Streit um Engpässe bei Schutzkleidung; 2020 [Stand: 23.08.2020]. Verfügbar unter: <https://www.tagesschau.de/inland/masken-schutzkleidung-mangel-101.html>.
20. Hower KI, Pfortner T-K, Pfaff H. Pflegerische Versorgung in Zeiten von Corona - Drohender Systemkollaps oder normaler Wahnsinn?: Wissenschaftliche Studie zu Herausforderungen und Belastungen aus der Sichtweise von Führungskräften 2020 [Stand: 23.08.2020]. Verfügbar unter: http://www.imvr.de/uploads/Pflegerische_Versorgung_in_Zeiten_von_Corona_Ergebnisbericht.pdf.
21. Deutsche Gesellschaft für Pflegewissenschaft, Hrsg. S1 Leitlinie - Soziale Teilhabe und Lebensqualität in der stationären Altenhilfe unter den Bedingungen der COVID-19-Pandemie: Langfassung - AWMF Register-nummer 184 – 001 2020.
22. Köhler, K., Dreyer, J., Hochgraeber, I., Pinkert C. Gefährdet die Covid-19-Pandemie die Stabilität häuslicher Versorgung von pflegebedürftigen Menschen mit Demenz?: Eine Reflektion. Pflegewissenschaft 2020:87–9.
23. Eggert S, Teubner C, Budnik A, Gellert P, Kuhlmeier A. Pflegenden Angehörige in der Covid-19-Krise. Ergebnisse einer bundesweiten Befragung; 2020 [Stand: 23.08.2020]. Verfügbar unter: <https://www.zqp.de/wp-content/uploads/ZQP-Analyse-Angeh%C3%B6rigeCOVID19.pdf>.
24. Zimmermann M, Gorontzi F, Häussinger D, Kempchen U, Razum O, Segmüller T et al. Handlungsempfehlungen zum Schutz vor Infektionen und vor sozialer Isolation von Menschen mit Pflegebedürftigkeit und Teilhabebeeinträchtigungen in einer Exit-Strategie in interdisziplinärer Expertise 2020 [Stand: 23.08.2020]. Verfügbar unter: https://www.mags.nrw/sites/default/files/as-set/document/2020_4_30_erstellung_von_handlungsempfehlungen_0.pdf.
25. Seifler A, Schubert M, Petereit-Haack G, Horn, A., Kämpf D et al. Soziale Isolation als Sterblichkeits-risiko für ältere Menschen: Ergebnisse einer systematischen Literaturrecherche („Rapid Scoping Review“) ergänzt durch eine qualitative Erhebung [Hintergrundpapier]; 2020.

Verfügbar unter: https://www.public-health-covid19.de/images/2020/Ergebnisse/2020_05_18_fact_sheet_sozi-ale-isolation-als-mortalita_tsrisiko_1.pdf.

26. Rheindorf J, Blöcker J, Himmel C, Trost A. Wie erleben Pflegefachpersonen die Corona-Pandemie?: Sorgen und Zuversicht in der direkten Versorgung. *Pflege* 2020; 73(8):50–3. doi: 10.1007/s41906-020-0761-4.
27. Bergow A, Gaidys U. COVID-19 Pflege Studie: Erfahrungen von Pflegenden während der Pandemie - erste Teilergebnisse. *Pflegewissenschaft* 2020:33–6.
28. Kramer V, Papazova I, Thoma A, Kunz M, Falkai P, Schneider-Axmann T et al. Subjective burdens and perspectives of German healthcare workers during the COVID-19 pandemic. *Eur Arch Psychiatry Clin Neurosci* 2020. doi: 10.1007/s00406-020-01183-2.
29. Bohlken J, Schömig F, Lemke MR, Pumberger M, Riedel-Heller SG. COVID-19-Pandemie: Belastungen des medizinischen Personals. *Psychiatr Prax* 2020; 47(4):190–7. doi: 10.1055/a-1159-5551.
30. Skoda E-M, Teufel M, Stang A, Jöckel K-H, Junne F, Weismüller B et al. Psychological burdens of healthcare professionals in Germany during the acute phase of the COVID-19 pandemic: differences and similarities in the international context. *J Public Health (Oxf)* 2020. doi: 10.1093/pub-med/fdaa124.
31. Paffenholz P, Peine A, Hellmich M, Paffenholz SV, Martin L, Luedde M et al. Perception of the 2020 SARS-CoV-2 pandemic among medical professionals in Germany: results from a nationwide online survey. *Emerg Microbes Infect* 2020; 9(1):1590–9. doi: 10.1080/22221751.2020.1785951.
32. Bradt K, Schütz-Langermann A, Zeck G, Winkel I. Das Management der Influenza A/H1N1-Pandemie durch die Gesundheitsämter in Deutschland - Ergebnisse einer bundesweiten Befragung. *Gesundheitswesen* 2011; 73(11):722–9. doi: 10.1055/s-0031-1291292.
33. Bellinger O, Götsch U, Böddinghaus B, Kraus-Leonhäuser D, Gottschalk R. Management der Influenzapandemie auf kommunaler Ebene. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 2010; 53(12):1250–6. doi: 10.1007/s00103-010-1160-6.
34. Senat der Stadt Hamburg. Halbjahresbericht 2020, jährliches Berichtswesen für Schulbaumaßnahmen, Bericht über gewährte Sicherheitsleistungen für den Erhalt und die Weiterentwicklung der Hamburgischen Sportinfrastruktur sowie Bericht über übertragene Mittel aus den zentralen Ansätzen zur Bewältigung der COVID-19-Pandemie und neu geschaffene Stellen auf Basis von Artikel 9 Nummer 44 Haushaltsbeschluss: Mitteilung des Senats an die Bürgerschaft [Drucksache 22/1100]. Hamburg; 2020 [Stand: 24.08.2020]. Verfügbar unter: <https://www.buergerschaft-hamburg.de/Drucksache/22/1100>.

[hh.de/parldok/dokument/72216/halbjahresbericht_2020_jaehrliches_berichtswesen_fuer_schulbaumassnahmen_bericht_ueber_gewaehrte_sicherheitsleistungen_fuer_den_erhalt_und_die_weitere.pdf](https://www.hh.de/parldok/dokument/72216/halbjahresbericht_2020_jaehrliches_berichtswesen_fuer_schulbaumassnahmen_bericht_ueber_gewaehrte_sicherheitsleistungen_fuer_den_erhalt_und_die_weitere.pdf).

35. o.V. MEDIS4ÖGD. Verfügbar unter: <https://www.bvoegd.de/medis4oegd/>.

Authors, peer reviewers and contact persons

Main authors

Prof. Dr. Melanie Messer, Trier University, Faculty I, Nursing Science with focus on Clinical Nursing across the Lifespan, Trier

Prof.in Dr. Dagmar Starke, Akademie für Öffentliches Gesundheitswesen, Düsseldorf

Prof. Dr. Dr. Andrea Icks, Institute for Health Services Research and Health Economics, Centre for Health and Society, Medical Faculty, Heinrich-Heine University Düsseldorf

Further authors

Patrick Wagner, Rems-Murr-Kliniken gGmbH

Birte Bader, specialist in psychiatry and psychotherapy, public health specialist, Free and Hanseatic City of Hamburg, district office of Hamburg-Mitte

Dr. Thomas Bierbaum, German Network for Health Services Research (DNVF e.V.)

Prof. Dr. Thomas Fischer, Protestant University of Applied Sciences (ehs)

Prof. Dr. Wolfgang Hoffmann, Institute for Community Medicine / Dept. Epidemiology of Health Care and Community Health, University Medicine Greifswald

Prof. Dr. Jochen Schmitt, Center for Evidence-Based Healthcare (ZEGV), University Hospital of Carl Gustav Carus Dresden

Larissa Burggraf, Institute of General Practice, Friedrich Alexander University of Erlangen-Nuremberg

Peer reviewers

Prof. Dr. Eva Maria Bitzer, Public Health & Health Education, Freiburg University of Education

Prof. Dr. Kerstin Hämel, Faculty of Health Sciences, Bielefeld University

Prof. Dr. Olaf von dem Knesebeck, Institute of Medical Sociology, University Medical Center
Hamburg-Eppendorf

Conflict of interests

The authors state that there are no conflicts of interest.

Contact persons

Prof. Dr. Melanie Messer, messer@uni-trier.de

Prof. Dr. Dr. Andrea Icks, andrea.icks@uni-duesseldorf.de

Prof.in Dr. phil. Dagmar Starke, starke@akademie-oegw.de

Please cite as:

Messer M, Starke D, Wagner P, Bader B, Bierbaum T, Fischer T, Schmitt J, Hoffmann W, Burggraf L, Icks A, Health care of non-COVID-19 patients in times of the coronavirus. 2020, Bremen: Competence Network Public Health COVID-19.

Disclaimer: This paper was prepared within the framework of the Competence Network Public Health on COVID-19. The sole responsibility for the contents of this paper lies with the authors.

The Competence Network Public Health on COVID-19 is an ad-hoc initiative of more than 25 scientific societies and associations in the field of public health, which combine their methodological, epidemiological, statistical, social science and (population) medical expertise. Together we represent several thousand scientists from Germany, Austria and Switzerland.