SUPPORTED BY:

NUANCE

From Overload to Burnout. What Clinicians think.

HIMSS

From Overload to Burnout. What Clinicians think.

Contents

Foreword: Clinician burnout in the age of pandemics 03

1. Objective of the white paper 04

2. Key Findings 06

3. Clinician burnout is a familiar phenomenon worldwide 08

3.1. Prevalence of burnout 09

3.2. Factors driving work overload and burnout 12

3.3. Factors preventing work overload and burnout 17

4. The pandemic has affected clinicians‘ stress levels and workloads 20

5. What is the role of technology in improving working conditions? 24

5.1. Digital saviour: Technology “to reduce stress” and “cope with the tasks ahead” 25

5.1.1 AI-based documentation can improve working conditions 26

5.2. Technology is as good as its usability 27

Technology expert‘s view 29

Interview with Dr Simon Wallace, CCIO Nuance Healthcare

6. Concluding organisational and governmental action points for mitigating stress 33

7. Methodology 35

"The precious time clinicians have with patients is being eroded further by the requirements to enter data."

by Dr Charles Alessi,
Chief Clinical Officer,
HIMSS

Physician burnout in the age of pandemics

Health and care systems have been under considerable pressure since around 2015. The pressures of ageing, both in terms of populations and workforce multi-morbidity, and struggling to manage the increased personalisation of treatment guidelines has made for a pressurised and crowded consultation between clinicians and patients.

Then came COVID-19 in 2020, and all these issues have assumed even more prominence with the result now that clinician burnout is by far the greatest challenge in managing and preserving our workforce without whom it would prove to be impossible to improve the outcomes for the populations we serve.

As medicine in the 21st century becomes more personalised, the precious time clinicians have with patients is being eroded further by the requirements to enter data without which, the potential for other advances in technology will just not materialise as quickly.

Burnout is not inevitable

There are ways in which we can assist and support our workforce and do it more consistently and comprehensively. From organisational interventions around more systemised support, better work-life balance, improved mechanics of the clinician facing aspects of the electronic medical record (EMR), the adoption of clinical decision support – we can use the digital transformation that is now taking place globally at great speed, to help manage burnout. There is also great promise in the use of voice technologies to help the clinicians use the precious time they have with people to do what they do best, which is talk to people and assist them in the behavioural changes required, associated with improving outcomes. Making a computer keyboard a 'second line' tool for input is a dream many clinicians have had, and we are now seeing this is not only theoretical, but practically a reality.

The potential to have a contemporaneous transcription of the salient features associated with data input will liberate clinicians, as will the ability for them to access relevant treatment pathways using voice. This is nothing short of transformational and the journey has already started.

1

Objective of the white paper

This white paper 'From overload to burnout: What clinicians think' investigates a topic that has affected clinicians for a considerable time: burnout. Burnout amongst healthcare professionals around the globe has been on the rise for an extended period of time. According to an article in The Lancet published in July 2019 **"Physician burnout: a global crisis"**, burnout among physicians "has reached global epidemic levels". The article states that "80% of doctors in a British Medical Association 2019 survey were at high or very high risk of burnout, with junior doctors most at risk, followed by general practitioner partners."

The COVID-19 pandemic has only amplified the conditions leading to burnout. Its deplorable effects are not limited to the wellbeing of members of the healthcare profession, but also can affect patients' access to and the quality of healthcare. As a result, news report on **hundreds of doctors threaten to resign in France** and **thousands of frontline health workers in Australia** say their mental health is suffering, to just mention 2 of the surveyed countries. Recent **UK studies** found that burned out doctors and nurses are more likely to resign from their position, which potentially adds to their colleagues' workload and restricts patients' access to care due to staff shortage. Moreover, burnout also affects patients' safety and the overall quality of care since those nurses and doctors suffering from burnout can experience impaired attention, memory, and executive functions, which can result in medical errors.

The purpose of this HIMSS white paper, that was produced with the support of Nuance Communications, is to determine the prevalence of stress and burnout in healthcare professionals and the factors contributing to their buildup. Furthermore, it explores the extent to which COVID-19 pandemic has amplified those stress-inducing conditions and the role technology can play in improving working conditions, especially with regards to clinical documentation.

The research for this study was carried out among doctors and nurses, who we refer to as clinicians, in the form of an online survey with 416 participants and a qualitative telephone survey including 27 respondents. Research was conducted in Australia and nine European countries; UK, Germany, France, The Netherlands, Belgium, Sweden, Finland, Norway and Denmark.

HIMSS and Nuance Communications wishes to create a deeper awareness for the causes that can eventually lead to burnout and to support healthcare organisations mitigating the risks for their occurrence in the first place. Based

on the findings of the research, HIMSS offers recommendations on measures to take on an organisational and a governmental level to prevent burnout in the course of the white paper. Only a collaborative stakeholder effort will bring about the required changes so that medicine can be practiced in a "healthier" way than is the case currently.

This white paper is also a gesture of gratitude to all healthcare workers. They have relentlessly given their utmost to ensure their patients are well cared for, which has been even more challenging during this COVID-19 pandemic. That nurses and doctors took the time to participate in this study is testament to the fact that the topic of overload and burnout is close to their hearts and needs to be addressed. This white paper has given them an opportunity to make their voices heard – to share their thoughts, in the hope of bringing about some of the suggested changes.

2

Key Findings

The main findings of this white paper include:

- Stress, work overload and burnout among clinicians are global phenomena. However, the extent to which they prevail in each country varies as well as their causes, ranging from workforce issues like staff shortages, payment models or different levels of bureaucracy.

- The results of the online survey showed that 97% of participating doctors and 99% of nurses confirmed, that at least at some point in their work life, did they feel burned out. All respondents were familiar with stress, work overload and burnout in work life.

- There is scientific evidence that working more than 40 hours per week is a contributing factor to feeling burned out. A large share of participating doctors in the online survey stated to be working in excess of 40 hours per week.

- Burnout is not a new phenomenon, but the COVID-19 pandemic has amplified it.

- HIMSS research identified key factors that are pivotal in establishing the quality of clinicians' work life. These include, among others, the workload, the predictability of shifts, the efficiency of processes including documentation, the support of staff and the leadership style. Depending on how these aspects are handled, the management of a healthcare organisation can create a less stress-prone or a stress-conducive work environment.

- Many participants of the quantitative and qualitative surveys carried out for this study found the extent to which they have to perform clinical documentation as a burden and stress-inducing factor. About one-third of participants in the online survey thought that AI-powered speech recognition technology could help relieving this burden.

- COVID-19 pandemic has added to the feeling of stress and burnout among clinicians across all surveyed countries. The online survey demonstrated that 88% of clinicians answered the question 'Has

COVID-19 pandemic exacerbated the feeling of exhaustion and overload?' with 'yes'.

- HIMSS' research findings suggest that technology can both help alleviate the symptoms that lead to stress and ultimately burnout and also contribute to the latter. It comes down to the usability of technology and how frictionless it can be incorporated into existing workflows if it is perceived as a stress-inducing or a stress-reducing factor.

- Respondents thought that technology can particularly contribute to improving patient outcomes by increasing patient safety, enhancing operational efficiencies and increasing insights into the causes and effects of diseases.

- Burnout is not inevitable; it requires some corrective measures be put into place to avoid stress building up to such a degree, that it turns into burnout. Clinicians participating in the HIMSS research came up with a host of suggestions as to how this might be attained. The effective implementation of those proposals can take place either on an organisational or a governmental level. The former focuses particularly on how to effectively introduce technology, whereas the proposals on a governmental / healthcare system level also considers raising the profile of the nursing profession and how to better align technology with patient care, among others.

3

Clinician burnout is a familiar phenomenon worldwide

"Overload can be defined as an excessive amount of clinical work that is undertaken by healthcare professionals in a defined period of time. [...] We start developing symptoms of burnout due to a persistent exposure to that excessive workload over time. Both physical and psychological strengths are challenged in such a way that our in-built resilience is taken beyond its limits and we are just not able to cope. [...] In essence, there are several contributing factors to burnout, but the key ones are the enormous work pressure and the fears over patient safety; complaints voiced by patients only add to this."[1]

How does clinician overload start? When patients come to see a doctor, they want to discuss a certain condition or a therapy regime with the clinician. The number of comorbidities will add another layer of complexity to the discussion. For a doctor, these are just some of the issues to consider during the 10 to 15 minutes a typical consultation lasts, sometimes even less (see Figure 1). Balancing different demands is challenging. Depending on how many patients a doctor sees per day and the support in place, conditions can develop into clinician burnout.

This HIMSS white paper uses the following definition of burnout as per the International Classification of Diseases ICD-11.

"Burn-out is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions:

- **feelings of energy depletion or exhaustion**
- **increased mental distance from one's job, or feelings of negativism or cynicism related to one's job, and**
- **reduced professional efficacy**

Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life."

[1] Dr Simon Wallace, CCIO, Nuance Communications

Figure 1: **Clinicians must tackle multiple challenges within a single consultation**

3.1

Prevalence of burnout

"Healthcare systems around the world are experiencing the pressures of burnout. In summary, there are degrees of stress and burnout in all countries but the reasons for it differ and it is important to acknowledge those. However, whichever country you are in, COVID has added to that; but COVID aside, the stress and the burnout are real and will continue to be real in countries throughout the world."[2]

"There is a constant need to rush, plus the piling up of unfinished work, which is disturbing and worrying."[3]

[2] Dr Simon Wallace, CCIO, Nuance Communications

[3] Leena Setälä, Sustainability Director at Hospital District of Southwestern Finland, Development Director at Health Campus Turku

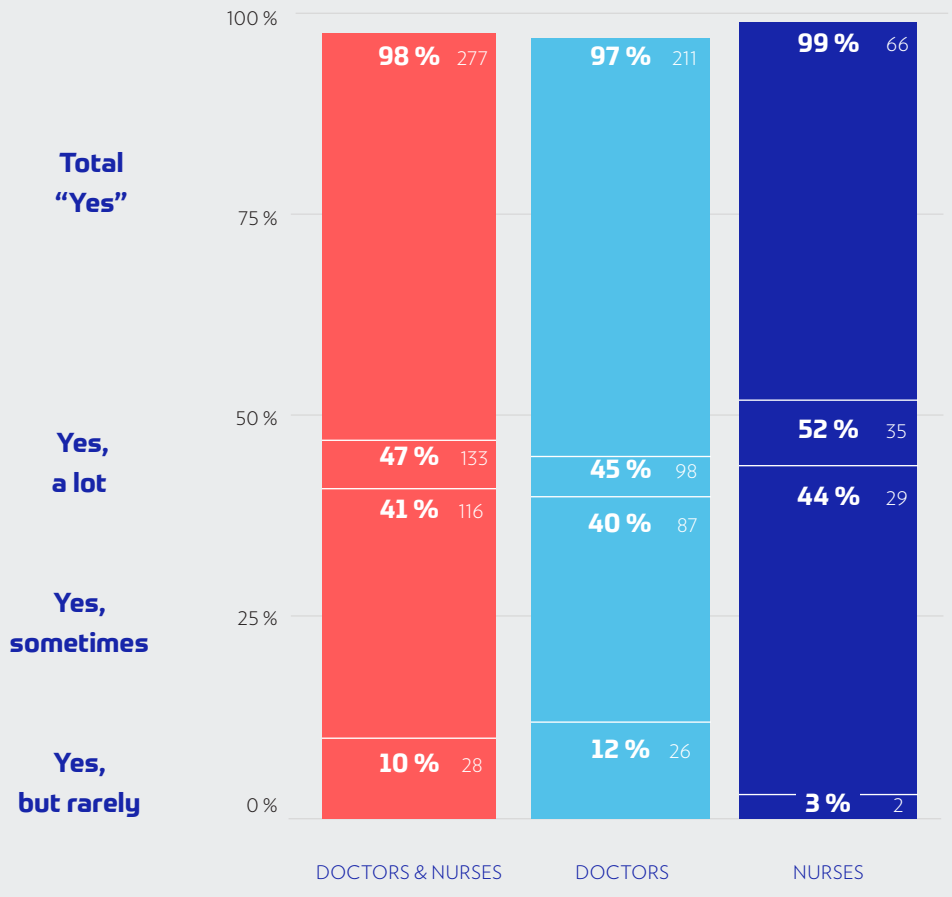
Stress, work overload and burnout are phenomena that all respondents are familiar with, regardless of their role within a healthcare organisation nor the surveyed country. The results of the online survey show that 97% of participating doctors and 99% of nurses confirmed that their job had , at least at some point, made them feel burned out, whereby respondents could differentiate between different degrees of feeling burnout – 'Yes, a lot';' Yes, sometimes'; 'Yes, but rarely' and 'No, never' (see Figure 2).

> **Stress in health care has always been an issue. I am reflecting on the doctors' suicides over the decades I have been witnessing in healthcare. Work isn't a fun place anymore.[4]**

[4] Janette Gogler, Chief Nursing and Midwifery Officer, Monash Health

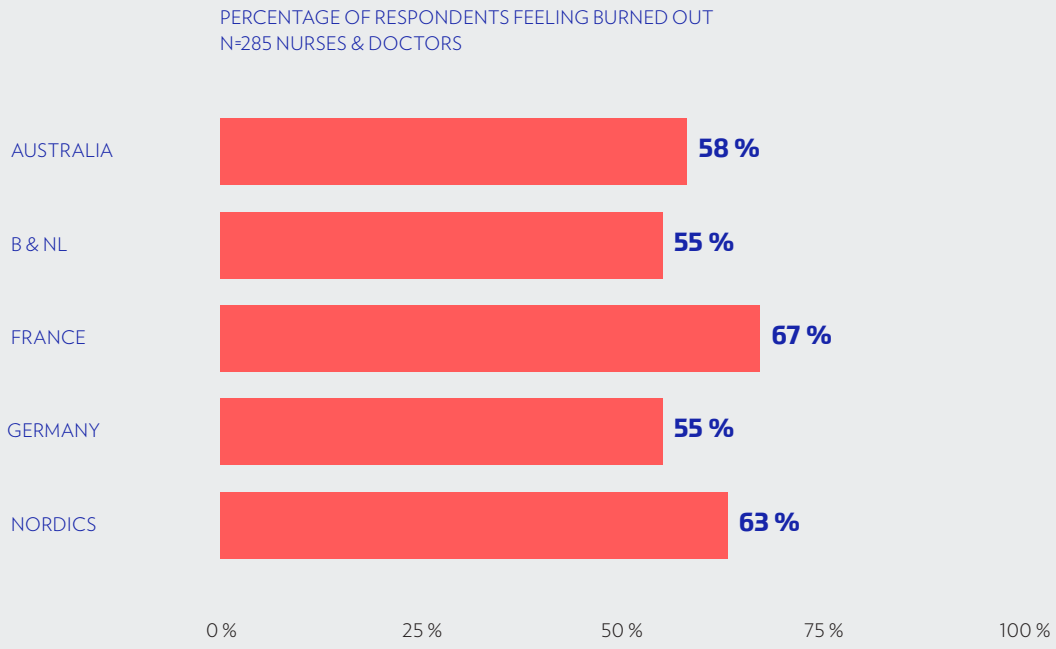
Figure 2:
Commonness of feeling burned out among online survey participants by role

TOTAL N=285 (218 DOCTORS & 67 NURSES)



The perception of feeling burned out proved to be common among participating doctors and nurses. It was also shared to a comparable extent across the studied countries (see Figure 3). Although the doctors who took part in the online survey came from various medical specialisations – ranging from internal medicine, intensive care, anaesthesia, cardiology, pulmonology, surgery, OB/Gynaecology, paediatrics, infectious diseases, oncology and rheumatology to psychiatry – no clear correlation could be interpreted from the sample between a specific medical specialisation and the likelihood of experiencing burnout.

Figure 3:
Commonness of feeling burned out among doctors and nurses in online survey by country



All clinicians who took part in the in-depth telephone interviews confirmed the prevalence of stress and burnout at work and some disclosed that they had already suffered first-hand from symptoms associated with burnout.

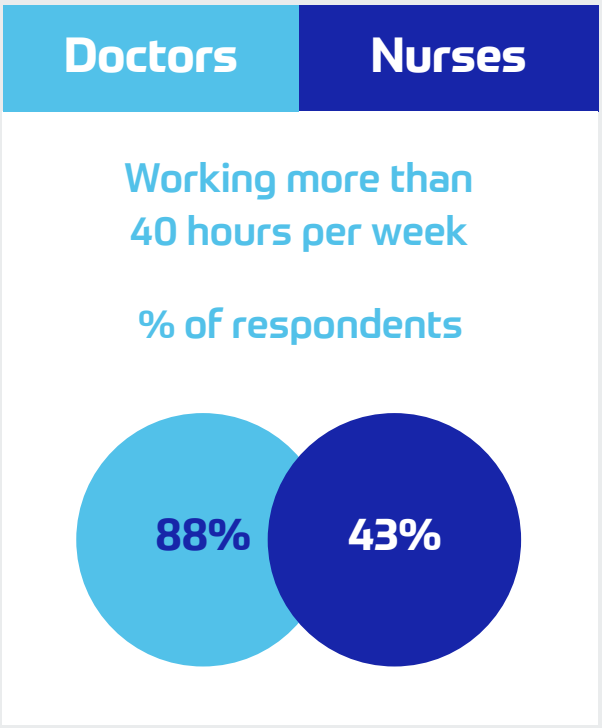
3.2

Factors driving work overload and burnout

A study conducted at the University of Zaragoza, Spain, found that a weekly workload above 40 hours is associated with being at a greater risk of suffering from burnout: "Individuals working more than 40 hours per week presented with the greatest risk for „frenetic" burnout compared to those working fewer than 35 hours", with 'frenetic' referring to a group of "ambitious subjects who sacrifice their health and personal lives for their jobs."

The fact that almost all participants in the online survey had admitted to having felt burned out at some point is in line with the findings that most of those doctors (88%) work in excess of 40 hours per week, whereas 43% of nurses had worked more than 40 hours per week (see Figure 4).

Figure 4:
Clinicians surveyed online working more than 40 hours per week



"You have limited control over the way the working day is structured. When you start work, you don't know when you will be able to sit down, have a cup of coffee, have lunch or even go to the bathroom. You have to react immediately and complete tasks by a set time.[5]

"There are always a lot of factors driving stress. How we communicate is important. Nowadays, we always carry little computers in our pockets. We are so busy all the time, and never do nothing, so the brain never gets any rest, so we must work on that as a society.[6]

"There is the fact that patients are maybe more demanding than a few decades ago.[7]

[5] Sara Heyman, nurse & journalist, Sweden
[6] Dr Pia Dellson, Senior Consultant in Medical Oncology and Psychiatry, Lund University Hospital, Sweden
[7] Dr Phillipe Kohl, Cardiac Surgeon, University Hospital of Liège, Belgium

Respondents of the qualitative survey came up with a list of factors contributing to the buildup of stress, work overload and sometime burnout. Most of them are the result of decisions taken on an organisational level and others reflect decisions on a governmental level.

The interviewed nurses and doctors were especially vocal about the heavy workload, which becomes even more unbearable due to the many unforeseen changes to work schedules, including cancellation of holidays and free weekends at short notice. The perceived lack of control respectively autonomy over the structure of the working day has been a source of discontent among several interviewed clinicians. Several of them complained of having to rush constantly from one task to the next and not being able to spend more time with the patient. Other clinicians want a more direct rapport with their patients, that allows them to see first-hand if a procedure or another form of treatment has helped them to get better. Management plays a pivotal role in setting the framework and rules to play by, which filter down to various aspects of the clinicians' work: These include the work schedule and its reliability, the mix of staff per shift, the creation of opportunities to exchange and discuss cases, rest places and an overall climate of appreciation and recognition or the lack thereof. For a comprehensive list of stress-inducing factors see Table 1 below.

Emotional fulfillment is in danger of being lost. […] Time spent in the clinic has lessened considerably, but the expectation of efficiency has greatly grown.[8]

[8] Prof. Dr. Matthias Rose, Director of the Medical Clinic for Psychosomatics at Charité University Medicine, Germany

Table 1: Factors contributing to stress and overload in clinicians

Factors contributing on an organisational level	
Documentation & administration	"A big driver for stress is the administrative workload. Nurses and clinicians have to comply with high reporting demands nowadays and many of this reporting goes back on clarifying what they have already done instead of the data being used forward." [9]
Heavy Workload & time pressure	"Patients must be evaluated immediately with no delay, hospital stays are shorter and shorter, and there is an increasing flow of patients through several levels of healthcare." [10]
Unpredictability of workday	"You have limited control over the way the working day is structured. When you start work, you don't know when you will be able to sit down, have a cup of coffee, have lunch or even go to the bathroom. You have to react immediately and complete tasks by a set time. On top of this, someone will call you to say your patient is getting worse, so you must attend to them straight away. It is incredibly stressful to work like this every day." [11]
Lack leadership of autonomy	"I think the most important reason for clinician burnout is the lack of autonomy in their own work and their personal insight into their work and private balance." [12]
Inadequate style	"Most physicians like their work, so the leadership should try to ensure that they stick to their agreed working hours and take breaks and holidays. Notably, during Christmas 2020 people in the healthcare field were anxious to be able to have their holidays. Good leadership is important to ensure there is a fair allocation of shifts and any additional workloads." [13]
More demanding patients	"Patients are very much more involved in their own care process than they were a couple of years ago, which is a good thing obviously, but it can also lead to situations where patients can be very demanding." [14]
Inefficient processes	"Poor processes are also responsible: This burden could of course be lowered by an extremely "industrial" set-up of the processes in the organisation." [15]
Restricted emotional fulfilment	"Almost everything is process-optimised and quality-assured. There is hardly any personal relationship with the patient and the success of the treatment is at best established through an analysis of the figures but can hardly be experienced emotionally." [16]
Factors contributing on a healthcare system / governmental level	
Lack of equipment & resources	"Austerity has also fallen quite heavily on the NHS. I think you can see some of the support structures that surrounded us before, just are not there anymore." [17]
Payment model	"In Australia it is fee for service. Throughput is required to make sure that the fixed costs are covered and that there is sufficient revenue to sustain and improve the infrastructure and services. There is a feeling of never catching up." [18]

[9] Mette Maria Skjøth, Senior Project Manager and Registered Nurse Odense University Hospital, Denmark

[10] Dr Helena Domínguez, Cardiology Consultant, University Hospital of Bispebjerg and Frederiksberg Hospital (BFH), Associate Professor, Department of Biomedicine, Copenhagen, Denmark

[11] Sara Heyman, nurse & journalist, Sweden

[12] Diede Mansens, Chief Nursing Information Officer, Antonius Ziekenhuis, the Netherlands

[13] Dr Tanja Laukkala, Acting Chief Psychiatrist, HUS Helsinki University Hospital, Finland

[14] Diede Mansens, Chief Nursing Information Officer, Antonius Ziekenhuis, The Netherlands

[15,16] Dr Markus Vogel, Head Physician of the Clinic for Paediatrics and Adolescent Medicine, Neuwerk Hospital, Germany

[17] Dr Tanya Pankhurst, Consultant Nephrologist, Director of Digital Healthcare/CCIO University Hospitals Birmingham (UHB), UK

[18] Dr Steve Hambleton, Deputy Chair of the Primary Healthcare Reform Steering Committee, Adjunct Professor, University of Queensland and General Practitioner, Australia

Clinical documentation is contributing to burnout

> There is such a lot of paperwork when an operation is being carried out and I really think the software needs to be improved to make administration easier.[19]

> Doctors now have to document everything. There is more administration than there was ten years ago. It is difficult but you must do it well because otherwise there could be a problem afterwards.[20]

> We did a survey a while back and found out that clinicians spend around 11 hours per week creating clinical documentation and up to two-thirds of that can be narrative. This means, clinicians spend far less time patient facing and only interact about 13% of their day with patients and are feeling overwhelmed by clinical documentation.[21]

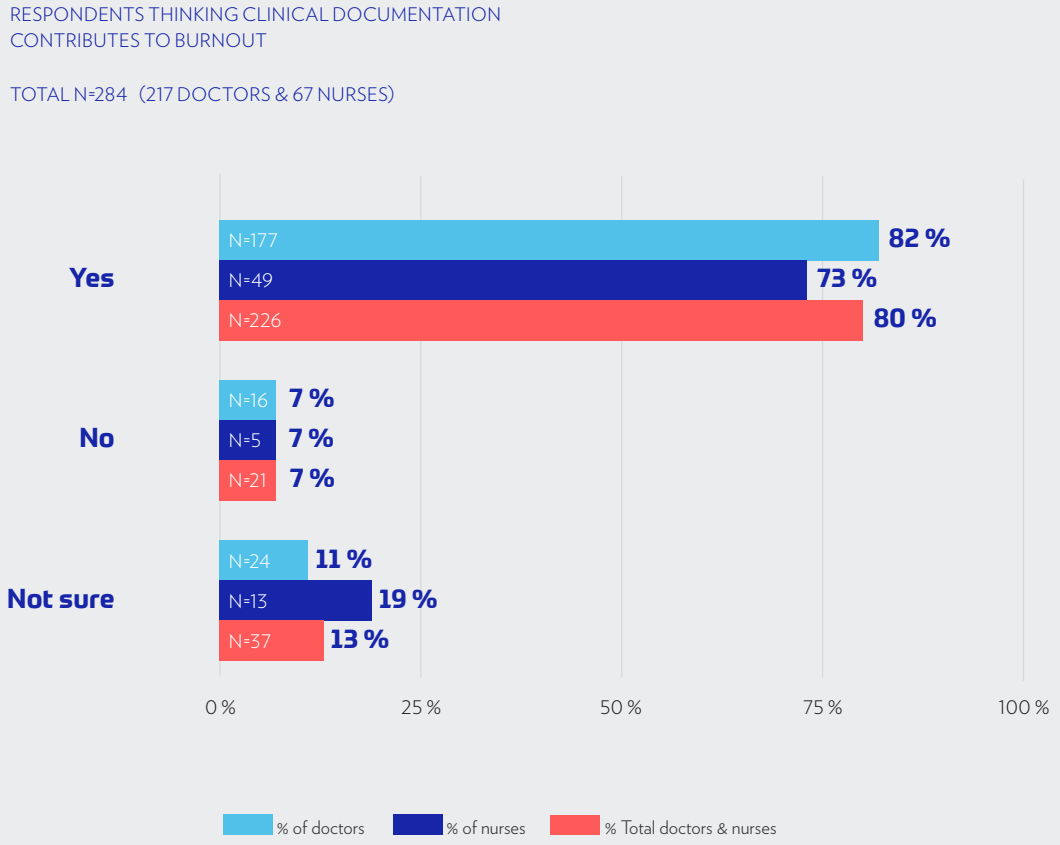
[19,20] Dr Esther Bloemheuvel, Clinician in training with a residency in orthopaedic surgery, Sint Maartenskliniek, the Netherlands
[21] Dr Simon Wallace, CCIO, Nuance Communications

The Journal of the American Medical Informatics Association (JAMIA) published an article on 15 February 2021 that found out that the large scale adoption of EHR in the US brought about by the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 led to clinician burnout as an unintended consequence. The publication states that, "the degree of clinician burnout and its contributing factors, such as increased documentation requirements, were significantly underestimated," although, amongst others, "increased documentation, increased cognitive load, data overload, and physicians taking early retirement", were all expected side effects of the EHR adoption. This was reinforced by the research carried out in this study. One doctor phrased it as follows: "We cannot work without electronic medical records, efficiency wise, there's no question about that, but I think electronic medical records to some extent have helped burnout due to their impact on stress." [22]

[22] Dr Phillipe Kohl, Cardiac Surgeon, University Hospital of Liège, Belgium

HIMSS research for this white paper confirms that clinical documentation is seen as a burden that can induce stress. When asked in the online survey if 'clinical documentation significantly contributes to clinician exhaustion / burnout', 80% of the respondents answering this question confirmed this, with 82% of doctors and 73% of nurses identifying documentation as a driver of burnout, with the remaining respondents being either 'not sure' (13%) about this correlation or negating it (7%) (see Figure 5).

Figure 5:
Online survey confirms correlation between documentation and clinician burnout



3.3

Factors preventing work overload and burnout

> **Promote a culture of openness, inclusion, empathy, trust and support. Cultivate openness around mental health and the value of protecting one's mental health and wellbeing. Being aware of signs of mental health issues in self or others, and the value of open and supportive communication: Facilitate team building activities, peer support and self-care activities; promote and reward collaboration, instead of only focusing on individuality and competition. Offer digital or physical programmes or workshops for advancing personal and professional development as well as for learning how to build resilience on an individual and an organisational level.[23]**

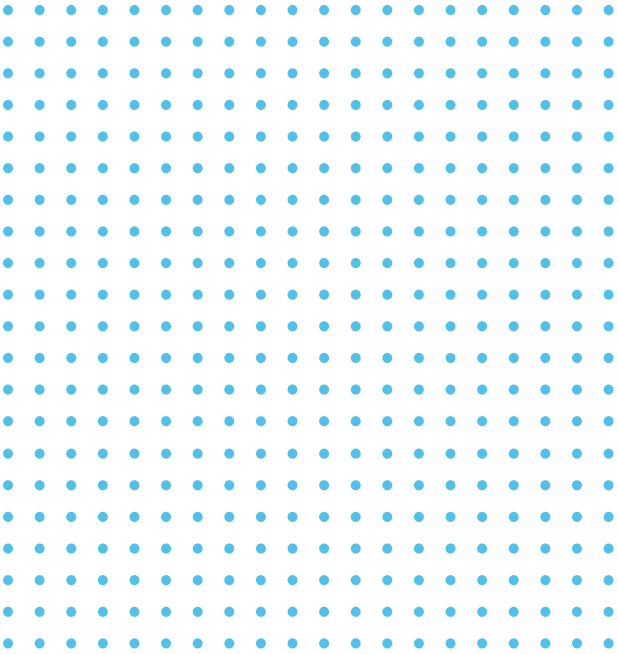
[23] Lene Søvold, Clinical Psychologist, Mental Health Advisor, Sweden

Interviewed clinicians specified a smorgasbord of measures that could help preventing the build-up of burnout inducing factors. In contrast to the aforementioned stress-conducive factors, they also offered insights on measures to be taken on a personal level. Clinicians can accomplish the suggested self-care activities independently of measures from their respective employers. Suggestions included a "healthy" lifestyle with good eating and sleeping habits, going for walks during breaks and mindfulness practices, among others.

However, most proposals were directed to measures on an organisation level. This includes a more collaborative management style that takes its employees' wishes into account more or a leadership model based on a shared vision, which makes the success of practicing medicine more tangible for all employees. Respondents voiced a strong need for support of various kinds: This could, for example, be emotional assistance by creating opportunities for regularly sharing work experiences with peers, monitoring the wellbeing of employees with e.g., mood trackers, offering therapy sessions for staff, providing bikes so that staff can avoid using public transport in times of COVID-19, organising appropriate rest areas or the provision of food during night shifts. Further suggestions involved for example reliable work schedules while avoiding frequent last-minute changes, a "fair allocation of shifts" and overtime to accommodate a work-life balance, periodic training to keep up the relevant skill sets as well as a general climate of appreciation of the staff's contribution. The latter can be expressed in various forms, such as measures expressing care for the staff, but also in higher wages, especially for nurses.

As clinicians work in teams during their shifts, measures effecting teamwork were high on interviewees' agendas. They ranged from preferring a stable team composition of trusted colleagues to avoiding friction and support exchanges of knowledge and emotions, to not being understaffed or using temporary agencies. The main learning was the importance of peer support needed to work effectively and efficiently, as well as for mental wellbeing.

Many interviewees thought that processes should be optimised to relieve stress and work overload, especially in connection with clinical documentation, which was also described as the "less meaningful" part of the work that reduces time with the patient. Achieving a better rapport with the patient was voiced in many forms such as knowing about their progress and offering patients relevant information about their stay in hospital, their disease or their planned procedure via a patient portal is seen as an important part of feeling fulfilled at work. See Table 2 for a list of suggestions that were shared.



"I think we should move forward to a leadership that involves working with others as full partners in a context of mutual respect and collaboration. We need more flexibility and a better work-life balance. We also need to promote well-being at work. We need to develop communication, emotional skills and openness in work communities.[24]

"Relieving the burden of administrative tasks is important.[25]

[24] Raakel Pirinen, Registered nurse, Laakson sairaala, Finland
[25] Dr Markus Vogel, Head Physician of the Clinic for Paediatrics and Adolescent Medicine, Neuwerk Hospital, Germany

Table 2: Factors preventing stress and overload in clinicians

Factors on a personal level

Personal self-care	"We have to learn how to take care of ourselves also." [26]

Factors on an organisational level

Efficient administrative processes	"Invest into digital tools and processes to streamline bureaucracy, e. g. reduce the documentation workload." [27]
Collaborative leadership style	"You need a management team that listens, shares information, gives acknowledgement, and offers training. You need the right equipment and good logistics." [28]
Support & protect wellbeing	"Outstanding solutions are, for example, organised night services, where parking garage and hospital routes are illuminated, where there are evening lunch packages, continuously present care managers and recommen-dations for staying healthy during night shift. Some facilities now also rely on specially paid pool groups to fill in when staffing levels are low. This helps enormously, both in the outpatient settings and on the wards." [29]
Reliability of workplans	"For nursing staff, reliability in the duty roster is what counts above all - not always having to fill in at night because someone has fallen ill. This creates a lot of stress." [30]
Training	"The clinical staff needs to get the opportunity to develop and use their competences in the right way." [31]
Appreciation	"I think that looking after people in their workplace and making them feel valued is very important. If you had things at work, which made people feel looked after; facilities that they could relax in or helped them exercise and really looked out for people's health, and being respectful of people altogether, that would go a long way to making a difference." [32]
Promoting a work-life balance	"Actively promote flexibility and a work-life balance." [33]
Rapport with patients	"More resources should be put into developing educational platforms for patients addressing matters of concern for patients and also provide answers to common questions arising in the minds of patients." [34], "Feedback on patients' progress is valuable." [35]
Teamwork	"The stability of the team is vital; when there is stability, we can achieve more effective consistency, communication, information, and leverage mutual aid, so we certainly aim for this within our hospital." [36]
Salary	"With higher salaries, more nurses would stay. If they were to get a higher pay-check, that would say 'we really value your work and realise you work at the weekend'. If more nurses stayed, this would reduce stress because it would be easier to plan and keep the competence in the hospitals." [37]
Hospital architecture	"The healthcare facilities' architecture needs to be adapted so that the health-care workers' tasks are made easier, for example, less walking between rooms and in the corridors." [38]

[26] Raakel Pirinen, Registered nurse, Laakson sairaala, Finland

[27] Dr Clair Sullivan, Program Lead, Queensland Digital Health Academy Research Group, University of Queensland; Chief Digital Health Officer, Metro North Hospital and Health Service, Australia

[28] Nicole Mercier, Nurse Manager, Hôpital de Fourviere, Lyon, France

[29] Prof Christel Bienstein, President of the German Professional Association for Nursing Professions (DBfK) and council member of the German Nursing Council, nursing scientist and trained nurse, Germany

[30] Prof Christel Bienstein, President of the German Professional Association for Nursing Professions (DBfK) and council member of the German Nursing Council, nursing scientist and trained nurse, Germany

[31] Mette Maria Skjøth, Senior Project Manager and Registered Nurse Odense University Hospital, Denmark

[32] Dr Tanya Pankhurst, Consultant Nephrologist, Director of Digital Healthcare/ CCIO University Hospitals Birmingham (UHB), UK

[33] Dr Steve Hambleton, Deputy Chair of the Primary Healthcare Reform Steering Committee, Adjunct Professor, University of Queensland and General Practitioner, Australia

[34] Medical Doctor, Denmark

[35] Nina Evenrud-Finneid, ICU nurse, Elverum Hospital, Norway

[36] Dr Phillipe Queruel, Head of Rehabilitation and Burns unit, Hôpital Léon Bérard, France

[37] Sara Heyman, nurse & journalist, Sweden

[38] Nicole Mercier, Nurse Manager, Hôpital de Fourviere, Lyon, France

4

The pandemic has affected clinicians' stress levels and workloads

"COVID has obviously massively increased the level of stress and work that clinicians have had to do." [39]

"I think COVID has changed the way we all work and live. It has had a great physical and mental impact on everyone, especially for the clinicians and nurses, who already had trouble balancing their work and private lives." [40]

"One of the most stressful factors has been the unpredictability of the pandemic, not just for us but for everyone. The virus has increased admissions and it has been hard to know how dangerous it is and how easy it is to acquire infection." [41]

"There is an additional burden of enormous hygiene measures." [42]

"The pandemic is perceived as a burden in the hospital context, it definitely creates a stress situation. Uncertainty creates stress, security reduces stress." [43]

The majority of respondents reported an increase in the stress level and the workload due to the pandemic. The results of the online survey show that 88% of clinicians who answered this question think that COVID-19 pandemic had exacerbated the feeling of exhaustion and overload. Of those who confirmed, 77% were doctors and 23% nurses. The remaining respondents thought that the pandemic did not have this effect (3%) or were 'not sure' (9%) about its consequences on their work (see Figure 6).

[39] Dr Afzal Chaudhry, Director of Digital, Cambridge University Hospitals NHS Foundation Trust, UK

[40] Diede Mansens, Chief Nursing Information Officer, Antonius Ziekenhuis, the Netherlands

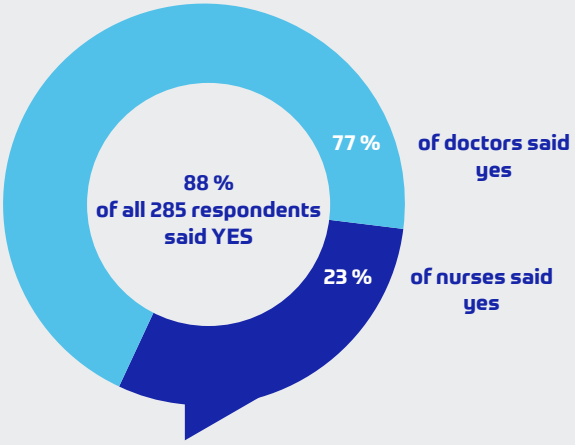
[41] Dr Helena Domínguez, Cardiology Consultant, University Hospital of Bispebjerg and Frederiksberg Hospital (BFH), Associate Professor, Department of Biomedicine, Copenhagen, Denmark

[42] Prof Christel Bienstein, President of the German Professional Association for Nursing Professions (DBfK) and council member of the German Nursing Council, nursing scientist and trained nurse, Germany

[43] Dr Markus Vogel, Head Physician of the Clinic for Paediatrics and Adolescent Medicine, Neuwerk Hospital, Germany

Figure 6:
COVID-19 pandemic has increased clinicians' stress levels and workloads

Do you think that the COVID-19 pandemic has exacerbated the feeling of exhaustion and overload?



Pandemic-induced changes in the healthcare delivery

The pandemic has also led to various changes in clinicians' work routines and in the way healthcare is delivered (see Table 3), which has been seen as an additional source of stress: Many clinicians had to start wearing protective gear and learning new skills as they were asked to work in other departments. Some form of treatments, like scheduled surgeries or group therapy session had to be cancelled. However, a trend towards conducting remote consultations has emerged, affecting mainly doctors rather than nurses as the former do more telemedicine consultations to avoid face-to-face appointments where possible.

The clinicians interviewed as part of the qualitative survey offered many detailed insights as to how COVID-19 pandemic had increased stress levels at work. A major contributor to this was the high degree of uncertainty that caused fear and anxiety among the healthcare workers, especially those at the front line. Clinicians were particularly scared for their own health and that of their family members. They were also affected by the constant changes to their work schedules and routines at short notice as the pandemic enfolded. Interviewees reported they had to cancel vacations to work additional shifts, all adding to a rise in workload and stress levels. Often staff had to be deployed to the intensive care unit (ICU), undergoing training and in need of support from trained ICU clinicians, which was perceived as an additional cause of stress. Moreover, ICU nurses reported of their battle with isolation when spending hours next to a patient, without food or drink and even without any means to communicate with co-workers other than by putting up sticky notes on a window.

> **"Since COVID-19, we have been seeing patients more often remotely, which has been a major change in Finland in all healthcare fields, especially in psychiatry.[44]**

> **"In the outpatient clinic we have been forced to change our management and we have reduced our physical meetings with patients. Many patients have changed to more online solutions, pushed their appointments back or cancelled visits because of fear of infection.[45]**

[44] Dr Tanja Laukkala, Acting Chief Psychiatrist, HUS Helsinki University Hospital, Finland
[45] Dr Helena Domínguez, Cardiology Consultant, University Hospital of Bispebjerg and Frederiksberg Hospital (BFH), Associate Professor, Department of Biomedicine, Copenhagen, Denmark

Table 3: COVID-19 pandemic-induced changes in healthcare delivery

Increase in remote consultations	"I actually meet most of my patients, that's over 50% of them, remotely. We use video apps like SKYPE, Teams, and some other systems too. I rarely see out-patient clinic clients face-to-face." [46]
Wearing protective gear	"Working in full infection control equipment is also a physical strain due to the heat in the room, the heavy breathing due to wearing a mask and the lack of being able to drink or eat over the course of several hours." [47]
New skills / fields of work	"It has been stressful for most of the staff to be moved to new departments, with new colleagues and new task. It has been an unknown situation for both, staff and management. Decisions had to be made fast and new guidelines appeared regularly." [48] "Nurses had to learn new skills to be able to work in different departments like intensive care." [49]
Delays in treatment	"Super acute patients getting slower care due to hygiene routines and precautions and therefore potentially getting poorer care. E.g., with a stroke, a million brain cells die per minute. If one is a 'COVID suspect', the treatment may easily be delayed with 15 minutes due to more difficult logistics." [50]
Cancellation of treatments	"COVID means, I can't deliver group training or therapy as all the groups got cancelled. So, I have no rehabilitation to give my patients, which is really stressful on an occupational level, as I am unable do what I am supposed to do." [51]

[46] Dr Tanja Laukkala, Acting Chief Psychiatrist, HUS Helsinki University Hospital, Finland

[47] Nina Evenrud-Finneid, ICU nurse, Elverum Hospital, Norway

[48] Mette Maria Skjøth, Senior Project Manager and Registered Nurse Odense University Hospital, Denmark

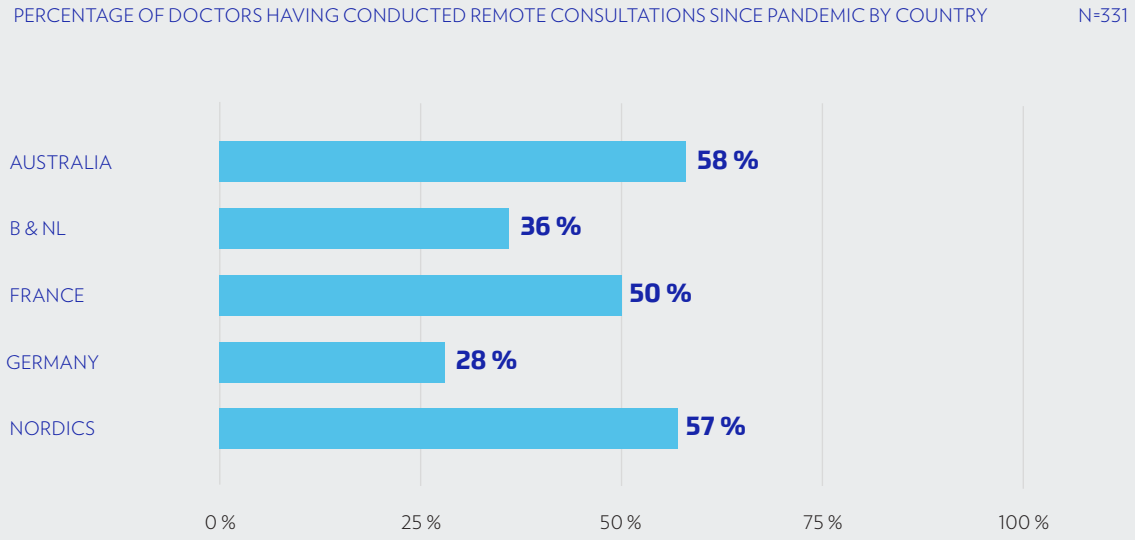
[49] Leena Setälä, Sustainability Director at Hospital District of Southwestern Finland, Development Director at Health Campus Turku

[50] Medical Doctor, Sweden

[51] Dr Pia Dellson, Senior Consultant in Medical Oncology and Psychiatry, Lund University Hospital, Sweden

When asked as part of the online survey whether they had been conducting remote consultations since the pandemic, many doctors across all surveyed regions confirmed this (see Figure 7).

Figure 7: **Usage of remote consultations by region**



Despite the many stress-inducing consequences of COVID-19, Interviewees also reported some stress-reducing incidences. As a result of the close collaboration under challenging circumstances, some clinicians felt a closer bond with their co-workers, a sense of 'solidarity and fulfillment' at work.

5

What is the role of technology in improving working conditions?

"

It [technology] can have a huge potential in helping to reduce the burden of time spent on routine-based and documentation-based tasks. This will give clinicians more time to focus on the most essential tasks of their work: providing help and guidance to their patients.[52]

"

Technology has great potential, but you need to get the human element right. Technology needs to add value and make a positive impact to what we do and how we do it, for it to achieve sustained adoption. I think it is about the right technology, at the right time, so we have the right tools for the job.[53]

[52] Lene Søvold, Clinical Psychologist, Mental Health Advisor, Sweden
[53] Helen Balsdon, Chief Nursing Information Officer, Cambridge University Hospitals NHS Foundation Trust, UK

What role does technology play when it comes to clinician burnout? Does it help to alleviate the symptoms that lead to stress and ultimately burnout or might it contribute to the latter? HIMSS' research findings suggest that technology can both contribute to and help alleviate issues of burnout.

5.1

Digital saviour: Technology "to reduce stress" and "cope with the tasks ahead"

"Digital technology can absolutely help." [54]

"Technology helps reduce stress and be present with their patients, which will help in strengthening the therapeutic relationship." [55]

"Digitalisation seems to me to be almost the only option today to be able to cope with the tasks ahead." [56]

These affirmative statements stand for the list of merits respondents of the qualitative survey associate with the use of information and communication technology in healthcare (see Figure 8). The homogeneity of answers across the surveyed countries – despite the disparities in the maturity level of their respective healthcare systems – confirms the positive perception of the benefits of using technology at work.

The respondents' answers have a clear message: Technology has a role to play when it comes to supporting clinicians in what they do best: helping patients. Consequently, the value of technology is perceived as the extent to which it helps improving patient care in a way that is conducive to clinicians' workflows. Technology must address a specific issue and create an imminent value; it ultimately must stand the test of whether it improves working conditions. The interviewed clinicians found the below aspects of technology to be particularly helpful in improving patients' health and wellbeing:

Figure 8: **How technology contributes to better patient outcomes region**

Technology increases patient safety & outcomes	Improve efficiencies	Drive insights into causes of diseases
• Improves care and patient safety by facilitating access to data, as well as the exchange of data between healthcare professionals and other relevant stakeholders involved in the care. • Helps to advance the quality of clinical decisions by AI-powered algorithms that are based on evidence-based data. • Facilitates multiple forms of remote consultations to improve safe access to care. Telemedicine has also proven to support the care of weaker and less mobile patients as they do not need to show up in person for an appointment. • Use of apps and other digital tools to engage with patients as well as empower them to adhere better to their respective treatment regimes. • Patient portals enable the sharing of infomation between clinicians and patients. This improves the quality of care as well as the relationship between patient and healthcare professionals.	• Increases access to clinical data with the help of clinical information systems, reducing search time. • Mobile technologies further enhance access to and input of medical information 'on the go'. • Technology can facilitate clinical documentation, freeing up clinicians' time.	• Deploy analytics to drive the generation of insights to enhance the progress of personalised medicine and population health management. • Benefit from sensor technology to collect more patient data outside a healthcare facility as a base for better decision making on an individual patient-level, but also on a population level.

[54] Raakel Pirinen, Registered nurse, Laakson sairaala, Finland

[55] Lene Søvold, Clinical Psychologist, Mental Health Advisor, Sweden

[56] Prof Dr Matthias Rose, Director of the Medical Clinic for Psychosomatics, Charité University Hospital, Germany

The interviewed psychiatrists, radiologists and oncologists stressed the advantage of remote consultation as a means to expand access to care; however, that does not imply that clinicians of other medical disciplines would not agree with this.

The pandemic has given the use of technology an additional push, especially with the deployment of telemedicine growing. The HIMSS research identified that technology had helped alleviate the additional stress evoked by the pandemic, but only if it had been installed before its outbreak. Once clinicians are stressed or are suffering from burnout symptoms, they have extremely limited capacities to deal with additional problems, such as embracing the introduction of new workflows due to the implementation of technology. One nurse said: "People are very tired now and it takes a lot of energy to learn to use new technology. It is so much easier to learn when you feel good and are not under too much pressure."[57] Some clinicians thought that this concern might be eased, for example, with tailored training, easy access to a helpdesk function or the support of a clinical champion.

[57] Raakel Pirinen, Registered nurse, Laakson sairaala, Finland

5.1.1

AI-based documentation can improve working conditions

With clinical documentation often described as a burden, contributing to stress and burnout, the HIMSS research investigated if technology could ease this administrative duty. About one third of participants in the online survey thought that AI-powered speech recognition technology could help relieve this burden. Interviewees also felt that AI-based documentation solutions made a positive contribution to their work situation, for example, by increasing patient safety, easing aspects of their work, shaping clinical workflows, and supporting clinicians by highlighting aspects of the patient record.

5.2

Technology is as good as its usability

Usability is at the heart of the success of every technology adoption. If its usage creates more disruptions than perceived benefits and is not intuitive, it can give rise to frustration and exhaustion and does not fulfil its mission: to support clinicians. As we saw earlier in section 3.2. of this white paper, the adoption of EHRs in the US resulted in heavier workloads and clinician burnout. An interviewee said: "There are a lot of electronic healthcare record systems out there, which aren't good at all, and are the opposite of good."[58] Furthermore, one commented: "Electronic medical records to some extent have helped burnout due to their impact on stress. I mean, if they are deployed properly with the correct support and training for electronic medical records, it's much better – we cannot underestimate the need of training-– to have a team of support for using correctly the EMR. [...] I think this is really key also for safety. [59]"

Other interviewees questioned the usefulness of the extent to which healthcare data was collected, which could lead also to more work for those involved in gathering, documenting and analysing the data: "The implementation of technology should not be used as a reason to start to collect unnecessary pieces of information just because you can." [60] That is certainly an area that needs to be looked into in more detail on an organisational and healthcare system level.

[58] Dr Tanya Pankhurst, Consultant Nephrologist, Director of Digital Healthcare/ CCIO University Hospitals

[59] Dr Phillipe Kohl, Cardiac Surgeon, University Hospital of Liège, Belgium

[60] Dr Afzal Chaudhry, Director of Digital, Cambridge University Hospitals NHS Foundation Trust, UK

> **"If you implement bad systems, if you've got slow computers, if you haven't got enough computers, if people can't get onto them, if you don't train people properly, if the system itself is not intuitive, and it is not clinically designed, or led, and it doesn't work properly in terms of what people need in the workflow, then all of that hugely increases stress.[61]**

> **"AI-based documentation solutions or other digital technologies might make some parts of the work easier, but technology has a peripheral role in these matters.[62]**

[61] Dr Tanya Pankhurst, Consultant Nephrologist, Director of Digital Healthcare/CCIO University Hospitals Birmingham (UHB), UK

[62] Sara Heyman, nurse & journalist, Sweden

“

The entry of data in the electronic medical records is an additional stress for nurses and Drs. Initially it is more of a problem, but after a while we are used to the system and it is not so challenging.[63]

“

I believe that the use of technology should initiate from a clinical problem leading to technological problem solving and not the other way round (a smart technology has been developed and we should now seek to find room for it within the area of health care.[64]

As the introduction of technology is often disruptive, it should be introduced in conjunction with the support of the management and flanked with training and other necessary support measures. ‘If staff are told that the implementation of technology can be somewhat painful, but will improve working conditions, they will feel better for it’, some interviewees believed. However, the timing of technology adoption is also an important consideration, when workload and stress levels are high, as is the case in the pandemic, the introduction of new technology and workflows is not recommended.

[63] Dr Bertrand Marchand, General Surgeon, Gap Hospital, France
[64] Dr Helena Domínguez, Cardiology Consultant, University Hospital of Bispebjerg and Frederiksberg Hospital (BFH), Associate Professor, Department of Biomedicine, Copenhagen, Denmark

TECHNOLOGY EXPERT´S VIEW

Interview with Dr Simon Wallace, CCIO Nuance Healthcare

This white paper is titled "From overload to burnout". Where do you draw the line between overload and burnout?

| Dr. Wallace: Overload can be defined as an excessive amount of clinical work that is undertaken by healthcare professionals in a defined period of time. If we look at the volume of work, for example, it could be the number of patients that a hospital doctor on call would admit as an emergency admission over a 24-hour period. There would be many more emergency admissions during the winter than during the summer months, with the risk of overload greater at that time of year. On an intensive care unit there is a recommended 1:1 ratio between a specially trained intensive care nurse and a critically ill patient. However, with COVID this has been temporarily suspended, with nurses now looking after two to four patients depending upon their severity. This is another example where overload starts to kick in.

How does burnout manifest itself in clinicians as opposed to overload?

| Dr. Wallace: We start developing symptoms of burnout due to a persistent exposure to that excessive workload over time. Both physical and psychological strengths are challenged in such a way that our in-built resilience is taken beyond its limits and we are just not able to cope. Burnout will manifest itself as stress with additional emotional symptoms coming into play: clinicians experience a sense of failure and self-doubt, they feel helpless, trapped, possibly detached, and not motivated to work. As overload becomes unsustainable it then drifts into burnout. In essence there are several contributing factors to burnout, but the key ones are the enormous work pressure and the fears over patient safety; complaints voiced by patients only add to this.

It is important to stress that burnout has been a growing issue in healthcare for many years. However, over the last year, the pressures of COVID have only added to this endemic problem and made it much worse. This not only revolves around the exponential increase in workload but the stark reality of healthcare professionals going to work with the real fear of becoming sick themselves.

All respondents from the qualitative survey saw the benefits of digital technology; however, clinicians also voiced that its introduction can be challenging. How does technology need to evolve to overcome this?

| Dr. Wallace: The pandemic has accelerated the technology agenda. However, technologies should be adopted for all the right reasons. Whatever the technology in question is, it must meet the needs of clinicians and not add extra stress or time pressures to their already hectic workflow and timetable. The key wishes in this respect are: Technology needs to be simple and intuitive to use, it should be faster than present processes and, at a minimum, not add extra time. Technology must be nimble to adapt to the complexities of medicine; it needs to automate steps in a workflow and must do so safely. It needs to help remove unnecessary admin and process steps and allow clinicians to spend more time doing their job – their clinical interactions with patients.

The clinicians need to see the immediate benefit of a technology in their day-to-day activities. Technology must be safe and not add clinical risk and, ultimately, make the patient experience safer. A healthy litmus test would be that once clinicians have used a particular technology; they would not work in an organisation that did not have it.

Could you recommend different adoption strategies of technology to facilitate a smoother interaction with clinicians?

| Dr. Wallace: A technology that was thoroughly assessed and tailored by clinicians themselves to meet their workflow need will be more successfully adopted. Moreover, there need to be clinical champions who are the bedrock for a successful adoption: The so-called 'superusers' need to be available to provide helpful insights when clinicians experience issues with the technology at the time they are using it; for example in outpatient clinics or on their ward rounds. In this way, clinicians do not readily abandon technology if something does not quite work.

Training is also a key part of a successful adoption strategy; it needs to be relatively simple and focused. We had feedback that short 30- to 60-second-long video clips on how to use the technology are important – tips and tricks of key pieces of functionality. It is also essential that an organisation has a good feedback loop to ensure that those in charge hear about any issues regarding the technology and have processes in place to subsequently address those.

The NHS has done a particularly good job with the introduction of the Chief Clinical Information Officer and Chief Nurse Information Officer network that gives doctors and nurses a recognised role around technology initiatives and technology adoption. The fact that people working in healthcare see the benefits of technology as a consumer in their everyday life can also play a role to reduce resistance to the use of technologies at work. They are realising that what they experience in their home could be also transferred into their work life. And they come to work asking: Why not?

May you share examples of how technology, especially speech recognition, has helped to lower the workload and stress level of clinicians?

| Dr. Wallace: We found out that clinicians spend around 11 hours per week creating clinical documentation and up to two-thirds of that can be narrative. This means, clinicians spend far less time patient facing and only interact about 13% of their day with patients and are feeling overwhelmed by clinical documentation.

Does that contribute towards stress and burnout? We conducted a survey before the second wave of the pandemic and found that 87% of respondents in primary care and 70% in secondary care thought that the administrative burden of clinical documentation significantly contributed to clinician burnout.

Can technology help to lower the workload and stress? As far as clinical documentation is concerned, cloud-based artificial intelligence (AI)-powered speech recognition can. That means instead of either typing or dictating, clinicians can use their voice when working on an admission note, a ward round note, a procedure note, a discharge summary, or an outpatient letter. Speech recognition technology streamlines and simplifies the clinical documentation process. We speak 3x faster than we type and, with an AI-powered speech recognition solution, the AI, the deep learning and the algorithms now allow for a very high accuracy so that clinicians are not being frustrated and having to make corrections. I would call this speech recognition at industrial strength as far as accuracy is concerned. You can also use it to navigate around the health records, which helps to take the clicks out of the navigation. And by being

in the cloud, it allows the clinician to access her or his voice anywhere, such as different parts of a hospital or even in different hospitals. And particularly during COVID, the cloud has allowed remote clinics to be held from the clinician's home.
Does speech recognition play a role in reducing stress? The simple answer is yes. It saves time in the creation of documentation; it reduces delays and improves the flow of communication and the quality of the patient record. Let me illustrate this with two examples:

1. The real challenge for clinicians and their staff in an outpatient clinic is the long turnaround time to send out GP letters. Some NHS trusts have high outsourced transcription costs and others have a shortage of secretaries. Hospitals where clinicians have created their own outpatient letters using speech recognition saw reductions in turnaround times from two to three weeks down to two to three days. In some cases, patients left the hospital with the letter on the same day.

2. In the ED-space an independent study found speech to be 40% faster than typing. Putting those results into minutes, the study estimated that the time saving on average for each patient was about 3.5 minutes. Amortised over a one-year-period, across all healthcare professionals and all case mix, in the study hospital, it saved 389 days of clinician time, which is the equivalent of two full time ED doctors.

In the framework of the Topol Review, Eric Topol took some of the data and assumed that by saving just one minute per patient in ED across England's NHS, he estimated that for 24 million ED-attendances per year, 400,000 hours of ED-consultation time could be saved in that timeframe. If he took that same one-minute saving in the outpatient department, it was 1 million hours of outpatient clinic time saved per year. Although it is a small amount per patient, it does add up. In summary, the key feedback from clinicians is that they think speech technology reduces their admin burden. One clinician told me he does no longer stay late to catch up on admin and can go home to see the kids.

Working for an internationally operating company, do you perceive that the scale of clinician burnout varies between different European countries as well as Australia?

| Dr. Wallace: Healthcare systems around the world are experiencing the pressures of burnout. There are several reasons for that. One is the legacy of the success of medicine during the 20th century and the early 21st cent-ury that has resulted in an aging population where people can have multiple co-morbidities. These chronic conditions are often complex to manage and, wherever you are in the world, these pressures on clinicians have certainly added to stress and burnout. That is true in all European countries and Australia, among others.

However, each country has different reasons over above that for its clinicians suffering from burnout. For example, these could be workforce issues like staff shortages. There are different degrees of disconnection between different parts of a health system, varying from country to country, and each of these disconnections is going to add to the stress and the burnout. Different payment models cause different stresses as well. In an insurance driven system where doctors are being paid by the number of patients they see; this pressure can be a source of stress. There are also different levels of skills training that vary by country as well as different levels of bureaucracy.

In summary, there are degrees of stress and burnout in all countries but the reasons for it differ and it is important to acknowledge those. However, whichever country you are in, COVID has added to that; but COVID aside, the stress and the burnout are real and will

continue to be real in countries throughout the world.

Is there a link between the digital maturity of a healthcare system and the magnitude of clinician burnout?

| Dr. Wallace: You would expect that the more digitally mature a healthcare system is, the greater the contribution that would make to reducing clinician burnout. Needless to say, if you still do not have enough beds or hospital staff, the overall impact of stress may still be there to a similar degree.

But let's look specifically at digital maturity. If we consider the EHR, it is one of the biggest transformational processes that a hospital will go through and probably one of the hardest too. All EHR implementations result in a significant amount of change and success of the transformation journey will depend upon many factors; eg. clinically agreed workflows, quality training, the enthusiastic flag waving of clinical champions. Order comms and electronic prescribing are good examples of digital tools that have contributed to the easing of a clinician's admin burden while at the same time improving patient safety. However, other areas such as the clinical documentation process have been the poor cousin of EHR adoption. Yet I think that digital tools such as AI based speech recognition can really support this process and help reduce that burden. When you add in the concept of virtual assistants to help navigate around and interact with the EHR using your voice, then the number of clicks reduces significantly with a resultant time saving increasing adoption.

So, I think over time more digitally mature organisations can make a healthy contribution to reducing stress and ultimately burnout, but it takes time for it to bed in and that is why it needs board level buy-in so that there is an organisation-wide commitment to building up their digital maturity.

The pandemic has underscored the benefits of technology. Have you observed any changes in the way clinicians have been documenting?

| Dr. Wallace: When the first COVID-19 patients arrived in March 2020, we looked for symptoms like cough, shortness of breath and fever. We did not know yet about the loss of smell and taste, discolouration of fingers and toes or the role of dexamethasone, for example. COVID being a brand-new disease meant that clinicians had to document their findings in detail and quickly. For this they needed a means to document without the process of documentation slowing them down. Using speech has been helpful in this respect, also because it enriches the quality and content of a note. Furthermore, clinicians have found using speech recognition a real advantage when wearing personal protective equipment.

The pandemic has increased the opportunity of moving away from typing and digital dictation, allowing clinicians to be able to use their voice to create their notes. Although the pandemic has been a challenge for healthcare systems and those working in them, one good byproduct of it is the opportunity to embrace those technologies which are going to make the whole healthcare professional-patient experience much better. It is quite clear that AI-powered speech recognition has an important and significant role to play there.

6

Concluding organisational and governmental action points for mitigating stress

As Dr Alessi already emphasised in the foreword of this white paper - burnout is not inevitable. It requires some corrective measures to be put into place to avoid stress building up to such a degree that it turns into burnout. Clinicians participating in the HIMSS research came up with a host of suggestions as to how this might be attained. The effective implementation of those proposals can take place on an organisational or a governmental level, depending on their nature as well as the type of healthcare system and its underlying funding model (see Table 4).

The suggestions that centre around self-care to counteract stress reactions were discussed in section 3.3. In the following taxonomy of stress-reducing recommendations, they will be included as a potential educational action point for healthcare organisations.

Table 4: **Taxonomy of action points for reducing stress in healthcare delivery on an organisational & a governmental level**

Action points on organisational level	Action points on governmental/healthcare system/societal level
• Increase the number of clinicians to improve patients-staff ratio. • Ensure technology is reliable and operates steadily. • Training staff self-care measures such as relaxation techniques, mindful-based stress reduction, meditation. • Create a supportive culture that encourages empathy and regular sharing so that the onset of stress and burnout can be detected early. • Involve clinicians in defining the requirements of technology projects. Engage them in defining the interactions between the technology and the workflow to ensure the information is collected at the right time, at the right point in the workflow and by the right person. Assure also that the asked for information is pertinent and relevant. • Introduction of peer-led or professional-led training and education sessions for clinicians on how to use healthcare IT solutions to their greatest effect. • Move towards a transformational corporate culture where the leadership model is based on a shared vision that makes success of medicine more directly tangible for all employees.	• Raise the profile of the nursing profession – including salary levels – to attract more students to nursing. • Incentivise technology implementation. • Legal requirements on healthcare delivery need to be supported with adequate resources to be implemented. • Enact health & safety regulations that ensure sufficient rest periods between 'being on call' and regular shifts. • Interlock nursing and technology to a greater extent by creating more positions like Chief Nurse Informatics Officer to support more efficient processes in-patient care. • Ensure the funding model is in line with the model of care. • Especially in the Nordics is more societal pressure on maintaining a healthy work-life balance that filters down to the management of organisations.

7

Methodology

Research for this white paper was carried out between 19. 11. 2020 and 26.02.2021, and consisted of an online survey, qualitative telephone interviews and desk research. A total of 443 respondents participated in the research for this study: 416 clinicians participated in the online survey and 27 doctors and nurses were interviewed as part of the qualitative telephone survey. The two instruments used respectively for both investigations explored to different degrees the prevalence of stress and burnout at work, factors driving and preventing these phenomena and the extent to which the pandemic had contributed to a further rise in the workload and the role of technology in improving working conditions. Please see below for more detailed information:

1. **The online survey**
   (23.11. 2020 until 14.01.2021):
   A total of 416 practicing doctors and nurses from Australia, Belgium, Denmark, France, Germany, the Netherlands, Norway and Sweden participated in the online survey. It investigated their average weekly workload and if they were feeling burned out. The survey also touched upon the pandemic with regards to it increasing the feeling of exhaustion and overload and the extent to which remote consultations were conducted. The study also inquired on what healthcare organisations and governments could do to prevent burnout. Furthermore, the questions probed if there is a connection between administrative burden and clinician burnout and whether speech recognition could offer some relief with accomplishing documentation.

2. **The qualitative telephone survey**
   (19. 11. 2020 until 26.02.2021):
   A total of 27 respondents from Australia, Belgium, Denmark, Finland, France, Germany, the Netherlands, Norway, Sweden and the UK were interviewed over the phone. Mainly speaking to two doctors and one nurse in each country, the research followed a structured questionnaire. The latter explored the prevalence of clinician burnout, as well as factors contributing and preventing it. Moreover, it also examined which organisational changes could reduce the impact of stress and how COVID-19 pandemic had affected the respondents' respective workloads. In addition, the survey explored what healthcare providers could do to improve staff wellbeing and what role technology could play to assist in improving working conditions.

3. **Desk research:**
   Focused on predominantly academic studies on burnout amongst doctors and nurses in healthcare institutions in selected European countries and Australia.

Figure 9: **Sample composition of online survey by country**

Australia
France
Belgium
The Netherlands
Germany
Norway
Sweden
Denmark

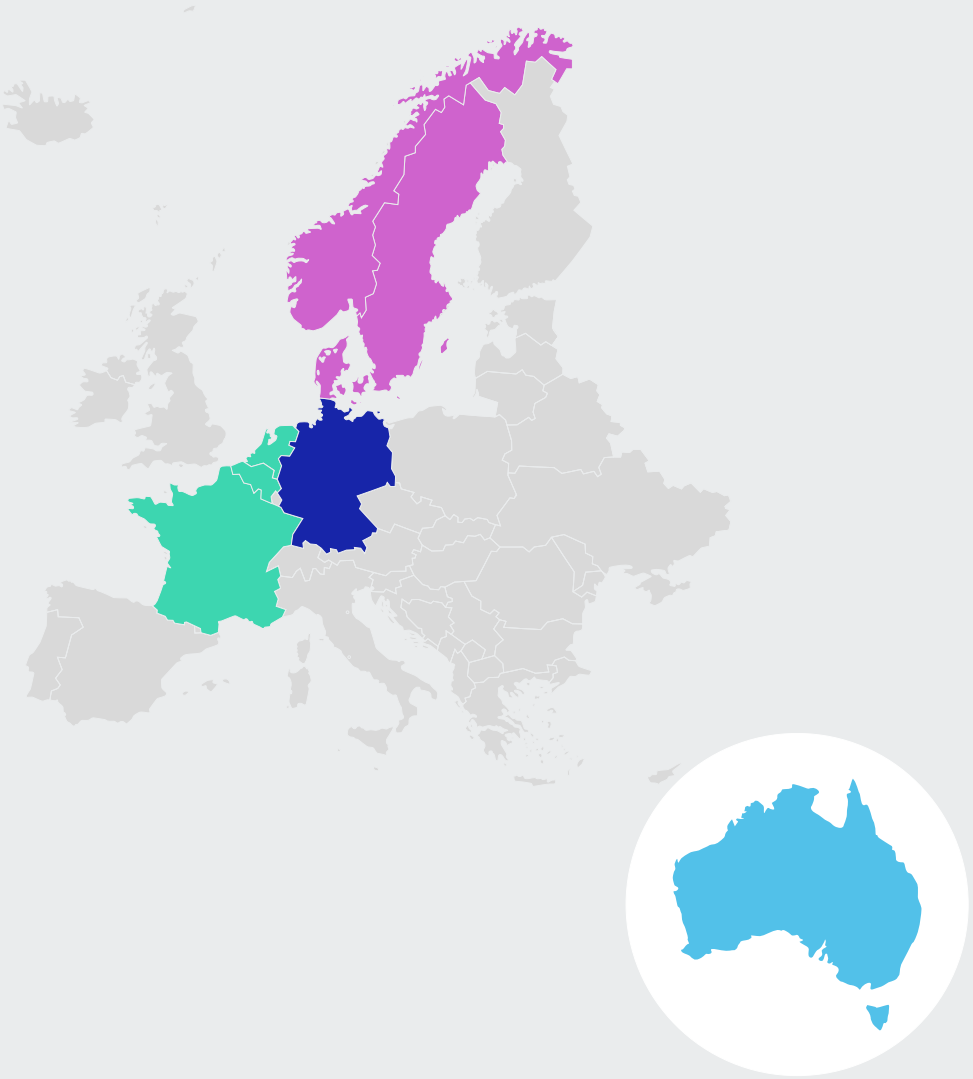


Figure 10: Sample composition of online survey by profession

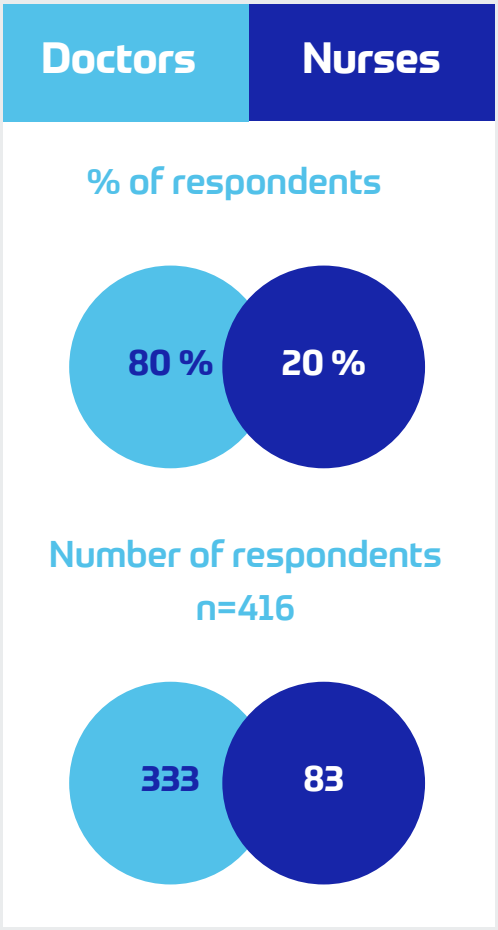


Figure 11: Sample composition of online survey by segment

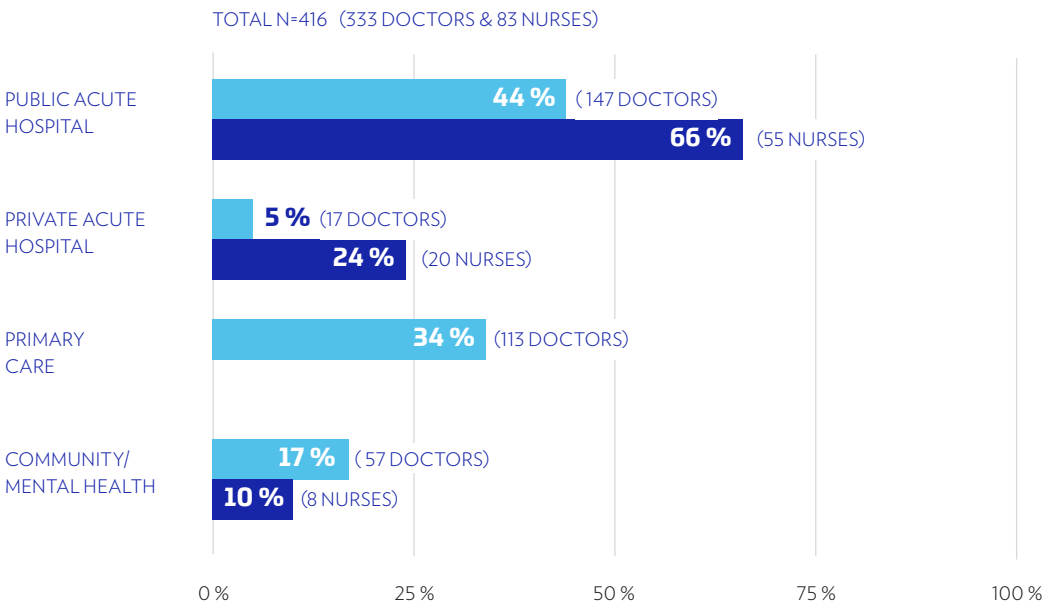


Figure 12: **Sample composition of qualitative telephone survey by country**

Australia
France
Belgium
The Netherlands
Germany
Norway
Sweden
Denmark
Finland
UK

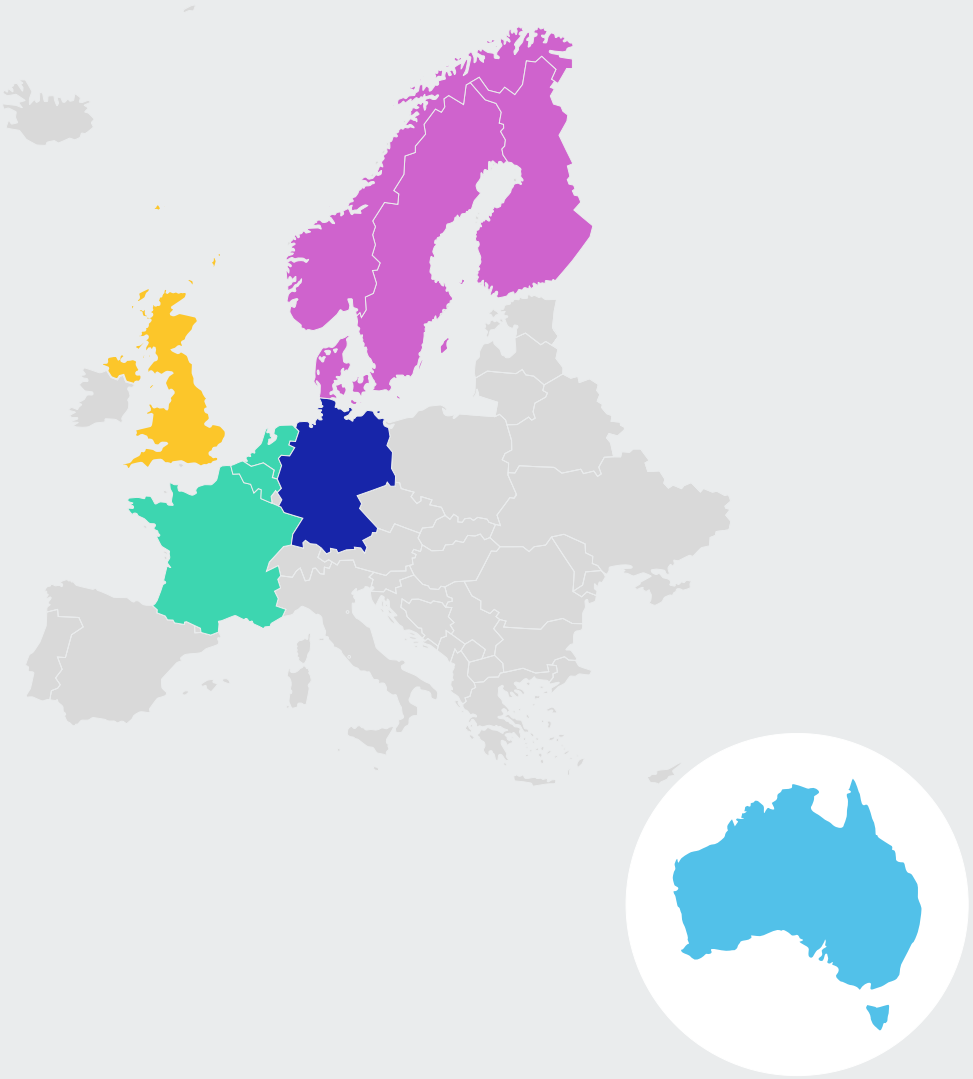
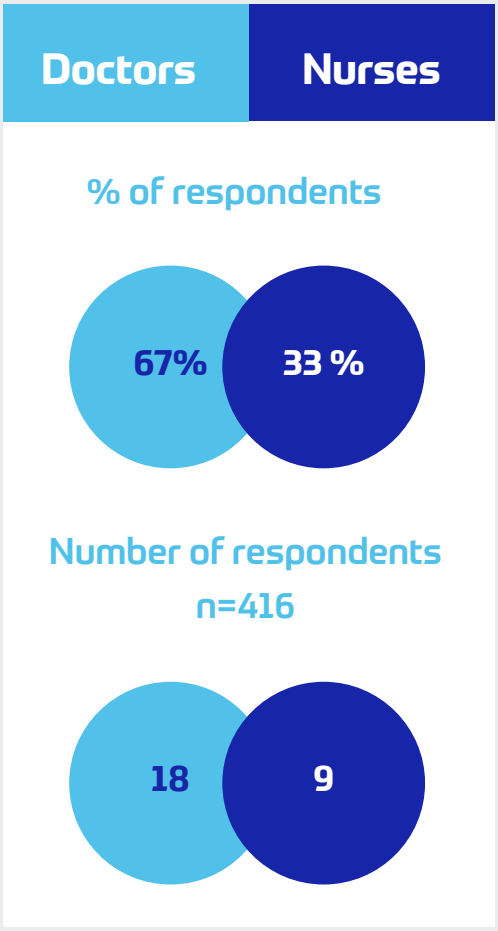


Figure 13: Sample composition of qualitative telephone survey by profession



About Nuance Communications, Inc.

Nuance Communications (Nuance) is a technology pioneer with market leadership in conversational AI and ambient intelligence. A full-service partner trusted by 77 percent of U.S. hospitals and 85 percent of the Fortune 100 companies worldwide, Nuance creates intuitive solutions that amplify people's ability to help others.

Trademark reference:

Produced by