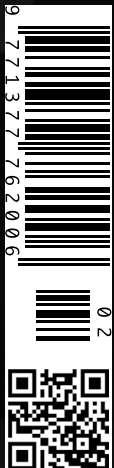




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[Prof. Werner Leodolter](#)

Editor-in-Chief, IT

CIO Kages, Austria
Speaker, Author, Professor
for Applied Management in
Healthcare Graz, Austria

Human Matters

The COVID-19 pandemic has put human resources under a huge challenge. Healthcare workers are facing mental health issues, burnout, discrimination, violence, issues with personal protection and safety, sexism, racism, shortage of resources and much more. Patients infected with COVID-19 are suffering from severe illness and helplessness. Normal citizens are facing a continuous fear of disease, social isolation, stress and anxiety. At the same time, the acceptance for digitally supported work with the patients is rising - concerning ehealth, eVisits, Robots or Artificial Intelligence in decision support. Will COVID-19 push us towards augmented and hybrid intelligence? Let us stay aware: human matters are and must stay in the driver's seat - supported by digital health.

In this issue, our contributors explore all matters related to human beings. In particular, they address the challenges people are facing as the pandemic continues. This issue is about healthcare workers, patients, families, caregivers and marginalised communities. It's about the struggle all of us are going through during these tough times.

Erik Van der Eycken discusses e-mental health solutions and how they facilitate the prevention, diagnosis and treatment of mental health disorders. Prof Geraldine McGinty talks about policies that contribute to health equity and solutions to ensure treatment decisions are free from bias and discrimination.

Prof Habeebul Rahman and Dominic Tung Kuan San discuss staff wellbeing and how a three-pillar approach – care, protection and wellness – could ensure wellbeing at work. Prof Caterina Corbascio and Prof Gianni Tognoni highlight that mental health is a neglected area of medicine and how innovative, diffuse and long-term research could help change deeply rooted paradigms of care.

Prof Stefan Heinemann discusses Artificial Intelligence and the

need for expert ethical evaluation of new technologies to ensure true benefits are reaped from the implementation of AI and data-driven care. Dr Sara Saeed Khurram and Dr Iffat Zafar Aga address the lack of female participation in the healthcare labour force in third-world countries and how the social phenomenon of doctor brides could be addressed to ensure female health professionals get equal opportunities to contribute and grow professionally.

Begoña San Jose highlights that healthcare should not be limited to physical health, but social and mental wellbeing should also be considered, and healthcare systems should be holistic so that humans not only survive but thrive. Prof Héctor González-Jiménez explores the 'human' dimension of the robotics deployment in a healthcare setting and the need for a smooth integration of the technology.

In the Management Matters section, Prof Generosa do Nascimento and Dr Alzira Duarte discuss people management and how the use of the Strategic Management of People model could prepare healthcare organisations to succeed and improve the delivery of care. Prof Davide Caramella discusses a physician's journey and how retirement can be a complex transition for many.

In the Winning Practices section, Marie Paldam Folker, Søren Lange Nielsen and Mette Atipei Craggs discuss the potential of digital mental healthcare and how it can improve access, flexibility and cross-sectoral collaboration into mental healthcare provision.

We hope you will enjoy this issue. As always, your feedback is welcome.

Happy Reading!

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Have your say. Engage!

The COVID-19 pandemic is proving to be a challenging time for people around the globe. In this issue, our contributors explore matters related to humans, whether they are healthcare workers, patients or their families. They look into mental health, burnout, discrimination, violence, personal protection equipment, patient safety, well-being and resilience, sexism, racism, unfair allocation of resources, health equity, personalised care, patient voice, humanism, and all other matters that we, as humans, consider important in healthcare.

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Subscription Rates (8 Issues/Year)

One year: Euro 106 + 5% VAT, if applicable
Two years: Euro 184 + 5% VAT, if applicable

Production & Printing

Total circulation 47,000
ISSN = 1377-7629

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Contributors



Mette Atipei Craggs, Belgium

Mette Atipei Craggs is a Specialist Consultant with more than 10 years of experience in health-care innovation and international collaboration, specialising in digital mental health. Mette is currently serving her second term as Vice President of EHTEL.

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Prof Davide Caramella, Italy

A member of the Imaging Editorial Board at HealthManagement.org, Davide Caramella is Retired Professor of Radiology and Chairman, University of Pisa. He is also Member of the “Dose Management Working Group” of ESR.

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Dr Caterina Corbascio, Italy

Dr Corbascio works for the Department of Mental Health for both Asti and Alessandria, Italy. Beside clinical and social activities, Dr. Corbascio has been involved in multiple national agencies and research projects dealing with mental health conditions related to patients and their families.

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Prof Generosa do Nascimento, Portugal

PhD in Management, specialised in Human Resources and Organisational Behaviour. Assistant Professor at ISCTE-IUL and Director of the Executive Master in Healthcare Services Management at ISCTE-Executive Education. The main areas of research are healthcare management and people management.

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Dr Alzira Duarte, Portugal

A PhD student, Dr Duarte is working in The Paradoxical Management of Corporate Social Responsibility. HRM Specialist teaches HRM at ISCTE-IUL. She has collaborations on journals, with papers and book chapters published. Her research interests include CSR e-HRM and healthcare management.

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Dr Héctor González-Jiménez, Spain

Currently an Associate Professor in Marketing (ESCP Business School, Madrid), Héctor worked in marketing, education and corporate strategy at various organisations and companies. His works now spans areas such as consumer behaviour and human-robot interactions.

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Prof Stefan Heinemann, Germany

With his work focussed on ethics and business of digital medicine and AI, Prof. Heinemann is a professor of Business Ethics (FOM), spokesman of the Ethics Ellipse Smart Hospital (UH Essen) and part of multiple professional and educational organisations in the healthcare sector.

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Dr Sara Saeed Khurram, Pakistan

Dr Khurram has over five years of experience in digital health care. She is the Co-Founder and Chief Executive Officer of Sehat Kahani, an all-female health provider network in Pakistan. She has received several notable awards for her role as a young and innovative entrepreneur.

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Søren Lange Nielsen, Belgium

Søren Lange Nielsen is a research assistant at the Centre for Telepsychiatry. Søren has worked within the healthcare sector in Denmark and abroad, researching the implementation, use and evaluation of digital interventions.

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Contributors



Prof Werner Leodolter, Austria

Prof Werner Leodolter is the CIO of KAGes. He has over 25 years of experience in information management. He is a member of the

Austrian Federal Ministry of Health's telehealth services commission and university professor of Applied Business Studies in Healthcare at the University of Graz and lecturer for Information Management at the Technical University Graz.

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Marie Paldam Folker, Belgium

Marie Paldam Folker is Director of Centre for Telepsychiatry. Marie is an expert digital mental health practitioner and has

worked in the healthcare technology field for over 10 years specialising in technological interventions for mental health.

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Gianni Tognoni, Italy

Dr Tognoni is the director of clinical and epidemiological research in major independent foundations, and a leading investigator in

international trials and projects. Ethics and human rights are his primary area of interest and direct interventions in his role as General Secretary of the Permanent Peoples Tribunal.

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Prof Geraldine McGinty, USA

Prof McGinty is President, American College of Radiology and a radiologist who specialises in the detection and diagnosis of breast cancer. She

is a passionate advocate for quality imaging and its vital role in the delivery of healthcare.

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Prof Habeebul Rahman

Prof Rahman is a Senior Consultant Psychiatrist, Head of Tan Tock Seng Hospital Department of Psychiatry, and Adjunct Associate

Professor at the Lee Kong Chian School of Medicine. He chairs and serves on several professional committees and boards.

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Erik Van der Eycken, Belgium

Erik is EU Research Project Officer at GAMIAN-Europe and represents the patient perspective in different EU-funded research projects. As a person with lived experience,

expert by experience in Mental Health he liaises GAMIAN and its members in the EU.

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Sourabh Pagaria, Siemens Healthineers

Sourabh Pagaria is responsible for Siemens Healthineers' business in Southern Europe. He is a thought leader on how Data, Artificial Intelligence and joint public-private approach can reshape the future of healthcare.

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Begoña San José, Austria

With background in Clinical Psychology, Health Services Research-Epidemiology and Business and Management,

Begoña worked for multinational insurance companies in Europe. Since 2018, she works independently in areas such as mental health, digital health, VBHC, etc.

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Dr Iffat Zafar Aga, Pakistan

Dr Zafar is the Co-Founder and Chief Operations Officer for Sehat Kahani, a telemedicine startup in Pakistan. She has received several

awards for innovation in telemedicine and was recently featured by Microsoft4Africa 2020 as a female success story in South Asia.

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Editorial Board



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Boots, UK

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Editor-in-Chief IT

CIO Kages, Austria
Speaker, Author, Professor for Applied
Management in Healthcare Graz, Austria
wl@healthmanagement.org



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Executive Director

HealthManagement.org, Cyprus
cm@healthmanagement.org

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Executive Director cm@healthmanagement.org

Iphigenia Papaioanou

Project Director ip@healthmanagement.org

Barbora Terešková

Vice President Client Management bt@mindbyte.eu

Anastazia Anastasiou

Creative Director art1@mindbyte.eu

Samna Ghani

Senior Editor sg@healthmanagement.org

Maria Maglyovanna

Staff Editor mm@healthmanagement.org

Katya Mitreva

Communications Director km@healthmanagement.org

Anna Malekkidou

Communications am@healthmanagement.org

Manal Khalid

Communications Assistant

Georgia Christofi

Graphic & Audiovisual Designer

Sandip Limbachiya

Head of IT

Sergey Chygrynets

Front-end Developer

Tania Farooq

Communication Assistant gdpr@mindbyte.eu



Brussels Office:

Rue Villain XIV 53-55, B-1000 Brussels,
Belgium

Tel: +32 2 2868500, Fax: +32 2 2868508

brussels@mindbyte.eu

Limassol Office:

166 Agias Filaxeos, CY-3083 Limassol,
Cyprus

Tel: +357 25 822 133, Fax: +32 2 2868508

office@mindbyte.eu

Headquarters:

9, Vassili Michaelides, CY-3026, Limassol,
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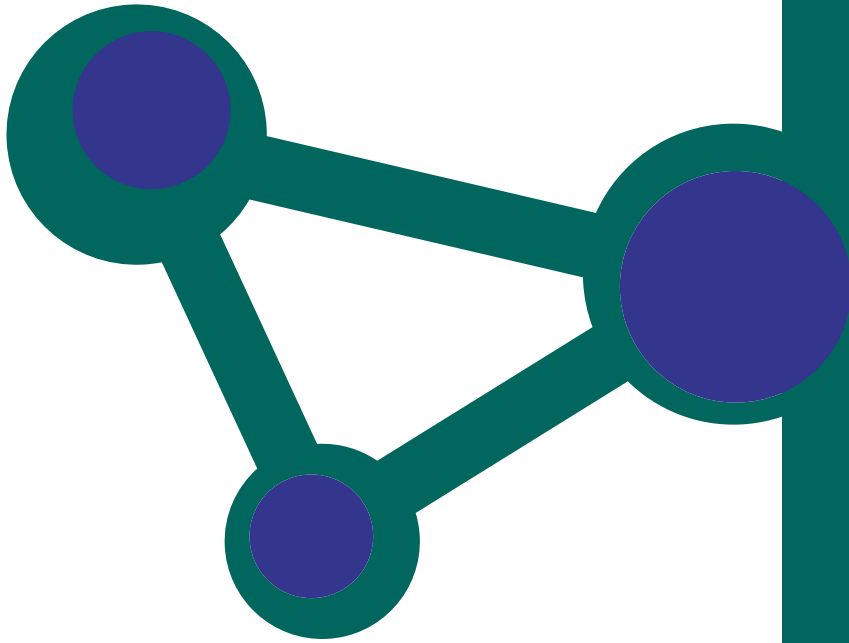
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MANAGEMENT MATTERS

“The COVID-19 pandemic has shown extreme weaknesses and generators of ‘fears’. The future is unknown”, *page 133*

Healthcare People Management

Preparing today's professionals for tomorrow

📌 Author: [Prof Generosa do Nascimento](#) | Assistant Professor | ISCTE – University Institute of Lisbon | Lisbon | Portugal

📌 Author: [Dr Alzira Duarte](#) | Graduate Teaching Assistant | ISCTE – University Institute of Lisbon | Lisbon | Portugal

Recent paradigmatic shifts in society as a whole and healthcare in particular demand organisations to change how they approach, devise and implement their management strategies. In this context, people management is one of the priority areas, and a team of experts suggest a management model underpinning the New Health Staff 2030 context.

Key Points

Lately the environment for organisations, particularly in healthcare, has been changing dramatically, especially since the start of the pandemic. Leaders need to focus on adapting to these new volatile circumstances.

- COVID-19 exacerbated the tendencies of the Fourth Industrial Revolution/Health 4.0 in terms of both healthcare context, strategic development, health service management models and people management.

- The Strategic Management of People (SMP 4.0) model brings forward the principles of equity, sustainability, accountability and responsibility through a number of integrated practices.

- With the human dimension at its epicentre, the SMP 4.0 model comprises three structuring vectors, i.e. the structure, the processes and the strategy respectively aligned with the domains of resourcing, developing

and engaging.

- For the above, values and organisational structure, communication as well as leadership are the three determinants of success.
- By 2030, efficient people management would mean the alignment of its perspective with the principles of the Super Smart Society.

The context of health service delivery has come under pressure and has been confronted with challenges unthinkable a few years ago. Management models, taken for granted in their processes and results, are now questioned about their suitability, flexibility, adjustment and responsiveness.

Health professionals who are decisive for the effectiveness and excellence of these organisations are now faced with new demands and challenges to which they feel sometimes helpless or unable to respond.

Leaders, from organisations to politicians, are now

confronted with other ways of being in society. They are now committed not only to responding to present needs, but above all to the preparation to respond to the challenges that the future may pose.

In line with the theme of this volume, 'New Health Staff 2030' a reflection on the most recent changes is important in the context of managing people in health services, main threats and challenges that are identified and the way of endowing these services with excellent professionals prepared for the action in the future.

Heading into Healthcare 4.0

The management of health services has particularities inherent to the characteristics specific to this type of organisation. Oriented towards the provision of preventive, curative and rehabilitation healthcare for patients using advanced technology, there are also places for teaching-learning, research and innovation. They are marked by the high autonomy and degree of technical-scientific specialisation of its multidisciplinary teams. Due to the complexity of its mission and structure, the definition of policies, strategies, people and process

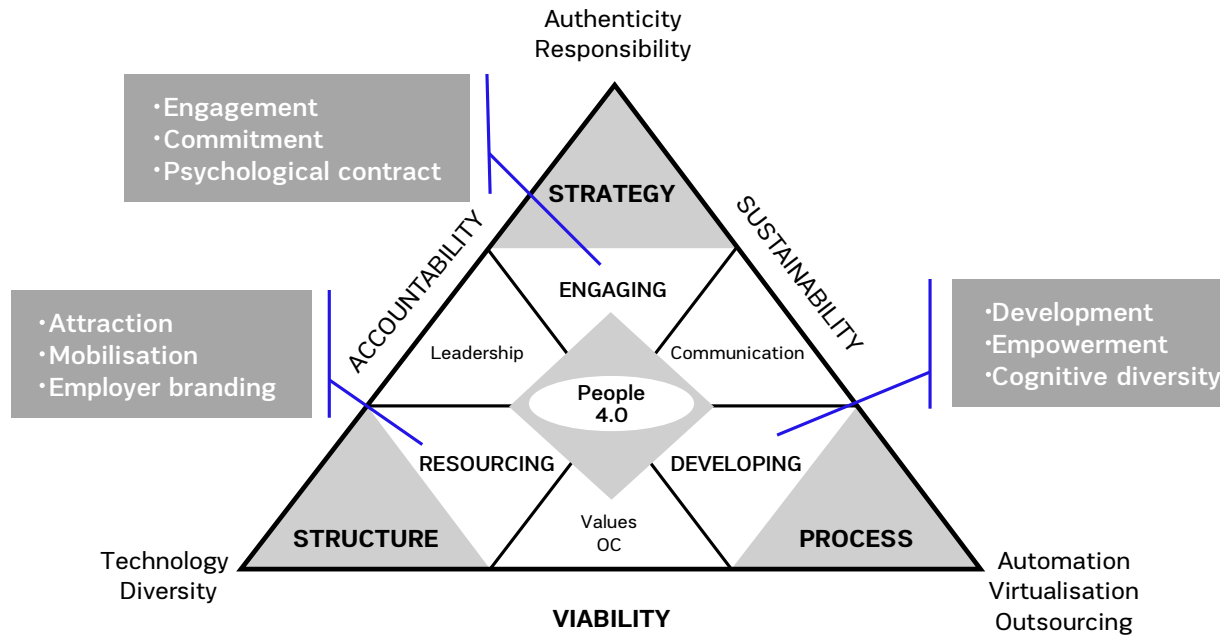


Figure 1. Strategic Management of People (SMP 4.0) [Duarte et al. 2019].

management require a deep level of knowledge and professionalisation.

Over the last few years, due to the phenomena of globalisation, the accelerated technological evolution, demographic and environmental changes, and the search for knowledge and its dissemination, among others, have propelled organisations towards strategies for customer/patient focus, resource optimisation, and new models of collaboration, innovation and flexibility. These organisational contexts were until recently called VUCA contexts (volatility, uncertainty, complexity and ambiguity).

Inevitably, also in the organisation of health and health care provision, these effects had an impact. There was a transformation in the way health was

understood and a consequent adjustment in the way of guaranteeing it. Technology and evolution of information systems has brought new opportunities to the context of health.

We are facing the emergence of Health 4.0 (Thuemmler and Bai 2017). The act of health provision is largely supported by the evolution that technology provides in terms of automation, big data and even virtualisation. These new processes allow to overcome failures and inefficiencies, optimising human action, streamlining processes and globalising action (for example, digital health). The relationship itself between providers and users undergoes significant changes and is guided by the optimisation of tasks and processes, and increased efficiency and quality of provision of services.

However, if in the last few years it was considered that the management of health services suffered huge pressure arising from the VUCA context and technological advances, now we are faced with even more significant changes.

The COVID-19 pandemic and the associated socio-economic changes have given rise to contexts sharply marked by frailty, anxiety, non-linearity and incomprehensibility (BANI contexts – Brittle, Anxious, Non-linear, Incomprehensible). The arrival of the current pandemic has shaken the world.

No scenario foresaw this magnitude. Although there are expected changes, the unpredictability of its emergence and its breadth has become an urgent challenge that waits for an answer. It is in this environment marked by instability and adaptability that organisations in general, and health organisations in particular, must achieve answers, sometimes totally new, and anticipate the action for the post-COVID-19.

Leaders must ensure the organisation's effectiveness at present, while guaranteeing resources and competencies that differentiate them in the future. For this sustainability it is necessary that they promote efficiency and organisational reliability, innovation and adaptation to the external context, always valuing human capital (people) (Yukl 2008).

The COVID-19 pandemic has placed the leadership of organisations in front of complex threats and challenges. It has shown extreme weaknesses, incomprehensible, some of them unimaginable, and generators of 'fears'. The future is unknown.

It is more and more imperative to keep in mind the importance and the need to prepare real experts for the future.

A Changing World

The changes, associated in 2017 by Schwab (2017) with the Fourth Industrial Revolution, had an impact on health as well. The digital revolution was characterised

by a more ubiquitous and mobile internet, artificial intelligence and machine learning, the use of more advanced and sophisticated technologies which are more integrated and allow interaction between the physical, digital and biological domains. This revolution brought about changes not only in the 'what' and the 'how' we do things, but also in the 'who we are'. It had systemic impacts and led to global transformations that also impacted health systems, with Health 4.0 considered as a paradigmatic shift and not just a stage of technological development. Schwab announced a "transformation fundamentally in the way in which we live, work and relate". But he also warned about the need to shape this revolution 4.0 so that it became empowering and more people-centred.

ii. From the user/patient view, in a logic of a sick person with complaints and needs, to the notion of customer/market as a stakeholder with rights, opinion and interests – movement of centring on the individual as an active partner in the health care relationship.

In **strategic** terms, the most impactful changes for the future of the health services are centred on:

i. Moving the focus from the disease and the sick, to the specificity of each situation and the active, responsible and participating citizen – movement to integrate new technologies, big data and intelligence of things oriented towards the wellbeing and quality of life.

ii. Reinforcement of responses oriented towards virtualisation and anticipation in detriment of the traditional model of proximity and presence – movement of full

management perspective that allows to respond in a timely and logically consistent way to potential challenges or threats in the future.

ii. Rethinking the purpose of organisations allowing to align the logic of efficiency, currently prevalent, with the logic of effectiveness in opportunity and response – the challenge of understanding earnings as future bets, often deferred in the form of value to the community.

iii. Betting on strategies focused on viability, but as well integrating the values underlying sustainability – a management model in which the notion of organisational success is anchored in the responsibility and in the creation of a shared value (community/society).

In terms of **people management**, recent movements allow for the anticipation and the defence of the need

The COVID-19 pandemic has shown extreme weaknesses and generators of 'fears'. The future is unknown

It is, however, in 2020, with the pandemic context that this reflection and also the impact on human dimension becomes more relevant. COVID-19 and its effects brought to the management of health services a sense of relevance and urgency that goes beyond the mere effects of technological evolution. It has become a revolution of thought and action that originates and reinforces a set of changes that should be considered in the future.

In terms of **health context**, there are two main changes/movements:

i. From the segmentation of sectors and markets to anchored management models, reinforcing the complementarity and interdependence of services and sectors – integrative 'coopetition' movement instead of uncritical competition.

integration of models supported by the evolution of automation and digitalisation, in addition to their operation in networks and in the cloud.

iii. Alignment between the need for specialised communication but with a focus and a sense of purpose – aiming at the reinforcement of the health services user's integration as an active partner, with literacy and understanding that allows them to act and choose consciously.

In terms of **health service management models**, the main challenges exist in the alignment between traditional modes of operation and those that emerge from learning resulting from the pandemic context:

i. Evolution of an integrated management logic that respects options for 'just in time' without ignoring the importance of 'just in case' – an anticipatory

for an increased concern with the type and the way the values and competencies are integrated into health organisations.

i. Technical specialisation (specific, acquired and updated knowledge) has to be accompanied by a deep plasticity in its use – a movement of dynamic multidisciplinary with functional polyvalence in different contexts and with differentiated structures.

ii. Recognition and reinforcement of the complementarity of Power Skills (soft skills, thinking skills and digital skills) as a condition for individual and organisational success in contexts of unforeseen or unknown challenges and threats.

iii. Reinforcement of equity, liability, accountability and sustainability values in a logic of ethical transversality between sectors, contexts and situations.



The trends and challenges set out allow to justify the perspective of Health 4.0 and to anticipate a new future of greater demands and requirements, compatible with a leap in terms of individual responsibility and wellbeing, all underlying a Super Smart Society (Society 5.0).

Managing Future Health Professionals

Regarding this reflection on the preparation/management of the future professionals, a set of questions comes out, for which we will have to find answers.

How to attract and retain talent for these organisations? How to manage the quality of the relationship and the quality of work context? How to foster cognitive creativity and flexibility? How to implement complex problem-solving strategies that are customer-oriented, where the customer has become increasingly informed and involved (in terms of higher intervention)? How to promote inclusion, equality and non-discrimination? How to monetise and profit from people, structures and models that would allow the expected results?

To answer these questions, it is fundamental that health service management is anchored in a strong and aligned management of people. We present a model of **Strategic Management of People (SMP 4.0)** (Duarte et al. 2019) in which the principles of equity, sustainability, accountability and responsibility dominate through a set of integrated practices of:

- Strengthening investment in **skills development** (lifelong learning) by the use of new models of knowledge sharing and development. Models based on the reinforcement of collaborative and multidisciplinary networks and on heutagogic strategies, where the protagonism is on the learners.
- Diminishing the importance of educational models for training/employment resulting from the traditional STEAM approaches (Sciences, Technology, Engineering, Arts and Mathematics). And making such models transversal and integrated in a **World Web Learning logic** (WWL).
- Adding to the **competencies 4.0** (technical, social and personal skills) the domains of Design Thinking and Critical Thinking, which are more oriented towards the development of Power Skills (soft skills, thinking skills and digital skills).
- Giving more weight and value to the **'mixed workforce'** – people and robots/technology working together: workers always connected, in multiple contexts in an anytime, anywhere model.
- Expanding artificial intelligence (**AI**) to **HR processes** (recruitment, remunerations, etc.).
- Using and promoting **AI in a conscious, ethical and responsible way**.
- Promoting a **culture of safety and high performance**.
- Making an **employee's experience and happiness** a top priority, and creating **sustainable environments** (quality of life and wellbeing, diversity, inclusion and collaborative networks).



- Offering both organisations and people a **sense of purpose added** to their work/function, while taking into account the social/environmental/family and organisational factors.

- Understanding and welcoming the **‘Digital Protean Worker’** (highly qualified, with high digital and soft skills, with an interest for geographic and organisational mobility, and mobilised by values of achievement and social commitment).

SPM 4.0: A Model for Strategic Management of People

To respond to the identified challenges in health services, the **Strategic People Management Model**

integrates the main changes and concerns presented, and also constitutes a guiding framework for action in the future.

The model (Figure 1) is synergistically articulated around three structuring vectors, having as its epicentre the human dimension (people and their experiences). The structuring vectors are:

- The structure** is understood as the organisational design and results from the identification, analysis, ordering and grouping of the activities and resources of the organisations. It contains all the essential resources for being functional (material, relational, capital, informational, etc.), and their interactions. The structure should be agile and flexible enough to

be able to respond to rapid and uncertain changes. It should also increment new collaborative models and partnerships with the stakeholders (internal and external) developed in a logic of responsibility and confidence, enhancing organisational results and predictability of the action.

- The processes** include the set of activities, methods and routines specific to health organisations, which are aiming at maximising the value in health and wellbeing.

- The strategy** is defined as the mediating force between organisations and their environment, characterised by a pattern or a plan that integrates the main goals, policies and tactics of an organisation for the pursuit of its objectives and goals. Anchored in a vision of the future, it allows the allocation of resources (structure) and the assimilation of processes that guarantee in advance a differentiation in the face of contextual premises. It is the strategy that ensures viability and sustainability conditions of the organisation.

In articulation with the three structuring vectors of organisations, there are three key domains of people management that deserve to be highlighted. These three areas are:

- Resourcing** – aligned with the Structure vector, its purpose is planning and prospecting, and the attraction, identification and selection of talents that are essential to the provision of health services. It supports employer branding dimensions, recruitment and selection, and management of talent mobility.

- Developing** – aligned with the Processes vector, it aims at the development and empowerment of people and the creation and diffusion of knowledge. The characteristics of this new digital-knowledge workers demand a paradigm of continuous learning and reinforcement of life experience. The acquisition and dissemination of knowledge, the management and evaluation of performance all have requirements for

personalisation and sharing, and come with expectations of a quick and permanent feedback. It should have a purpose of improvement, recognition and motivation and provide an attractive experience. It is no longer enough for people management to incorporate technologies to facilitate managerial process and traditional administrative procedures. A new form of self-regulation of learning and assessment, which is personalised and self-managed, encourages taking advantage of opportunities arising from social, mobile and cloud technologies, and the virtualisation of numerous processes and procedures.

iii. **Engaging** – aligned with the Strategy vector, this domain has the purpose of fostering and managing workers’ commitment to the organisations. Committed workers not only contribute more strongly to the organisational success but also manage to benefit from and make use of, more effectively, their capacities and competencies and abilities. It is important that People Management 4.0 takes into account the drivers of organisational engagement and integrates them into its policies. The importance of meaningful work, the opportunity to participate and develop rewarding relationships, and the emergence of inclusive policies, associated with a culture of trust and empowerment, will have to be allied with remuneration policies and attractive careers.

To guarantee the alignment between the structuring vectors (structure, processes and strategy) and the key domains of intervention of people management (Resourcing, Developing and Engaging), it is important to consider the three determinants of success:

i. **Values and organisational culture** – mediating the structure and the processes, it is characterised by two distinct and inseparable perspectives: the individual and the organisational. Regarding individual terms, it is important to put the emphasis on ethical concerns and societal commitment (social and environmental), all consolidated in patterns and standards

of autonomy, responsibility and development. The sharing of these values fosters, in organisations, new ways of being. The organisations, in their turn, integrate these values and develop cultures of flexibility, inclusion and innovation, all anchored in principles of trust and commitment. This combination results in what is the ultimate motive of the organisation and its contribution to society – the sustainability.

ii. **Communication** – determined by strategy and processes, it assumes and takes on a determinant role in people management and in the success and consolidation of the organisation’s identity. Thus, concern and increased care for internal communication (both formal and informal), as well as for external communication, becomes essential and extremely important.

iii. **Leadership** – it is a hinge between the strategy and the structure. Leadership has to derive and assimilate change towards the development of strategies that encourage innovation and active learning across the organisation, with the focus on people’s engagement. This challenge calls for new leadership competencies and skills that are structured in relational terms (e.g. development of a culture of trust, authentic communication, promotion of individual and team development, and ensuring the inclusion of individual interests and values). Regarding technical terms, leadership must be able to challenge the status quo and promote creativity and innovation, as well as develop benchmarking and networking initiatives that ensure the updating and the ability of responsiveness, in a context that is permanently and rapidly changing. The 21st century leader will assert themselves by their adaptive and disruptive practices, by their integration of values and implementation of growth strategies and also by value creation for society.

In Summary

With the challenge of managing people in 2030, we believe that the core will be effectively in a perspective

aligned with the vision of Society 5.0 (Super Smart Society). A society with solid values of equity, responsibility, accountability and sustainability. A society in which it will be fundamental to (re)think and (re)position the technologies to improve humanity’s quality of life.

Based on the learning resulting from the management of people in the turbulent context of the COVID-19 pandemic, we believe that, more than ever, human and social capital will be the determinant of organisational success, and a competitive advantage for organisations, in general, and for health, in particular.

We must guarantee a society of values, in which technologies are not an end in themselves but rather a means for a better life.

We need the world to remain Human and health professionals who assure that!

Conflict of Interest

No conflict of interest declared. ■

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Recruiting a Retired Physician: Our Experience

Author: [Prof Davide Caramella](#) | Retired Professor of Radiology and Chairman | University of Pisa | Italy

An overview of a physician's journey and the impact of retirement and a presentation of an example of an anaesthetist who worked ten years in our radiology department after his retirement.

Key Points

- Fernando Burchi retired after working 31 years as a hospital anaesthetist. Aged 62, he was ready to continue serving the wider medical community in a less demanding way.
- During the ten years of Fernando Burchi's service as an attending anaesthetist in the radiology department, the on-call anaesthetists were relieved of part of their workload and experienced a significant decrease of requests for intervention by the radiologists.
- Radiology residents and staff radiologists showed a distinct interest in seeking his advice for preventing or treating contrast media-related adverse events. In fact, his presence during radiology sessions guaranteed increased safety to patients.
- The shorter disruptions of the radiological workflow resulted to be an unexpected benefit of the attending anaesthetist, who helped to achieve marked reduction of delays during the sessions.

In an insightful review published in 2018, Harriet Gordon notices that part of the workforce crisis is due to the fact that most physicians retire around the age of 62, contributing to a potentially dangerous trend in consultant physician appointment rate that has fallen from 73% in 2008 to 55% in 2017 (Gordon 2018; Royal College of Physicians 2016).

On the other hand, retirement can be for physicians a complex transition that not only raises questions about financial stability but also stirs up issues regarding work identity and one's sense of social responsibility. In fact, the negative association with retirement often emanates from the simple fact that for many physicians, work identity is synonymous with personal identity (Pannor 2016).

This may be the reason why many retired consultant physicians return to the active workforce and constitute 5% of the total workforce in the UK, albeit 81% of them work less than full time (Royal College of Physicians

2018). The reasons for returning to work after retirement may include greater fulfilment, wanting to work but not as previously, and a desire not to 'throw it all away' (Gordon 2018).

In this paper, an example is presented of an anaesthetist who worked ten years in our radiology department after his retirement. Fernando Burchi (Figure 1) retired after working 31 years as a hospital anaesthetist. He had a successful career and had endured operating room pressure and out-of-hours work. Aged 62, he was ready to continue serving the wider medical community in a less demanding way, possibly as a part-time attending anaesthetist in the radiology department and a clinical mentor.

When I first interviewed him, I was immediately convinced that recruiting him was a very good idea. The opportunities I saw were:

- to use his support for mentoring our staff, thus

improving the care delivered to our patients (most of whom are oncological referrals).

- to have him teaching our nurses in performing painless venopunctures also in patients whose veins are particularly difficult due to advanced age or previous antineoplastic systemic therapies.
- to leverage his presence for enhancing our radiologists' commitment in taking direct action to tackle contrast media-related adverse events.

The main challenges that I was expecting were:

- how to introduce a non-radiologist in our team, overcoming departmental scepticism.
- how to avoid a negative reaction of the hospital anaesthetists that were traditionally called for support in the radiology department in case of need.
- how to obtain funding for this new part-time position.

The easiest task resulted in being the seamless integration of the anaesthetist in our radiology team. He



Figure 1. Fernando Burchi is seen on the left while he is assisting a patient prior to CT, together with a technologist and a nurse.

was immediately recognised as a valuable working partner by the nurses who frequently involved him in the management of difficult venous accesses. Radiology residents and staff radiologists also showed a distinct interest in seeking his advice for preventing or treating contrast media-related adverse events. In fact, his presence during radiology sessions guaranteed increased safety to patients with previous history of allergic reaction and to patients with asthma, urticaria, and angioedema. When an allergy-like reaction took place, the attending anaesthetist ensured immediate coordinated team response: from the technical manoeuvres executed by the nurses to the treatments carried out in accordance with established guidelines.

During the ten years of Fernando Burchi's service in the radiology department, the hospital anaesthetists were relieved of part of their workload and experienced a significant decrease of requests for intervention by the radiologists.

Time is Critical

When allergy-like contrast media reactions take place, speedy recognition and treatment are mandatory: in this case, the presence of an attending anaesthetist is useful to guarantee optimal patient care because it cuts to zero the time needed for the anaesthetist's intervention. On the contrary, when an attending anaesthetist is not part of the radiology team, depending on the priority of the radiologist's request to the on-call anaesthetist, the delay between request and intervention can vary between five and 20 minutes.

To overcome easy problems such as difficult venopuncture, mild symptoms after contrast administration, time is not an issue in terms of patient care. However, when the delay is significant, the disruption of the radiological workflow may be of concern. In fact, an unexpected benefit of the attending anaesthetist in our department was the improvement of the radiology workflow obtained by minimising delays during the sessions.

Funding

Hospital management is typically hard to convince when a new position is created where it was traditionally absent. Moreover, it would have been unwise to give the impression to the anaesthesia department that we were competing with them in the recruiting of a young anaesthetist, who we were going to distract from the core business of their department.

Therefore, I submitted a request for funding the part-time employment of a retired anaesthetist to a charitable institution, the Gioia Foundation (Caramella and Mian 2021), which agreed to support ten years of salary (the contract is due to expire on May 31, 2021).

During this time, the hospital benefitted from the investment of the charitable institution in terms of:

- better patient care thanks to early recognition and treatment of signs and symptoms of contrast media adverse events.
- improved radiological workflow with decreased delays during the sessions.
- reduction of radiologists' requests for intervention to the on-call anaesthetist, thus allowing more time for the anaesthetists to carry on their core business.
- hands-on training for nurses and radiology residents.
- improvement of the working conditions within the radiology team.

Indeed, everyone was greatly reassured by the presence of the attending anaesthetist, who could intervene swiftly, solving minor clinical issues and could be readily available in case major problems arose during the examinations.

Conflict of Interest

None. ■

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STORIES

“By offering low-threshold online help at an early stage, emerging complaints can be prevented from developing into a serious mental health problem”, *page 142*

Person-based e-Mental Health Care

A view from users' and caregivers' perspective

Author: [Erik Van der Eycken](#) | EU Research Projects Officer | GAMIAN-Europe | Ixelles | Belgium

E-mental health can play a role in the entire mental health care service, from data management to prevention, diagnostics, treatment, effect measurement and aftercare processes. There is a clear preference for blended care (face to face in combination with ICT-based therapy) for treatment interventions, selected carefully and adapted to the needs and the client, thus person-based. With COVID-19, experience in video consultations has been gained rapidly and the question arises how closely a teleconsultation can approach the 'human-like' circumstances of a normal therapeutic conversation.

Key Points

- E-mental health solutions can facilitate both prevention, diagnostics and treatment of relevant disorders, as well as help with outcome monitoring and relapse management.
- Mental health issues are highly individual and so should be the application of e-mental health care, going beyond fixed protocols/ICT programmes.
- The use of teleconsultations, while on the rise, imply a number of specific challenges as opposed to face-to-face care, which should be accounted for.
- E-health care solutions must be properly evaluated by all stakeholders including patients/users.
- The COVID-19 pandemic has exacerbated the problems associated with poor mental health, and this trend will continue. It is important to give mental health due attention, and an EU Year for Mental Health might be a first step in this direction.

Overall Importance of E-Mental Health

E-mental health was introduced at the beginning of this century and refers to the use of digital information and communication to support and improve mental health care.

E-health apps, websites with health information, video and teleconsultations as well as ICT for supporting processes, such as digital registration and electronic health record management, are a few

examples. E-mental health can play a role in the entire health care service from data management, prevention, diagnostics, treatment, effect measurement to aftercare.

E-mental health applications offer the possibilities to reduce complaints due to mentally stressful circumstances or related to a mental disorder. This preventive care can occur in various forms, e.g. websites with psycho-education, self-tests and even treatment

programmes with and without professional guidance. By offering low-threshold online help at an early stage, emerging complaints can be prevented from developing into a serious mental health problem.

Questionnaires and structured interviews are widely used to measure nature and severity of mental complaints. E-mental health could support this 'psycho-diagnostic' process. The questionnaires are then offered online via an e-health platform. After



completion, the scores are automatically calculated and the care provider can often choose from different norm groups. In this way it is immediately clear how the client scores compared to this norm group.

Another category of e-mental health tools includes treatment programmes, for example, a depression-treatment programme based on computerised Cognitive Behavioural Therapy (cCBT) ([H2020-MasterMind](#)).

A psycho-education application combined with a number of exercises, advice and tests could be part of it. This internet-based treatment can be offered with or without the intervention of a caregiver.

In the early introduction period of e-mental health, focus was mainly on programmes without supervision or interactive support of a professional. These are the so-called 'self-help' programmes. However,

therapy compliance turned out to be low and many clients dropped out halfway through the process of treatment. Therefore, in recent years, a clear preference for blended care (face to face in combination with ICT-based therapy) has been established. The 'online' components and face-to-face conversations do not stand alone, but are connected to each other. The online interventions are carefully selected and adapted to the treatment and the client. Separate e-health interventions can also be used to support regular treatment, such as a video explaining a certain treatment method or disorder, a mindfulness exercise, or a digital diary form.

E-mental health can also play an important role in the **implementation of Routine Outcome Monitoring (ROM)** to measure the complaint level and thus monitor the effect of the treatment. By measuring and comparing the complaint level at different moments, the treatment result can be made transparent. On the basis of interim results, a care provider can decide to adjust the treatment.

After the treatment, client accounts often remain accessible and continue to provide access to psycho-education, exercise material, or other diary functions that were used. Many treatment programmes even end with a module specifically aimed at relapse prevention. The client can consult various tips to maintain a healthy and resilient life after the treatment.

Psychological Complaints Are Often Complex

The extent and benefits of e-mental health depend on the specific situation of the client. Every client is different and the result of applying e-mental health will vary to a greater or lesser extent and in a different way for the recovery. To be able to use e-(mental) health, it is, of course, necessary that the client has access to the internet. Unfortunately, this is not the only necessity. A minimal degree of self-sustainability



and digital skills is required to experience a significant level of comfort by the client to achieve benefits from e-mental health care. Some groups of clients such as elderly, clients with a (mild) intellectual disability, severe mental disorders, low-literate people, non-native speakers require extra attention for the effective use of e-mental health.

Taking these aspects into account, one could argue that there is little difference between e-mental and e-physical health care.

However, within specialised mental health care, psychological complaints are often too complex for a fixed protocol/ICT programme. A face-to-face contact is preferred for process-related matters, such as the introduction of a medicine or treatment, the discussion of thoughts, feelings and other behaviours resulting from a mental disorder.

mental illness, experiencing mild to moderate symptoms of mental illness. There is almost no evidence of using e-mental health in people with complex/severe mental illness or elevated risk of self-harm or suicide to improve their health condition.

Video Consultation for Mental Health Care

Because of COVID-19, experience in video/teleconsultations and e-mental health applications has rapidly built up. In a few months' time, many persons found their way to telehealth care services. A few specific aspects, positive and negative, related to video consultations were identified in the real world, both from clients' as well as professionals' perspective (Desmet 2020).

(Increased) sessions of teleconsultation led to a higher degree of fatigue for patients and

safety guidelines needs enough attention to put the client at ease to participate in a therapeutic teleconversation.

On a more subtle level, but somehow important for a therapy, silence during a teleconsultation was perceived differently than during a personal therapeutic conversation. In a 'normal' therapy session, a moment of silence is a time the patient is allowed to 'simply exist' without speaking in the presence of the therapist. The moments of silence during a teleconsultation usually last longer with the client often asking if the connection is lost or something else has happened. Both patients and caregivers have had this experience.

But the most striking difference between a video session and a personal one is the abovementioned dampening effect in combination with the absence

By offering low-threshold online help at an early stage, emerging complaints can be prevented from developing into a serious mental health problem

Without real face-to-face contact, non-verbal communication (such as posture, motor skills, facial expressions) is lacking. This can cause the therapist to miss or misinterpret important information. The reverse can also be the case: face-to-face contact can mislead the therapist.

From that point of view, there are some differences between e-mental and e-physical health care. Human(-like) interactions and communication between caregiver (e-applications) and client have a more comprehensive role in the treatment of mental health problems. In this sense, it is clear that with e-mental health care best results can be obtained for persons with a risk of developing

professionals. This feeling of increased fatigue somehow dampens the dynamism of the consultation. In a longer term, this effect should not be underestimated.

On the other hand, for some clients, a digital wall with teleconsultation has lowered the barrier to talk about certain topics that were not discussed in normal consultation, e.g. personal sexuality, fantasy thoughts and their effect on mental health.

In most cases, outpatient care was provided with the person at home, often revealing privacy concerns due to not being home alone which made the person feel uncomfortable to speak openly. In a similar context, compliance with data security and patient

or physical presence of the therapist. A possible explanation for this can be found in the nature of a learning process through an interaction between two people. The learning process, to a certain extent, the therapeutic process cannot be exclusively attributed to information transfer. In itself there is almost no difference in information transfer between a video and a physical conversation. But the non-verbal communication, the facial expressions, etc. are part of speaking to each other. The conversation between people is in fact a physical process in which there is a kind of subconscious resonance between the conversation partners. By this, we get into the deeper state of mind and

subjective physical condition of the other person. This process happens at an extremely high speed, reflectively and unconsciously.

The question therefore arises whether we can realise this phenomenon of interaction during teleconsultation.

380,000 E-Health Apps; 20,000 on Mental Health

Nowadays, there are approximately 380,000 health apps available through Apple and Android operating systems worldwide; around 20,000 of them address mental health. The type of application varies from interactive, passive, serious games, wearables to virtual and augmented reality among others (Crombez 2020).

Again, COVID-19 has created momentum for the full development in this domain of e-mental health. At the same time, there is a need for high-quality tools that should make a difference in practice as for high-quality evaluation of these tools, taking that practice into account. These developments should not be based on a cookbook method, but have to be tailor-made so that 'informed decision-making' by healthcare facility, practitioner and patient becomes possible (EFPA; DuBois 2019; Lagan et al. 2020). Two pertinent questions exist: how can we learn to distinguish quality and how can we learn to select tools?

For this, various development frameworks should be looked at, i.e. intervention mapping, behavioural intervention technology, CeHReS roadmap and person-based approach whereas all have a systematic approach in common (Bartholomew et al. 1998; Mohr et al. 2014; van Gemert-Pijnen et al. 2011; Yardley et al. 2015).

This approach has to comprise careful analysis of context and health problem, involvement of various stakeholders (patients, healthcare providers,

managers, etc.), step-by-step iterative development by an interdisciplinary team, feedback and adjustment from stakeholders (not to forget the patients/users), evaluation and finally, the implementation and integration in care pathways/systems.

(E-)Mental Health Should Be Everyone's Business

Awareness of the importance of mental health has never been so high: the COVID-19 pandemic has truly put the spotlight on mental health. Rates of anxiety and depression, already increasing as a consequence of the pandemic and related measures, will only increase further as a result of the predicted economic uncertainty. Moreover, the pandemic has revealed systemic problems in the way society treats mental health, as services have not been able to keep up with growing demand.

According to the OECD/European Commission (2018), mental ill-health affects more than one in six people across the European Union in any given year, with a total cost of over €600 billion – or more than 4% of GDP – across the 28 EU countries. Mental ill-health can affect persons at any age and in a variety of forms (e.g. depression, bipolar disorder, schizophrenia, ADHD, etc.). Mental ill-health has costs and consequences that impact individuals, families and carers, health and social systems, employers, communities and the economy. Poor mental health is consistently associated with unemployment, low income or standard of living, poor physical health, challenging life events, poor quality of life, stigma and taboo. Mental health disorders are the fastest-growing current health burden: neuropsychiatric disorders are responsible for one-third of all disabilities, for 15% of inpatient costs and for a quarter of all medication costs. Dealing with mental health problems involves a range of services such as health and social care, employment, education

and housing, which are often not aware of the scale of the problem. Moreover, millions of days of work are lost each year due to mental ill-health.

That is why we should make Mental Health Everybody's Business – rather than only the business of those people directly affected by mental ill-health. And this is why GAMIAN-Europe is [campaigning](#) for an EU Year for Mental Health as an important stepping stone towards a comprehensive EU Mental Health Strategy and to make mental health everybody's business.

Conflict of Interest

None. ■

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Successful Implementation of Enterprise Imaging Solution at Canisius Wilhelmina Ziekenhuis

An overview of the implementation and integration of an Enterprise Imaging Solution at Canisius Wilhelmina Ziekenhuis (CWZ), Nijmegen, the Netherlands.

Canisius Wilhelmina Ziekenhuis (CWZ) in Nijmegen is one of the 27 top clinical teaching hospitals in the Netherlands. The hospital's main branch is located in Nijmegen. This branch has 28 medical specialisms, eight paramedical departments and five urgent-care departments and IC units.

Background

The hospital had two PACS systems in 2017 - one for radiology, nuclear medicine and cardiology and a second one for images from other departments. Only three departments were connected to the second PACS system. The team at CWZ wanted to establish a system that would enable all specialists to request examination and testing from within the EHR, and these requests/orders would be communicated to the department that would generate the images. The images would then come back to the specialist, who could then make the report in the EHR. In other words, CWZ was looking for an image-management system that would be automated, EHR-driven and standardised. The goal was to create a system where all images would be centralised in one consolidated environment.

Integration of Enterprise Imaging Platform

Agfa HealthCare's Enterprise Imaging solution fit the hospital's needs and includes:



Image Credit: Javi Gomes



- Enterprise Imaging Platform that offers the ability to bring images from all departments together in one consolidated environment.
- XERO Universal Viewer application that is integrated into the medical record and which allows doctors to view medical images.
- XERO Capture that allows users to quickly and easily transfer images made with mobile devices to the Enterprise Imaging platform.

The project leader from CWZ worked in consultation with Agfa HealthCare and developed a team comprising three functional application coordinators, one technical application coordinator, a radiographer and two people for the EHR. The team was responsible for implementing the Enterprise Imaging platform at CSW. The project was divided into eight phases, and each phase lasted three months:

- Phase I - The project team was trained, and the infrastructure and applications needed for the roll-out were set up.
- Phase II - The first three departments were connected. This was done in close collaboration with the project team and Agfa HealthCare.

In each of the following phases, the system was rolled out in two or three departments.

Improvements with Enterprise Imaging

With Agfa HealthCare's Enterprise Imaging solution, CZW was able to bring together all their medical images into one system. In addition, the integration of this system with the EHR has made it faster, efficient and more secure. CZW was able to generate significant returns on quality, the satisfaction of staff, and regulatory compliance. In addition, the hospital was able to generate significant time savings. For example:

- Ultrasounds in the gynaecology department used to be printed out, labelled and scanned. The process was time-consuming, and image quality was poor. With the Enterprise Imaging platform, the hospital was able to

generate time-savings of 2-3 minutes per examination. At 20,000 examinations per year, this is a cumulative saving of 700 work hours.

- The Doppler examinations in cardiology were also printed out and scanned. With the new system, the department generated time-savings of 4 minutes per examination. At 800 examinations per year, this is a cumulative saving of 53 work hours.
- Hearing tests in the ENT department were printed out and scanned. With Enterprise Imaging, the department could save 1-2 minutes per examination. At 5300 examinations per year, this resulted in a cumulative saving of 130 work hours per year.
- A total of 225 work hours per year were also saved for the ultrasound, endoscopy and urodynamic examinations in the urology department.

Another example of the use of Agfa's Enterprise Imaging platform is in the dermatology department. Under the old system, photos were taken with a camera and saved on a network disc. But with the new system, an order is generated in the EHR. With the Capture tool from Agfa's XERO Universal Viewer, the photos are added to the order in a simple and secure manner. The report and the images can easily be linked, and all related patient data is collected in a secure place. Similar efficiencies were observed in other departments as well. The entire process has become faster, ensuring that the patient's course of treatment is not delayed.

With the old system, images could only be viewed by the specialist who performed the examination and not by those who submitted the request. Often, the images were stored in locations that could not be located easily later on. With the new system, images are always accessible for specialists, along with the results. Specialists can inspect images using the XERO Viewer that is integrated into the EHR. Images are easy to locate, and the entire process is much faster. A doctor from a different department can see the examinations a patient has undergone. This can help avoid double examinations.

The centralisation of all images in one system has also made it easier to manage and control everything. Everything is logged and recorded. The platform is completely secure, and the exchange of images within a network is safe. Images are even accessible to patients, hence ensuring that all parties involved in the process have easy access to all the information in one central location.

By consolidating the two PACS systems, CZW was able to facilitate greater coordination between different departments, improved decision-making and more efficient functioning of all key processes.

Conclusion

Overall, by implementing Agfa HealthCare's Enterprise Imaging platform, CZW was able to derive the following benefits:

- Fewer operations which in turn results in substantial time savings.
- Reduced double examinations.
- Faster accessibility of images across disciplines which in turn leads to the more efficient delivery of care.
- Creation of a system that is easier to manage and control and which is more cost-effective. ■

At Agfa HealthCare, we support healthcare professionals across the globe to transform the delivery of care. Our focus is 100% on providing best-of-suite Imaging IT software solutions that enable secure, effective and sustainable imaging data management. From product development to implementation, our unified Enterprise Imaging Platform is purpose-built to reduce complexity, improve productivity and deliver clinical value. We use our proven track record as an innovator, our in-depth medical knowledge and our strategic guidance to help healthcare providers achieve their clinical, operational and business strategies.

Health Inequity in Radiology and Solutions for a More Equitable Future

Author: [Prof Geraldine McGinty](#) | Weill Cornell Medicine Depts. of Radiology and Population Science | President | American College of Radiology | USA

An overview of imaging policies that contribute to health inequity and solutions to ensure treatment decisions are free from bias and the radiology workforce is more diverse and equitable.

 Key Points

- Health Equity is defined as the absence of avoidable, unfair, or remediable differences among groups of people.
- Current imaging policies and practices contribute to health inequity and offer pathways to reduce disparities.
- Some examples include lack of access to the latest equipment or the best-trained staff, bias in the rate at which imaging is offered to certain patients, and inappropriate overuse of resources by more privileged groups.
- It is important that the algorithms used to make care and treatment decisions are not exacerbating bias.
- It is also important to address the underrepresentation of minorities among diagnostic radiology physicians and the need for a more diverse radiology workforce.

The World Health Organization (WHO) defines “Health Equity” as the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification. There are clearly differences in the nature of the opportunities to advance health equity depending on one’s location, but even in highly sophisticated economies such as the U.S., there are obvious gaps that are often tied to issues of social justice and structural racism. In my own specialty, radiology, we may traditionally have deferred to our primary care and public health colleagues on the topic of health equity, but increasingly we are identifying unique opportunities to improve outcomes for the patients we serve.

The disparities in outcomes related to the COVID-19 pandemic, with Black and Hispanic patients in the U.S. dying at a rate 2-3 times their white counterparts, created a sense of urgency around improving access to care and mitigating the impact of social determinants of health. The engagement of healthcare professionals in protests surrounding the death of George Floyd and in the Black Lives Matter movement as well as, more recently, in activism against anti-Asian racism and violence indicates that as a community, we are committed to a more equitable future.

As scientists, we instinctively seek data to understand a problem. A landmark article in Radiology by Waite et al. (2021) outlines the ways in which current

imaging policies and practices contribute to health inequity and offer pathways to reduce disparities. The authors point out that lack of access to the latest equipment or the best-trained staff, bias in the rate at which imaging is offered to certain patients often based on “outdated suspect racial science,” and inappropriate overuse of resources by more privileged groups can all negatively impact outcomes for many Black and other minoritized patients.

Waite et al. (2021) propose a set of solutions including outreach to and education for local communities as well as efforts to reduce barriers to care such as lack of transportation, reduced cost-sharing and price transparency as well as cultural competency training



for staff. They highlight the importance of ensuring that the algorithms we use to make care and treatment decisions are not exacerbating bias. Lastly, they point to the “stark underrepresentation of minorities among diagnostic radiology physicians” and the need for a more diverse radiology workforce as well as the important role that radiologists can play in advocating for both uptake of preventive screening as well as in reducing the inappropriate use of imaging.

Lack of access to imaging is even more pronounced in other areas of the world, but the “business case” for investment in imaging is clear even in the most resource-constrained economies. In a recent Lancet

Commission led by Hricak et al. (2021), we demonstrated a net return of \$179.19 per \$1 invested in scaling up imaging infrastructure in Low and Middle Income Countries (LMICs).

The American College of Radiology, in collaboration with other professional radiology societies both in the U.S. and worldwide, is building a Health Equity Coalition that will seek to galvanise our community around addressing barriers to high-value imaging care (<https://www.acr.org/Practice-Management-Quality-Informatics/Health-Equity>). Collaboration outside of radiology will be critical to the success of this effort, and we will build on existing relationships with other

professional bodies such as the American Medical Association as well as philanthropic organisations such as RAD-AID International.

Creating community and coalition are important first steps, but storytelling is also a powerful tool to shift culture. The ACR has collected compelling stories of radiologists who are innovation agents to create role models for change (<https://www.acr.org/Practice-Management-Quality-Informatics/Imaging-3/Case-Studies/Patient-Engagement/When-the-Radiologist-Becomes-the-Patient>). Incentives must be appropriately aligned with payment models that support equitable care. Payment models where radiologists are only rewarded for per unit productivity without regard to quality and fragmented healthcare delivery and financing system with wide variation in quality are all barriers to the level of care we know we should offer all our patients. Radiologists must be leaders in advocating for a payment methodology that prevents burnout and the associated loss of empathy so that we are able to advocate on behalf of our patients.

As one of my mentees said recently, when asked why A.I. would not replace radiologists: “I know my patients will want to know there is a human radiologist involved in their care.” Just as important is that we as radiologists know that there is a patient and a lived experience that underpin the images we interpret. Our view of the world cannot stop at the reading room door.

Conflict of Interest

None. ■

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Human Matters: Healthcare Workers, Patients and Families

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Begoña San José
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Dr Sara Saeed Khurram
Co-founder and CEO
| Sehat Kahani



Adjunct A/Prof Habeebul Rahman
Head and Senior Consultant, Psychiatry | Tan Tock
Seng Hospital | Singapore

Staff Wellbeing - In COVID-19 and Beyond

📌 Author: [Adjunct A/Prof Habeebul Rahman](#) | Head and Senior Consultant, Psychiatry | Tan Tock Seng Hospital | Singapore

📌 Author: [Dominic Tung Kuan San](#) | Assistant Director, Human Resource (Wellness) | Tan Tock Seng Hospital | Singapore

Staff wellbeing in a busy hospital responding to the pandemic can reap the rewards of positive relationships built over time, and embrace change by focusing on three pillars of care, protection and wellness for staff, aided by digitalisation and innovation.



Key Points

- Response of healthcare workers in hospitals to a crisis is built on healthy engagement and relationships during times of peace.
- Agility, innovation and responsiveness during the crisis are as important to staff as psychological preparedness prior to the event.
- A three-pillar approach is proposed for staff wellbeing in hospitals - Care, Protection and Wellness, with representation from a wide range of staff groups needed to make wellbeing work.

Facing the Tempest

In retrospect although the outbreak was unprecedented for our generation, the response was not. It would not have been possible to react and then continually adjust our sails to care for patients and our staff at the same time, if not for lessons learnt from past events, commitment from leaders that we stay the course, and the relationships built along the way that allowed colleagues to place all hands on deck and work together, where we were needed the most.

Shortly after recording the first case of COVID-19 in Singapore on 23 January 2020, the country raised its 'Disease Outbreak Response System Condition' (DORSCON) level to Orange on 7 February, the second highest alert level for a disease outbreak, and has remained there since. One can only fight what one sees, and one only sees what one knows. Whilst preparedness for an unknown pathogen had been planned for, the initial

reaction of staff was marked by the narrative of SARS from 2003, where the outbreak claimed lives of patients and healthcare workers alike, but was contained swiftly with normalcy returning in a year after the outbreak. COVID-19, on the other hand, has spread far and wide, and assumed mutated forms, kindling greater worry, and one year on we still do not have any ideas when normalcy will return, in a new form or otherwise.

Along the way, the hospital has been a ship sailing into rough seas in the dark with a light to show the immediate way; unable to predict the next wave and what it may bring, but having to trust that the crew work as one, that their training would serve all well, and that the course set for us will lead us to safe harbour once again.

At the beginning of the journey it became apparent that prediction and preparation would be difficult due to the evolving nature of the situation, and that communication would be key – between management and staff,

between staff, and from staff to their own families and patients. Agility and resilience became key words in healthcare in response to this new pandemic, keeping one eye on the present while attempting to peer into the future.

We were fortunate to have existing structures in place: a well-developed wellness presence, an established peer support programme led by an experienced coordinator, and committed clinicians from Psychology, Care and Counselling and Psychiatry, supported by a rapid structure created by hospital management to align the work of responding to the needs of staff in the form of a Staff Wellbeing Group on 2 February 2020. In the words of our CEO, "realising that it was always the small acts of kindness that matter the most", it was apparent that said small acts, meant to enable our staff to continue to work in such uncertain times, had to include consideration for basic needs. This included the ability to



travel to and from work, access to meals and supply of personal protective equipment, and a place to stay, for staff affected by Malaysia's border closures, or those who had been asked to seek accommodation elsewhere by worried landlords. The initial response of an understandably anxious population was experienced as stigma against healthcare workers, but very soon replaced by a groundswell of goodwill, in stark contrast to the experience of SARS. From 14 February 2020 onwards, there was a steady stream, at times a flood, of gestures from the public wanting to contribute to the welfare of healthcare workers. However, it was already apparent from the

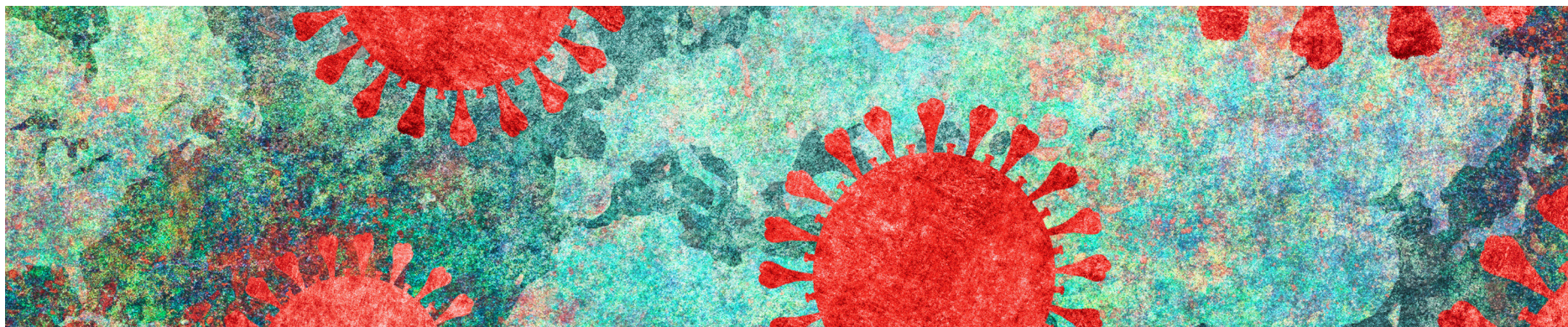
end of January that to the staff of TTSH, being closely tied to the National Centre for Infectious Diseases, the gestures of goodwill needed to start internally, from management to staff, and from staff to staff.

One social innovation enabled this to happen – the 'Spread A Smile' movement led by the psychologists and medical social workers, and supported by a spread of many other hospital departments, from Corporate Communications to the Office of Clinical Governance. Via its tagline – 'Be the smile behind the mask' – it encouraged staff to use social media to showcase appreciation for one another, and to acknowledge acts of kindness

that otherwise would be easy to forget in the cycle of showing up to work and getting home exhausted to rest in the thick of the outbreak. Staff were deployed to unfamiliar environments and had to work for longer hours than ever before, and being seen for their hard work and empathy helped them to push a little further each day. The #HealthcareHeroes movement provided badges for all staff, to display the pride felt by each staff in the course of their work, and also made its way into the community in support of all healthcare workers across different institutions.

There were many pain points along the way, from healthcare workers choosing to live separately from their families in the initial stages, segregation at work, staff who were prevented from travel (before borders were closed) and had not met their own families since the pandemic, to facing burnout from the sheer workload of managing wave after wave of COVID-19 and non-COVID-19 patients alike – there are countless human stories created in the space of the year, filled with myriads of emotions including grief and hope. The Goodwill team, managed by Human Resources (HR), rose to the challenge of managing the supply of constant wishes of hope for our staff. The team also ensured that we were able to pay it forward to the community we serve, most notably the large groups of foreign workers who soon represented the largest population of those afflicted by COVID-19.

While promoting resilience and positive psychology, it was also important for us to keep an eye on the pulse of our staff, and to be able to respond to needs as they arose. A digital solution presented itself in the form of a workplace wellbeing survey extended to all staff from February 2020, and results were collated fortnightly, with trends and pain-points escalated to senior management, who were ready to respond to feedback personally. The survey enabled us to track self-reported stress levels as well as self-reported resilience levels, and it is noteworthy that resilience remained ahead of stress



levels throughout, suggesting that our staff were in a position to respond positively to the challenges they faced without becoming overwhelmed. Also, difficulties reported in a certain week did not remain as hardships in subsequent weeks suggesting that problems were being solved organically, and this further strengthened our belief in collective leadership enabling change to happen at ground level. A hotline was available at all times for staff needing a listening ear, and psychological debriefs were held for groups and individuals who had faced unexpected events, for even in times of crisis, the challenges of daily life still continue.

Emerging from the Eye of the Storm

The transition from COVID-19-focused healthcare to 'business as usual' has not been so much due to the receding of COVID-19 but rather the initial creep, followed by rapid resurgence of patient numbers arriving back at acute hospital for care. This has been accompanied by staff returning to their usual areas of work, with a sense of increasing their own work capacity, and also mindful of the potential effects of not being able to seek their own wellbeing from traditional sources.

The scaffolding for staff wellbeing in this emerging period is broadly divided into areas of Care, Protection and Wellness. This is within the broader categories of

wellbeing sharing the remit of staff safety and health with occupational health and environmental safety and process in the hospital, with larger connections to HR management (HRM), organisational development, people development and learning, supported by digitalisation initiatives and healthcare innovation.

Care

Care for the wellbeing of our staff comprises physical and emotional care, and being in a position to respond to their needs effectively and in time. An employee-assistance programme, which provides personalised and relevant interventions for staff, may be one way to deliver such a response. For example, access to a counselling hotline for emotional support needs to be present for staff in times of despair or confusion, to support them through initial phases of psychological distress via mental health first aid, and enable them to develop self-efficacy in problem-solving at the workplace. Peer support at the departmental level or a formal hotline for the hospital may fulfil this need. Ideally, there are tiers for escalation, from the staff's peers or supervisors, to a working group responsible for care for staff, and to escalate upwards towards formal mental health interventions for appropriately triaged cases or enable staff to seek counselling in the community subsequently. The

interventions provided need to be tracked to demonstrate safety and effectiveness, whilst balancing need for privacy of staff. Involvement of a separate non-affiliated programme to deliver counselling may be needed when staff wish for anonymity, and mechanics of engagement with such a separate programme will need to be formalised to enable staff to get the help they need, while also enabling the workplace to identify systematic gaps affecting staff on a macro level.

Whilst tracking responses to requests for assistance, it may be worthwhile to invest in a systematic method of collecting and collating data on the wellbeing of staff, at regular touchpoints separate from periods of crisis or organisational stress. This allows a denominator to be developed over time that reflects the particular challenges and strengths of the various subpopulations in the general staff group, such that the voices of auxiliary or transient staff are heard equitably. The collection of data may be driven by technology, and digital workplace innovations are ideal for such mass outreach and capture of cross-sectional screening information. The role of digitalisation of care efforts also extends to protection and wellness, and if information can be cross-referenced to other HRM-related measures such as staff turnover, absenteeism, presenteeism and adverse outcomes.

Care is also best delivered in proximity to where staff

work, and embedding nominated staff to be care or welfare officers within each department serves to remind supervisors and managers that staff wellbeing cannot be overlooked. Such appointed officers carry the message of staff wellbeing with them, and we have witnessed our welfare officers ingeniously creating movements and events within their own departments that are relevant and accessible to their peers.

Education is another component of care that needs regular attention. With the internet, we have access to material developed for staff wellbeing across the world, and because our fundamental concerns and suffering are universal, there are many readily available toolkits, information leaflets and intervention aids which require minimal adjustment to make them locally relevant. Useful

affect staff individually, or as a group. Situations of abuse at the workplace present unexpectedly, as single events, or repeatedly through various contact points in the healthcare workplace. A system needs to be developed that enables, via policy, to indicate to staff that their wellbeing at work matters, and then to capture information from these contact points, related to individuals or work settings where abuse is more prevalently encountered, for a response to be developed. Such responses need to be guided by policies, which are enforced (policies without enforcement unfortunately lead to disillusionment amongst staff), and supported by educational material made available to staff on how to cope with situations where they may feel harassed, threatened, or abused. While working hard to prevent

to include representatives from these main groups as well as Legal, Corporate Communications, Hospitality and Environmental Services, Quality Service Management and senior management. The messaging of protection for staff balanced against portraying the hospital as being punitive needs to be carefully considered. Ongoing campaigns and awareness on a national level serve to reinforce the message that healthcare workers ought to be protected while carrying out their work.

Wellness

With care and protection as building blocks akin to the basic levels of a hierarchy of needs, wellness caps off the 'growth needs' while also anchoring the physical aspects of care. Wellness is a total way to invest in

With COVID-19, one year on we still do not have any ideas when normalcy will return, in a new form or otherwise

reminders on caring for oneself, engaging in regular physical activity, practising mindfulness and compassion at work, can be disseminated to provide just-in-time reminders for staff for self-care. Such educational materials may also include information on normal responses to abnormal situations, and to help staff identify and overcome negative thoughts or behaviours that they would like to see change, with links to mobile applications available for individuals keen on engaging more rigorously with addressing their mental health needs, with interventions such as cognitive behavioural therapy.

Protection

Whilst the message of care drives wellbeing from within the individual, it is also necessary for the organisation to provide protection from events which unfold and may

such occurrences, it is also necessary to mitigate against harm caused by unpredictable events, and staff need to know that they are supported by medical, legal and workplace-based occupational health interventions enabling them to return to work safely.

The mechanics of such protection are complex: there are traditional roles in healthcare such as frontline staff who man entry points into the hospital, nursing staff who provide the greatest number of contact hours with patients, and pharmacy staff who may need to report inappropriate medication use. Drills enabling staff to familiarise themselves with a plan of action must be run to inculcate muscle memory, in abusive situations often there is no time to run through cognitive steps needed for the situation. As such, the composition of the group seeking to enforce protection of staff needs

the health of our staff, with a wide-ranging ambit that includes health screening, activities for staff cohesion, employee engagement, physical events and domains such as nutrition, legal knowledge, financial literacy, etc.

With safe management measures implemented during COVID-19, we were not permitted to organise regular mass gathering and group-level activities. Daily fitness classes, evening badminton sessions, weekend hikes and even use of the staff gym were all suspended or cancelled. There was a pressing need to modify our regular wellness programme and find ways to help our staff stay active, healthy and feel engaged both physically and mentally.

As some of our staff also worked from home, a fresh approach was required to reach out to as many of them as possible, keep their morale up and help them stay

connected with their colleagues back in the workplace. The virtual space hence became our key platform in engaging them. This digital approach allows us to reach out to staff and remote teams at multiple locations and working modes anytime and anywhere. Besides catering to staff at work, the initiative also serves to ease the stress and anxiety of those working from home during the pandemic.

The digital strategy called for gamifying regular wellness activities into creative, interactive and easy-to-participate challenges to attract and retain staff interest.

One of the virtual engagements rolled out was a six-week virtual fitness challenge titled Get Moving. Get Active. Get Rewarded. The activity was in partnership with a reputable sports shoe brand, where we called upon our staff to ‘Exercise Together... Separately’. Staff would only need to either walk or jog a minimum mileage stipulated in the uniquely curated weekly challenge, post it onto our in-house social media platform Workplace@Facebook, get rewarded with an attractive token and stand a chance to win a pair of running shoes.

In another holistic virtual wellness game Well-BEINGO, staff were incentivised to complete on their own or with their colleagues (in proper safe distancing measure) a series of health and wellbeing-related activities consisting of mindfulness colouring, nutrition, physical workouts, social engagement, financial webinar, dance challenge, etc. in a Bingo format.

The hospital is very grateful to have received outpouring of well-wishes and goodwill donations from members of the public and organisations during the pandemic. The goodies received were shared across the campus amongst healthcare professionals, front-line support and backend staff in appreciation of everyone’s efforts in battling COVID-19. Demonstrating such gestures of gratitude was important in keeping staff morale up and acknowledging that everyone plays a part regardless of our roles during the pandemic. The donations received were in such abundance that we were

able to organise a ‘Kampung Mart’, where our lower-wage colleagues and outsourced staff were invited for a day of ‘pick-all-you-can’ free shopping.

We recognise that in these unprecedented times we need continuous efforts to help our staff remain Healthy, Fit and Resilient, provide them with opportunities for recreation and relaxation so that they can still maintain a balanced work-life during the pandemic. Only then can they perform the various roles in their personal lives effectively and in turn better care for our patients.

Conclusion

There have been many lessons learnt along the way, and it is true indeed that in crisis there is opportunity. For

the organisation there is the opportunity to learn to trust in their staff, to reap the rewards of relationships built along the way and to believe that a responsive system is possible if one embraces adaptation and agility. For the individual, there is the opportunity to appraise what is truly necessary, and what aspects of our past behaviours and thoughts we may be able to let go on to benefit from new ways of doing, thinking and being.

Conflict of Interest

None. ■



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- Prof Gabriel Leung**, Dean of the Li Ka Shing Faculty of Medicine, University of Hong Kong
- A/Prof Chin Jing Jih**, Chairman Medical Board, Tan Tock Seng Hospital & Central Health



The Importance of Leadership and Humanism in Healthcare

Author: [Sourabh Pagaria](#) | Executive Vice President & Head of Southern Europe | Siemens Healthineers

During the COVID-19 pandemic, healthcare workers around the globe have risked their lives to provide care. A large number of these workers have been infected, and many have died. It is important to evaluate how healthcare workers could have been offered more protection and how their lives and wellbeing should have been at the forefront of healthcare's response to the pandemic. HealthManagement.org spoke to Sourabh Pagaria, Head of the Southern European business of Siemens Healthineers and discussed wellbeing of healthcare staff during the pandemic and how leadership could play a role in ensuring the safety of healthcare workers.





Healthcare staff wellbeing has been a major issue during the pandemic. What is your analysis on how we performed, and what could have been done better?

This is one topic that has been heavily discussed with our customers and healthcare leaders. If we see it from the eyes of a frontline healthcare worker, the scenario is terrifying. Healthcare workers are not used to seeing stress or death the way they have during the pandemic. They are working tirelessly day after day and seeing people dying in front of them. The helplessness they must feel in this situation cannot be ignored. They were

also not used to seeing shortage of resources. At the start of the pandemic, healthcare workers had a tough time getting protective gear.

After one year into this pandemic, one big question which is on every healthcare leader's mind is about the mental wellbeing of our healthcare workers. Traditionally, healthcare always has a higher burnout rate than other industries, but we see this at a record level this time. We have to ensure that there are support systems for healthcare workers to practice things like mindfulness, relaxation techniques, stress management, prioritization, handling family, remaining connected

and sharing the challenges they face with people they can trust. This is currently not an integral part of how healthcare workers get trained on the job. It is time to make this a regular feature beyond clinical training and include it as part of the continuing education and growth of our healthcare workers.

Why do you think there is such a high prevalence of burnout among healthcare workers?

The COVID-19 pandemic has served as a brutal reminder that the safety of healthcare workers must be top of mind for jurisdictions, health systems and healthcare executives. We cannot protect patients if we cannot protect the people responsible for their care. In September 2020, Amnesty International estimated that at least 7,000 health workers worldwide had died after contracting COVID-19 (Amnesty International 2020). Particularly during pandemics, healthcare workers are the ones who pay the stiffest price; they are the ones required to put their health on the line to care for patients. In addition to their physical health being at risk, healthcare workers have also suffered mentally and emotionally. This affects patient care and healthcare organizations. Illness and absenteeism are prevalent, which can drive up costs. Burnout and fatigue can contribute to mistakes, malpractice claims, and reputational damage. High-stress workplaces can lead to higher staff turnover and low morale, as well as poorer outcomes and diminished patient experience.

Toxic workplace culture is not a rarity in healthcare. How do you think this can change?

Protecting healthcare workers means protecting their mental and physical health. To do this, it is important to explore immediate and long-term ways of creating healthier and more positive work environments. Of equal importance is addressing mental health management, helping workers build the mental resilience they need to handle the stress they encounter.



Support care teams in the acute phase: Many hospitals have already creatively explored immediate short-term solutions for care teams who are under high pressure either physically, mentally or from changed factors at home. During acute situations, leading institutions have implemented care team support such as 24/7 psychological support call centers, options of sleeping on-site, and in some cases, childcare. Many institutions offer training in critical incident stress management to help first responders or caregivers process a traumatic event soon after it happens.

Build long-term mental resilience of care teams with mind-body techniques: Healthcare leaders must ensure that all staff have the skills they need to be mentally and physically healthy and resilient. This will help them provide the best care for their patients and enjoy relatively normal lives away from work. Mind-body techniques such as mindful breathing, active meditation, biofeedback and guided imagery have helped millions of people develop self-awareness, self-care, and self-expression skills and can be effective for healthcare workers.

Establish internal leaders to embed social support: The feeling of being “in this together” is one that most people respond to. A feeling of togetherness and mutual support is particularly important during times of crisis. Being part of a facilitated group enhances participant outcomes, as all can benefit from the sharing of skills and mutual support. Leaders can create small groups who are trained in these techniques. In the long term, such a system allows healthcare organizations to create a culture of care within their team.

Design emergency spaces to alleviate emotional distress: Designing and adapting physical spaces to respond to the unique requirements of a crisis is essential for the physical safety of workers. However,

well-designed spaces should also help workers feel safe, contributing to their perceived security and well-being. A simple example would be something as basic as a privacy partition, allowing for a moment of downtime and reflection. A more sophisticated take on this idea is a “coping corner”, a private space for care teams when they feel they need a break or some alone time (Wheeler 2020).

Design healthcare facilities with natural spaces for a positive staff experience: The physical design of a facility can create a powerful healing environment and facilitate effective communication among staff and staff and patients. Healthcare facilities should subscribe to this philosophy, with spaces designed around patients and their care pathways. Healthcare facility planners should focus on creating a healing environment that optimizes patient experience.

Build a remote culture: Remote work is now a reality and has allowed many healthcare workers to deliver first-class care while remaining safe, secure and free of debilitating worry and stress. While this is not always possible in a healthcare context, there are many ways for patients and physicians to interact virtually, allowing patients to experience a feeling of human connection. Also, healthcare teams can work with one another through virtual support networks, with all the empathy and mutual support that would be available were they in the same physical room. A change like this should be supported by cultural adjustments to ensure that employees continue to feel valued and integrated into their teams and workplaces.

How should organizational models and leadership priorities evolve in health systems in the post-pandemic world?

Most traditional healthcare service organizations, for example, hospitals, have been structured with organizational models coming from the 20th century and

typically have very firm hierarchies and silos of information. This makes cross-system and intra-system collaboration very difficult. When we are faced with a pandemic or a health crisis like this, collaboration, communication, and coordination are three important things that healthcare service providers have to ensure.

Going forward, leadership teams in healthcare service organizations will be particularly challenged to collaborate and find agile ways of quickly making decisions to manage the crisis. Additionally, to drive successful technology adoption within their health systems, leaders need to engage, enable, empower and encourage their teams to change processes, redefine standards and endorse a culture of continuous improvements.

At the same time, increased stress levels in the workforce need to be managed by focusing on staff well-being through programs like mindfulness etc. In my view, leaders of today and tomorrow will have to play a big role because when you have to drive such a change, you have to engage the caregivers across the spectrum into this journey and empower them to make local decisions. At the same time, you have to encourage teamwork and create common grounds which are centered around the patient experience.

We saw shortage of resources, hospital beds and healthcare staff. Why do you think the healthcare sector was so unprepared? Which areas should healthcare invest in for better performance in future?

There are multiple factors at play here:

1. Investment in public healthcare infrastructure did not keep pace with the demands of an increasingly aging and chronically ill population in many European countries. Healthcare was often seen as an annoying cost factor than a necessary investment to keep the efficiency and productivity of the economy.



2. Healthcare has been slow in adopting technology tools that could improve the efficiency and productivity of its professionals and processes.

Global health care spending, even before the pandemic, was around \$7.0 trillion. Out of that \$7.0 trillion, only 1% could be invested in technology that could improve efficiency and effectiveness of healthcare processes as well as delivery of care, for example, virtual care technologies, remote diagnosis, remote patient monitoring, or remote surgical capabilities with remote robotics-assisted surgeries. Healthcare has not made this investment. If you compare healthcare with other industries, they invested in automation and technology to drive the cost curve down when they went through high labor and high raw material cost crisis. Healthcare should also start investing in technology to make processes simpler, take the waste out of the system, and improve productivity.

3. Lack of investment in building leadership capacity to manage a crisis of this scale and drive a coordinated response. Building leadership capacity means helping healthcare leaders prepare for a crisis like this and be the ones who their institutions look up to for guidance. It is important to provide them with the tools and the methodologies and help them gain experience, even if it is through a simulated environment during leadership courses. This can help them gain insight into how to respond and coordinate effectively across their peer group and manage anxiety within the community and patient population.

What core human qualities do you think must be part of healthcare systems to ensure that the importance of humans is retained in this digital age?

Healthcare carries “care” even in its name as an industry. Unfortunately, with increased patient loads, administrative burdens and non-interoperable

technology tools, physicians and nurses often find themselves having to compromise on the care aspect of healthcare. As the use, prevalence and versatility of technological tools increases, I expect health systems and providers will be able to focus and invest more in developing human qualities like empathy and compassion for patients and flexibility and collaboration between healthcare staff.

Telemedicine has its benefits. But do you think patients miss the human connection and the face-to-face interaction with their healthcare provider?

The ability of health systems to engage virtually with patients, assess their needs and direct them towards treatment and care is not new, but it has been slow to gain traction. For as long as there have been doctors and nurses, the basic healthcare interaction has been a very human one. When a person feels sick or suffers an injury, they visit a healthcare provider. This traditional workflow has served healthcare well for generations, but with COVID-19, healthcare system’s limitations are becoming more and more apparent. Patients are approaching healthcare as “consumers” and demanding the same fast, convenient, easy and affordable service they have come to expect in other areas of their lives. In an era characterized by on-demand services, rapid delivery and instant communication, they seem less and less interested in properly using a system that does not satisfy that desire.

The keyword here is **engagement**. A good digital front door strategy allows care teams to engage with patients virtually. This represents a paradigm shift in the way we think about care and how it is delivered. Tele-visits allow patients to easily make appointments and make better use of their waiting time before those appointments. Also, these digital front doors represent potential cost savings for patients in the form of reduced travel time and fewer travel expenses.

Face-to-face contact, in healthcare as in other encounters, does have its advantages. But as this option became unavailable or too risky, digital alternatives quickly emerged to help fill this need. In most cases, patients quickly realized that this alternative was not only safer but more convenient and just as effective. The increased use of digital front doors also generates collateral benefits, including reduced pressure on hospital emergency departments and an ability to more efficiently allocate healthcare resources.

AI has significant potential in healthcare. But there are concerns that it may take away many jobs. What do you think?

One of the great misconceptions about digitalization in healthcare is that it somehow reduces the importance of the relationship between clinicians and their patients. I see digital technologies much more as indispensable tools in enabling an even more patient-focused approach. By making high-quality care more widely available, they can contribute to the democratization of healthcare. In radiology, for instance, AI could help physicians identify tumors and speeding workflow by automating time-consuming tasks. New technologies continue to be developed and refined. However, AI will not replace radiologists. Instead, it has great potential to make medicine more efficient and data-driven. ■

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Mental Health Services Challenged by COVID-19

Analysis of a selected area in Northern Italy

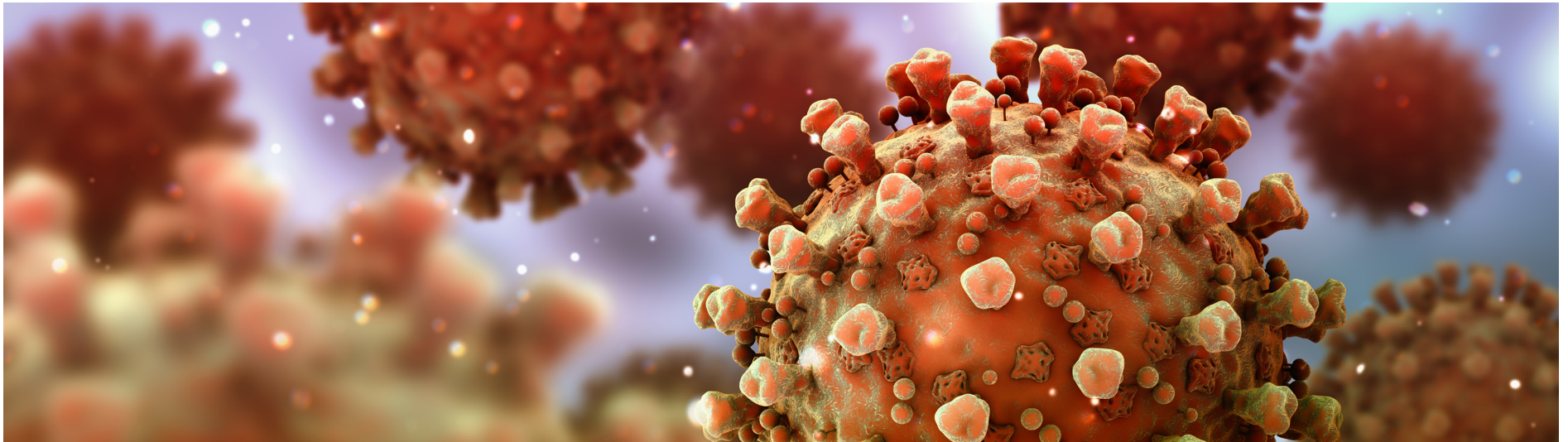
Author: [Caterina Corbascio](#) | Mental Health Department | Azienda Sanitaria Locale AT | Asti | Italy

Author: [Gianni Tognoni](#) | IRCCS Ospedale Maggiore Policlinico | Milano | Italy

An overview of the consequences of neglecting mental health and a case study of reorganisation of mental health service practices in Asti County, Italy.

Key Points

- Mental health as a strategy of care for targeting inequalities as direct determinants of diseases.
- Reorganisation of the practices of mental health services during the COVID-19 pandemic in Asti, Italy.
- Involvement of local communities to face the new needs of the patients related to COVID-19.



Framework

The state-of-the art of the role and effective management of mental health assistance, in the context of a political and cultural scenario increasingly focused on the issues of strict economic sustainability, represents the specific object of the analyses, recommendations and proposals embedded in debates covered by the major scientific journals (not necessarily psychiatric) but dealing with issues of public health. The Lancet Commission on Global Mental Health and Sustainable Development (Patel et al. 2018) represents one of the most significant contributions to the multiple controversial hot points, which can be seen as an apparently contradictory combination of two consensus.

The first consensus clearly states that mental health is a neglected area of medicine: nothing new or relevant has been produced since a long time in terms of new and effective treatments, of basic research related to biological determinants of diseases, and - more importantly - on reliable outcome measures corresponding to hard indicators of cost/effectiveness.

In this context of absence of new data, only ethically and politically correct recommendations indicate what should be done, but their outcome is limited, and the final consequence confirms the disinvestment and socio-cultural marginalisation of psychiatry (Saraceno 2018).

The other consensus says that mental health is the challenging test for strategies of care that target the increasing inequalities which characterise and are direct determinants of those acute or chronic diseases (from evidence of the scientific literature of the last years) known to depend not only on biological-medical causes, but also from life conditions and contexts.

No doubt mental health is a comprehensive representative of these scenarios, and that only innovative, diffuse, long-term research could be a bridge between the two consensus with diffuse field experiments, in multiple contexts of practice and not simply through conceptual debates. Occasional studies are hardly representative or

sufficient to produce the significant changes needed to deeply modify rooted paradigms of care (Tognoni 2020).

The Global Experimental Laboratory of the COVID-19 Pandemic

The emergency scenarios which invested as a true global tsunami the health services of all societies generated two-fold results. On one side, a heavy burden for the already 'minimal' mental health services, and on the other side the unexplored challenge of facing the new problems.

The rigid lockdown generated problems in the management of the patient populations already in charge of the services, along with the almost certain delayed emergence of relapsing as well as new 'atypical' cases. A chronicle from the real-world may be inferred from the events encountered in a Mental Health Service in the Northern Region of Piemonte, (Asti, Italy), that may be considered as paradigmatic for the best way of providing an informative picture on the practices and the outcomes to be documented over one year for the patients and the service.

The Mental Health Service of the Asti County is placed in a rural context in the southern part of the Piemonte Region, characterised as a middle-income area with an environment marked by social tolerance and acceptance. Furthermore, the area has experienced projects of involvement of stakeholders in the evaluation and monitoring of the performance of the Mental Health Services (Corbascio 2010; Barbato 2014). More importantly, an association of family carers and patients is present and strongly operative in the area.

The initial phase of the pandemic emergency coincided with a complete lockdown and with suspension of all the activities in the country, essentially a shock for everyone and for the entire health system. Mental health services have been characterised by a generalised slowdown of their activities, giving answers only to urgent situations. This choice led to important limitations of access to services by most of the patients in charge. The closing of the day centres with the suspension of all the group activities

Population	214,630
Communities	118
Patients in charge of the service	2,012
Structures	2 Community Mental Health Centres 2 Day Centres 1 Psychiatric Ward (8 beds) 1 Day Hospital
Personnel	13 Psychiatrists 28 Nurses 4 Social Workers 4 Educators 8 Assistants

Table 1. The human and structural context of all activities

forced most disabled persons to be confined at home, losing interpersonal contacts combined with significant difficulties in taking care of everyday needs.

The principal challenge for the professionals of mental health services was to maintain contact with the patients in charge, taking into account the compliance with the new rules of physical distancing. The first step included involvement and responsabilisation of the patients through an educational process aimed at providing basic rules for interacting with other individuals in a safe way. Actually, this resulted in a bi-directional process between professionals and patients based on an exchange of the reciprocal experiences in dealing with the new behaviours necessary to prevent and counteract the transmission of COVID-19. Out of the professionals, nurses undertook the actions of

a learning process starting from a solidarity basis, relying upon the common sense that 'nobody can save himself alone'. After this educational path, patients became easily aware of the surrounding pandemic situation, and were enabled to cope with the new situation. Again, an unexpected result was that the group of the patients gave to the professionals a civility lesson, immediately adhering to and applying the new rules imposed by the pandemic.

The second step necessary to meet patients' needs has been the shift of the focus of service activities to home visits and encounters in uncommon places, such as public gardens, town squares, etc. (Coppo 2020). Surprisingly, there has been a significant reduction (50-70%) of psychiatric admissions to the psychiatric wards in the general hospitals, not explainable simply by the temporary closure of the wards due to unavailability of the staff (Gessen, 2020). Patients have been addressed to use other types of assistance, provided by the community mental health centres (Saponaro 2020). Besides new development of distance monitoring (such as phone calls and video calls), home visiting has been essential not only for assessment of the clinical conditions but also for evaluation of the living context and situation during the lockdown. A critical role has been the need to change day routines by the patients, helped in this task by the professionals that suggested new activities, even on a day-by-day basis, by phone calls and video contacts.

Involvement of the local community, i.e. the mayors, the parishes, the voluntary associations, the general practitioners, have all actively participated to the call for supporting the patients, also by reporting on difficult situations that needed the service action. In an indirect way and especially in small rural towns, the pandemic acted as a trigger of a new sense of the entire community, by generating participative and inclusive behaviours by most of the citizens, reducing in this way the stigma marking mental health patients. These positive experiences of social inclusion have indicated the need for vigorous interactions and integration among all actors on the social scene, in

order to attempt a reduction of the social differences and inequalities massively induced by the pandemic. This task needs to be reached through local and national agreements designed to help public and private Institutions to work together guided by a common objective.

Lessons Learned During the Pandemic

First of all, mental health services must move to the patient's living context in the most flexible and adaptable way, acting to melt together the different opportunities of curing and caring, activating all the resources available on the scene. This goal should be approached with creativity, not with simplified and pre-formed answers to problems. It is necessary to avoid fragmentation of the efforts of the services, by building alliances and sharing responsibilities to tackle the social problems evoked by the pandemic.

Secondly, the pandemic has exposed the dramatic effects of the institutionalisation of the aged and disabled populations causing the highest number of deaths. This point reminds us that every person must have an individualised care plan, realised in a normal life context with the possibility to exercise the right to choose, to decide what is best for their personal life. Nevertheless, it is an accepted point that the possibility to exercise personal rights is the basis for starting a therapeutic programme (Castelfranchi 1995), as the application of the Basaglia's reform has fully demonstrated in the last forty years.

Looking Forward

Organisational creativity including personnel, managerial and administrative flexibility, proximity, confidence and sharing are the few keywords that witness what has factually happened in one year in the intense and often stressing environment of our 'laboratory'. At the same time, it could be felt as a deep experience shared by the personnel and - more importantly - by the patients and their living context.

It is clear that the terms proposed above hardly comply with the definitions of disciplines with formal qualitative and quantitative vocation and objectives. However, these

terms have emerged as a widely perceived narrative shared among all the stakeholders (patients and families, as individuals and groups). On the other side, it is not difficult to recognise in the same words a value-assessment background when they are confronted with their more formal synonyms: care, participation, empowerment, personalised interactions, contexts - and individual-targeted strategies.

The main and methodologically important difference between the two scenarios outlined above is clear: the first set of words correspond to a culture and resources available in a practice where risks, lives are shared, to collaboratively look to solutions.

The second set of words are expression of a 'discipline' aimed at assuring a functional system through the assessment from outside of the interventions, i.e. objects, and inevitably assign to the 'subjects' of needs the role of a dependent variable.

The 'natural' fall of the administratively rigid walls between the health and civilian areas of responsibilities represent the most remarkable indicator for a future, where the needs and the rights of those that are less autonomous are at stake. The translation of the obviousness of 'non-obedience' to the prescribed bureaucratic legal restraints in an emergency is certainly an important area of 'civil research'.

On the same line, the other protagonists of the pandemic scenario in the mental health system, which require a creative follow-up, are the true determinants of the contexts, i.e. space and time. They are the true novelties, non-medical, certainly caring and cultural. The model proposed is that of a Mental Health Service endowed with an ever-changing 'patient-centred' agenda that moves where needs-rights-patients are, with no restrictions, without paying attention to measures of performance.

Conflict of Interest

None. ■

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For full references, please email edito@healthmanagement.org or visit <https://jhm/18vr>

One AI to Rule Them All?!

Ethical consideration of Greatness and Limits of data-driven smart medicine

📌 Author: [Dr Stefan Heinemann](#) | Professor of Business Ethics | FOM University of Applied Sciences | Essen | Germany | Spokesman | Ethics
 Ellipse Smart Hospital of the University Medicine | Essen | Germany (or GPT-3?)

"The development of full artificial intelligence could spell the end of the human race. It would take off on its own, and re-design itself at an ever-increasing rate. Humans, who are limited by slow biological evolution, couldn't compete and would be superseded."

Stephen Hawking, BBC, December 2014

"Our intelligence is what makes us human, and AI is an extension of that quality."

Yann LeCun, VP and Chief AI Scientist, Facebook

"I don't have a life. I have a programme."

The Doctor, an Emergency Medical Hologram Mark, Voyager

Digitalisation of medicine and healthcare is, apparently, the not so distant future. But to make it practically successful, we need to explore and understand AI and its interaction with data use and protection policies. An ethics expert looks into the challenges imminent to the current digital health landscape and outlines the benchmarks for its transition to 'common good'.



Key Points

- While technology has always been used to progress medicine, its moral values should be critically evaluated, especially considering the potential impact of AI and data.
- In Germany, finding the balance between good use of good data and protection of personal data is challenging. In theory, policies are on the right track but their implementation may be questionable or even the opposite of what was intended.
- Present digital landscape might not always be amenable to consensus so in real-life settings an expert ethical evaluation of new technologies should come to the forefront.
- Between public and private health concerns, justice and autonomy, the common good should prevail as the critical point of AI and data-model implementation in medicine and healthcare.

The Ultimate Seduction, or: Redemption?

“Two things fill the mind with ever new and increasing wonder and awe” – the stunning human-like AI, often called artificial general intelligence (AGI), we created and the decisions that are finally being taken away from us, especially in ethical matters. Well, something like that. Kant meant: “the starry heavens above me and the moral law within me.” The original Kantian power-quote from conclusion of *The Critique of Practical Reason* hits the point. True Heaven is the moral law.

The existential question of healing, of redemption from illness and torment is so close to all of us that almost any means may justify this end at first glance. But only almost. In the long history of medicine, technology has always been a popular instrument for achieving progress. Progress in a profession between science, art, ethics and craft. Only the craft is really interchangeable with digital technologies, to a large extent and only insofar as it is interpreted manually. But even there not completely, because as long as we humans are bodily beings, empathetic touch is also an expression of a professional closeness and a relation which itself can develop a positive medical power. Of course, no doctor will mourn the old procedures in which urine had to be tasted – diagnostically imprecise and burdened with shame for both doctor and patient. And yet technology is not in principle simply an instrument; rather, it is closely interwoven with the ethical quality of medicine itself and must therefore also be addressed from the point of view of values.

AI makes it particularly clear at this point how much the deep chances of positive progress in medicine itself can be morally commanded to be used, on the one hand, but on the other hand, should also be critically questioned. Between seduction and redemption. Perhaps the AGI will play the central role in the future, assuming that this is possible in principle (which is probably the case, Gödel’s theorems a no *a priori* limit). It has already become impressively clear, even more so

in pandemic times, that successful public and private health can no longer be guaranteed or at least legitimately supported by Analogicity. Data, AI and me and you. And all of us. Everywhere.

No Medicine Without Good Data

It is hard to grasp, even harder to bear. How can a successful, highly industrialised democracy like Germany in the middle of Europe be so clearly overwhelmed politically and administratively in the corona crisis? There may be many reasons for this, which cannot be discussed here (cf. Heinemann and Richenhagen 2021); however, at least one element is to be found in the lack of digitisation of the public health system. Without good data (valid, etc.), there can be no good pandemic prevention (and also no further diagnostics, therapy and aftercare). Without good algorithms, i.e. good AI, no smart use of this data. So far, so good. Or not. Because: the German fear of the data octopi (think tech corps) unfortunately ultimately ensures the weakening and endangerment of the basic idea of a solidarity-based healthcare system such as in Germany, which is actually legitimately worth protecting – not ‘only’ in the corona times. Developing and protecting the common good does not succeed against, but only with data and AI. But responsibly, with secure and protected, above all personal, data. The current data strategy of the German government shows good perspectives here (Bundeskanzleramt 2021). The German Ethics Council had already recommended ‘data donations’ as a sensible system supplement in 2017 (ibid.), especially for research and medicine. All these initiatives are good and right, but they do not have nearly the impact that would be necessary to manage a pandemic. Even the sensible legal initiatives of the last two and a half years, starting from the Federal Ministry of Health (Box 1), admittedly could not make up for many years of digital backlogs in medicine and the healthcare industry. But the concern that in the

end the many good foundations will not have sufficient effect is not unfounded. At this point, there is a risk of a massive loss of credibility for politics as a whole, of not being able to mediate adequately between protection and freedom and of having too little outcome. Article 1 (1), (3) of the GDPR actually formulates an enabling of data use.

Box 1. German Legal Initiatives

“The ‘app on prescription’ as the first access to standard care with the corresponding financing instruments according to §§33a and 139e SGB V is widely discussed – also under ethical aspects. With various testing procedures (including ‘fast track’ within three months) at the German Federal Institute for Drugs and Medical Devices (BfArM), the quality is assured, at least according to the claim, and the inclusion of the corresponding mobile eHealth application as a reimbursable digital health application in the ‘DiGA directory’ (digital health application) can be made.

Telemedical consultation in care facilities (by physicians) (nurses-Support Act PpSG), ePA (electronic health record – EHR), including the ‘Appointment Service and Care Act’ (TSGV), e-prescription (Act for More Safety in the Supply of Pharmaceuticals GSAV) and, of course, the eHealth Act as well as the planned changes to the Approbation regulation for Doctors (ÄApprO) and the eAU (Certificate of incapacity for work) resulting from the Ministry of Health’s ‘Master Plan for Medical Studies 2020’” (Heinemann 2020, p. 2; primary source in German translated by author).

And of course, the Act to Improve Healthcare Provision through Digitalisation and Innovation (Digital Healthcare Act – DVG) approved and adopted at the end of 2019 by the Bundestag and by the Bundesrat.

In the current report of the German Expert Council, the strategic section correctly states:

“A patient-centric approach will simultaneously facilitate the meaningful development and use of future digital applications in healthcare. In this context, particular attention must be paid to personal rights and individual security needs. The protection of informational self-determination by means of data security measures, as well as substantive data protection law, are structured in Germany with great regulatory depth and regulatory density. In the process, a strongly pronounced one-sidedness of interpretation of data protection has developed in the sense of minimising the processing and further transmission of data. This interpretation,

However, in view of digital medicine and the healthcare industry and thus the future of medicine and the healthcare industry in general, and even more so in view of the sad developments of the pandemic in Germany in particular, it seems to be becoming clear that data protection in the way it is interpreted and practised may itself be subject to increasingly critical scrutiny, given the financial and technological possibilities that Germany actually has or should have. The author himself has a hard time with this finding, because as an ethicist, autonomy, as it is valued and promoted in the GDPR, is very important and central, and we read right at the beginning of the GDPR that it is, of course, not about obstacles or barriers, but actually just the oppo-

who are familiar with these solutions. For the majority of professional players in medicine and the healthcare industry, and even more so for patients and their relatives, it is at best a nebulous piece of legislation whose effects are often perceived as a problem in practice and which, moreover, punishes violations with very high penalties. Ultimately, data protection in the form in which it is often lived in Germany is a clear overreach. From day care centres to university clinics, there are hardly any opportunities left not to immediately think of difficulties when it comes to personal data. Which, as I said, is not always fair to data protection, but on the other hand, it is because a law needs not only a good *ratio legis* but also a correspondingly transparent and feasible implementation

Technology is also but not only and not merely an instrument; rather, it must be addressed from the point of view of values

particularly in the form of the ‘data economy’ principle, is based on the unquestioned assumption that misuse of the processed data represents the greatest risk for patients. The significant risks to life and health of not processing data, on the other hand, are often underestimated as minimal or non-existent. Data protection in the healthcare system should protect not only data, but at the same time and above all the life and health of patients. This protection is a necessary prerequisite for being able to exercise self-determination, including informational self-determination, at all” (Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen 2021, p. 711; primary source in German translated by author).

It is understandable that data protectionists are placing data protection at the forefront of their efforts somewhat more clearly than perhaps other players.

site. However, the *de facto* situation is that data protection, while certainly not always justified, has meanwhile commonly come into a critical light. On the one hand, this is not entirely harmless, because if it becomes too critical, one could gamble away the actually good basic facilities of the GDPR through inadequate implementation. On the other hand, it is equally dangerous, because the possibilities that are undoubtedly associated with data, especially in medicine, must not be gambled away without necessity – and this can only be meant without absolutely first-rate and clear arguments as to when the privacy of persons in the broader context that is actually to be protected is to be preferred to health in the broader context (or even in the specific context).

It is true, of course, that the much-maligned GDPR allows for much more and offers many more solutions than most people are aware of, but only for those

dimension. Of course, there are other areas of law that are complex and legal frameworks that are difficult, but they do not affect everyone and certainly not everyone’s existence. The right basic idea is to set up data protection in such a way that it gives every person the chance of sovereignty over their own data, limits the possibility of radical data monopolies by large Internet corporations, and also prevents something like a ‘Health Schufa’ (Schufa is a German private credit bureau). *De facto*, this good basic idea is mostly settled by a few clicks, with corresponding more or less effective consents, and checking these corresponding provisions is hardly to be done by the corresponding agencies due to the mass. It is ethically quite critical to ask whether a construct, which factually already contains a real illegality perspective for a normal justifiable action, can still be meaningful. And, moreover, it makes its own *ratio legis* appear impracticable.

	Ethical Concern	Explanation	Medical Example
Epistemic Concerns	Inconclusive evidence	Algorithmic outcomes (e.g. classification) are probabilistic and not infallible. They are rarely sufficient to posit the existence of a causal relationship	EKG readers in smartwatches may 'diagnose' a patient as suffering from arrhythmia when it may be due to a fault with the watch not being able to accurately read that user's heartbeat (for example due to the colour of their skin) or the 'norm' is inappropriately calibrated for that individual (Hailu 2019)
	Inscrutable evidence	Recipients of an algorithmic decision very rarely have full oversight of the data used to train or test an algorithm, or the data points used to reach a specific decision	A clinical decision support system deployed in a hospital may make a treatment recommendation, but it may not be clear on what basis it has made that 'decision' raising the risk that it has used data that are inappropriate for the individual in question or that there is a bug in the system leading to issues with over or under prescribing (Wachter 2015)
	Misguided evidence	Algorithmic outcomes can only be as reliable (but also as neutral) as the data they are based on	Watson for Oncology is in widespread use in China for 'diagnosis' via image recognition but has primarily been trained on a Western data set leading to issues with concordance and poorer results for Chinese patients than their Western counterparts (Liu et al. 2018)
Normative Concerns	Unfair outcomes	An action can be found to have more of an impact (positive or negative) on one group of people	An algorithm 'learns' to prioritise patients it predicts to have better outcomes for a particular disease. This turns out to have a discriminatory effect on people within the Black and minority ethnic communities (Garattini et al. 2019)
	Transformative effects	Algorithmic activities, like profiling, re-conceptualise reality in unexpected ways	An individual using personal health app has limited oversight over what passive data it is collecting and how that is being transformed into a recommendation to improve, limiting their ability to challenge any recommendations made and a loss of personal autonomy and data privacy (Kleinpeter 2017)
Overarching	Traceability	Harm caused by algorithmic activity is hard to debug (to detect the harm and find its cause), and it is hard to identify who should be held responsible for the harm caused	If decision made by clinical decision support software leads to a negative outcome for the individual, it is unclear who to assign the responsibility and/or liability to and therefore to prevent it from happening again (Racine et al. 2019)

Table 1. Ethical Criteria for Assessing Public Health Interventions (Marckmann 2020, p. 203; primary source in German translated by author).

Veil's (2020) criticism that a 'one-size-fits-all' approach to the GDPR does not do justice to the subject matter can rightly be followed. The tax authorities are certainly to be evaluated differently than a blogger and multinational corporations or the craft business around the corner. The person processing the data would have to be reconsidered in their own power and risk as well as benefit of the processing. The narrow focus on personal data in the sense of the GDPR is too undifferentiated and cannot distinguish the in reality very different protection needs and processing risks. Data are not objects, and the structure of data protection law in the EU does not allow any consideration of which specific use of which data

should or should not be permissible. With this prohibition principle, even ethically desirable and even fundamentally protected processing of data is subject to constant justification and always on the border of illegality. So, what exactly does the GDPR protect? As long as this question cannot be answered clearly – ideally in a meaningful form as indicated – the interpretation will always remain problematic. Ultimately, data protection does not become the protection of data where it would be justified and appropriate. At the operational level, so to speak, data protection understood in this way turns life, the profession and ultimately everything into a risk-prevention matter. As if there could be no one on a private or professional level who did not want

to comply with rules that were already in place before the GDPR. Data protection thus threatens to become a self-contradiction.

In addition, the data economic perspective will become increasingly important: how can and will patients participate in a possible economic perspective of 'their' data? This question will be asked more strongly, even if no ownership of data is considered justifiable as of today (with good arguments, cf. Hummel et al. (2020) as well as Data Ethics Commission of the Federal Government (Datenethikkommission der Bundesregierung 2019)) – licensing models (Kerber 2016) as tested for decades in the media industry could form a bridge.

The Doctor Is In

The mediation of legitimate healing interests with justified concerns about dehumanised medicine, driven by minimal economic calculations, is the main task in medicine and the healthcare industry in the 21st century. Especially the data-driven use of AI, in this case, of course, ANI (Artificial Narrow Intelligence), is very impressive as far as the use cases in medicine are concerned, not everywhere but in many fields of application, and gives hope to many people but also professionals. However, in the closer context of concrete use cases, ethical considerations are substantial, as Morley and Floridi (2020) have elaborated (Table 1). In this context, a somewhat different logic of values is used as a basis for the digital public health sector than in Table 1, but the concerns are nevertheless comparable.

In particular, it is about algorithms, their development and application logic and their ethical evaluation. At first glance, it is clear that a kind of nomenclature of differentiated ethical issues is required, as well as intensive expertise in the field of digital medicine and the healthcare industry, in order to arrive at justifiable ethical conclusions. It is easy to imagine that since ethical values, their validity and justification have always been and continue to be the subject of struggle, and

Evaluation Criterion		Ethical Foundation
Functionality	<ul style="list-style-type: none"> Technology objective Degree of goal achievement ("effectiveness") Data and information quality Technical efficiency 	<ul style="list-style-type: none"> End-means rationality Principle of non-maleficence Principle of beneficence
Alternatives	Possible alternatives to digital public health intervention	End-means rationality
Potential benefits for the target population	<ul style="list-style-type: none"> Improvement of mortality, morbidity and quality of life Validity (level of evidence) of the proof of benefit 	Principle of beneficence
Damage potential for the participants	<ul style="list-style-type: none"> Safety, low susceptibility to errors Burdens and health risks Validity (level of evidence) 	Principle of non-maleficence
Self-determination	<ul style="list-style-type: none"> Promotion of health literacy Possibility of informed decision Impact on freedom of choice 	Respect for autonomy
Protection of privacy and health data	<ul style="list-style-type: none"> Informational self-determination Procedural and technical data protection measures 	Respect for autonomy
Data security	Security against system-related loss of the integrity of health data	Principle of non-maleficence
Justice	<ul style="list-style-type: none"> Non-discriminatory access to intervention Distribution of health benefits and potential for harm Contribution to the reduction of health inequalities 	Principle of justice
Efficiency	<ul style="list-style-type: none"> (Incremental) cost-benefit ratio Validity of efficiency measurement 	<ul style="list-style-type: none"> Distributive justice in the face of scarce resources End-means rationality
Responsibility	Attributability of responsibility in the use of digital applications	Principle of non-maleficence
Legitimacy	<ul style="list-style-type: none"> Legitimate decision-making authority Fair decision-making process 	<ul style="list-style-type: none"> Principle of justice Respect for autonomy

Table 2. A Summary of the Epistemic, Normative and Overarching Ethical Concerns Related to Algorithmic Use in Healthcare [Morley and Floridi 2020, p. 6].

since the intricacies of the digital transformation are not always amenable to consensus despite their scientific basis, such a conclusion is not always easy to reach consensually. For the private health of each individual and the further development of the professions, the question of the ethical evaluation of digital innovation in medicine and the healthcare industry will become central.

Digital Public Health Meets Ethics

Of course, digital public health is no more free of fundamental ethical questions than digital medicine and the healthcare industry are at the individual level, for example

in the doctor-patient (AI) relationship. The medical ethicist Marckmann (2020) lists eleven ethical criteria for assessing public health interventions (Table 2).

This list makes clear already in the first access that value conflicts arise, and with those also the well-known solution challenges; one thinks of the middle principles of Beauchamp and Childress (2001) which also find application with Marckmann. In the end, it remains methodically comprehensible but logically unsatisfactory how the four principles can be clearly weighed against each other in materially rich cases in practice – consensus usually works better under ideal conditions than under real ones.

In any case, the relationship between private and public health is particularly tense; in the pandemic, we learn that not every person is able to recognise their own health in the health of others. Various criteria named by Marckmann are challenging in justification and implementation, especially justice and autonomy can be mentioned here. Autonomy presupposes much for the individual, justice for the many. The impending digital health divide affects the public sector in particular. If inclusion in schools is already hardly successful, what will be the impact of ineffective digital inclusion in healthcare?

In the case of health data in the sense of public health, it is particularly important that every person can trust the state to use their own data only for the common good. This is already a prerequisite. In addition, the concept of sovereignty is a convincing theoretical illustration of the protection of the each individual's privacy with the opportunities for medicine as a whole and for the individual in particular, but in practice, as is becoming increasingly apparent, it is extremely difficult to implement.

An AI that is used responsibly in medicine is not 'a ring to rule them all', but a sharp sword which should be used very consciously; but then also really used and not pettily talked down by the naysayers. Ethics is the absence of pettiness and the presence of rational argumentation that does not confuse the emotions with one but also does not forget, because: the Good should have an impact in our world. So, it is in the end also true with the smart medicine.

Conflict of Interest

The author states that no conflict of interest exists. For this article the author has not used any studies on humans or animals. ■

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For full references, please email edito@healthmanagement.org or visit ii.hm/18m5

Sehat Kahani: Addressing the Social Phenomenon of Doctor Brides

Interviewee: [Dr Sara Saeed Khurram](#) | Co-founder and CEO | Sehat Kahani

Interviewee: [Dr Iffat Zafar Aga](#) | Co-founder and Chief Operations Officer | Sehat Kahani

Despite recent progress, female labour participation in Pakistan stands at 25%. This is markedly lower than those of countries with similar gross national income per capita. While 80–85% of the students in medical colleges in Pakistan are girls, only 44% registered with the Pakistan Medical and Dental Council (PMDC) are female. Why is this so, and what is behind this phenomenon of doctor brides? HealthManagement.org discusses this with two Pakistani female doctors and entrepreneurs behind Sehat Kahani, a health tech social impact enterprise in Pakistan aiming to democratise access to quality and affordable healthcare services in Pakistan implemented by a network of qualified female health professionals.

Tell us something about Sehat Kahani - why did you start this initiative, and what was your inspiration?

Sara Khalid: [Sehat Kahani](#) is a health tech social impact enterprise in Pakistan that aims to democratise access to quality and affordable healthcare services through user-focused ICT solutions implemented by a network of qualified female health professionals. We have created a network of e-clinics that use telemedicine to connect users to qualified women doctors online, while qualified nurses or health workers act as intermediaries. We have also launched a mHealth app that allows a patient to avail an audio/video consultation with an available network of qualified doctors. Our solution is recently being implemented in ICUs across Pakistan, and these tele-ICUs are catering to people severely affected due to COVID-19.

The story began when I was growing up as a child and my father wanted me to become a doctor. As I grew up and went to medical school, I realised many females join the medical field just to get better hands at marriage - a phenomenon called the doctor bride phenomenon in Pakistan. After graduating, I worked in the radiology segment for quite some time but had to quit work as I soon became pregnant. I resumed my work as a clinical doctor in a low-income community in Karachi. However, owing to my husband's transfer, I had to move cities. After having my first child, I fell into post-partum depression and in discussion with an ex-partner, I started doing audio calls to that clinic only. These audio calls converted into a video consultation, and this is how we initiated the concept of female doctors providing access to communities using telemedicine.

Iffat Zafar: The need for a supportive environment was something we felt was essential to bring female doctors

back into the health workforce and into the economy. I am a doctor by profession and worked in the pharma sector where there was substantial travelling and long working hours. My husband and I suffered the loss of our child in premature birth, and hence when I conceived again, I ended up quitting my job because of the social pressure that I felt. When I joined Dr Sara in her journey for this initiative, I had resumed work after a one-year break since the birth of my daughter; hence I felt the need for flexible work options for women who did not want to give up their career but at the same time felt they needed more time off from work. Thus, with the support of several mentors, Sehat Kahani was established to bring about such services in Pakistan to facilitate both the patients and the human resource issues related to healthcare.

The name 'Sehat Kahani - the Story of Health' was inspired by the fact that health problems do not only occur to those who can't access it but also to those resources

that play a role in shaping the health status of the country. Thus, the story of health is the story of a patient suffering from a disease, the story of the nurse who works hard to ensure the care and welfare of her patient, the story of the female health worker who strives hard to uplift the health conditions of her community and the story of the female doctor who struggles to be an integral part of the health workforce while tending to her family.

What are the primary goals of Sehat Kahani?

SK/IZ: Our primary goals are threefold:

1. Reintegration of female health workforce through

social level, we benefit our doctors by allowing them to practice medicine remotely from the comfort of their homes. The inclusion of these unemployed human health resources plays a major role in managing the healthcare sector challenges while mitigating cultural and social sensitivities. We currently have more than 5000 female doctors and specialists in Pakistan who are utilising our telemedicine solution to deliver health care services to their patients. Additionally, these doctors and frontline health workers gain financial inclusion, access to virtual continuing medical education sessions, recognition on social media, a chance

application, we deliver health services round the clock and have increased sensitisation towards the importance of availing health care.

Since the launch of our mobile health app in 2020, we currently have 250,000 active users on the app who are availing Sehat Kahani healthcare solutions. Our users have reported an increased convenience in accessing medical services and encountering a variety of connection services platforms, choosing the modality they prefer based on their own unique characteristics as beneficiaries. In contrast to traditional, clinic-based services, our users are able to

The term ‘doctor brides’ refers to female doctors getting married and quitting practice in favour of a full time role in the family

the provision of gender-inclusive employment platform using technology while providing them opportunities for capacity building and training skill set. 2. Reducing healthcare cost; improving healthcare efficiency by providing access to affordable and equitable healthcare while reducing travelling expenses both for patients and clinical staff and increasing female health workforce productivity.

3. Enhancing healthcare utilisation by improving early diagnosis and fostering access to new technologies and interventional strategies through telemedicine.

You have been working on this for the last five years. What has been the response? What has been the impact on female doctors in particular and on delivering care in general?

SK: Broadly, we have segmented our customers into two groups: our users (demand side) and our female doctors and health care workers (supply-side). At a

to attain additional certifications and most importantly, a whistle-blower initiating behavioural change for telemedicine in Pakistan. By facilitating information collection and making it transparent, our model strives to protect and empower end users/beneficiaries as well as contribute to the socio-economic development of SMEs.

IZ: Our other group of customers is our users, who can benefit from our solution through increased access to quality healthcare solutions. Through our e-health clinical model, we are reaching out to beneficiaries who are barely able to afford health services, and it has only worsened after COVID-19. This is partly due to the costs of seeking health care, including out-of-pocket spending on care (such as consultations, tests and medicine) and transportation costs and any informal payments to providers. Collectively we have reached 3.1 million users who have utilised our solution to avail health services. Through our mobile health

access medical services in an “on-demand” fashion, engaging in instant message exchanges, video chats, and remote exams.

Why do you think trained female doctors in Pakistan choose to give up their careers? Is it primarily due to cultural and social pressures? Or are there other factors involved?

SK: Research on working women in Pakistan shows that despite some progress in recent years, female labour force participation in Pakistan stands at 25%. This participation rate is markedly lower than those of countries with similar gross national income per capita. There are a number of constraints that hinder women’s entry into the labour market. Household work, including cooking, cleaning, caregiving and child-rearing, is still considered a woman’s primary role in Pakistan. Based on data from the Pakistan Bureau of Statistics, 40% of women who are not working



report that they do not have permission from the male members of the household. A woman's decision to work is mostly not her own but is determined by other household members. In Pakistan, while 80–85% of the students in medical colleges are girls, only 44% (58,789 of 132,988 doctors) registered with the Pakistan Medical and Dental Council (PMDC) are female. This is where the term 'doctor brides' originates as

it refers to female doctors getting married and quitting practice in favour of a full time role in the family. **IZ:** Furthermore, society members, cultural values, religious practices and caste system of Pakistan mostly discourage not only the employment of women but for a woman, even going to a healthcare provider is often a challenge. It is ironic that although society members discourage women's employment, at the

same time, they give more respect to employed women than unemployed men and women. In addition, working women are often not satisfied with their workplace and environment. To them, there are many security issues while working with men or under male bosses. Male bosses and colleagues sometimes treat women as inferior, and there are also cases of harassment. Because of these issues, parents and family members oppose women in their families to work.

What are the consequences of this for these women?

SK: The personal and social costs of unemployment include severe financial hardship and poverty, and housing stress, family tensions and breakdown, boredom, alienation, shame and stigma, increased social isolation, erosion of confidence and self-esteem, the atrophying of work skills and ill-health. Most of these increase with the duration of unemployment. Also, these women bear disproportionate responsibility for unpaid care and domestic work. Additionally, their unemployment can also be associated with poor mental health as a result of the absence of nonfinancial benefits provided by one's job, such as social status, self-esteem, physical and mental activity, and use of one's skills.

IZ: These women also lose their ability to participate equally in existing markets; their access to and control over productive resources, access to decent work, control over their own time, lives and bodies. They also do not have any meaningful participation in economic decision-making at all levels, from the household to international institutions. Ultimately, many of these women end up losing their confidence over a period of time.

What were the key challenges you faced when launching and promoting this initiative?

SK: Leading an innovative start-up in a patriarchal society such as Pakistan required a lot of integrity, effort and commitment. Each step, from the first launch

of the e-clinic to the expansion of our operations, while sustaining organisation growth was challenging. There were also financial challenges as women entrepreneurs are perceived as low risk-takers, and it is assumed that they would not be able to attain the desired success for their venture. This affects their ability to obtain external funding. Additionally, there were no telemedicine guidelines in Pakistan on a national policy level that would enable us to regulate our business model or integrate it smoothly into the traditional health care system. However, along with my co-founder, I realised that it was necessary to create an all-inclusive platform where women felt empowered to practice medicine and women in the communities felt safe to access affordable quality health service.

Are there any similar programmes implemented elsewhere in the world? Was Sehat Kahani inspired by something, or did your team come up with this based on the situation of female doctors in Pakistan?

SK: Sehat Kahani was co-founded in 2017 by myself and Dr Iffat Zafar because we both faced the socio-cultural barriers of not being able to have a supportive environment to fulfill our career ambitions. We realised that we live in a patriarchal society where women from all backgrounds are endured with several obstacles that prevent them from being able to work while looking after their families. The backlash faced by female doctors in prioritising their families over their careers is disheartening along with

upper-income beneficiaries encouraged us to explore options of telemedicine commonly used in developed countries.

How would you describe the role of telehealth in Pakistan now?

SK: Telehealth has been an increasingly successful strategy in filling the gap of access and quality in the healthcare system. Through outreach in remote areas, telehealth has played a major role in solving maternal child health issues in the rural population. Though Pakistan's health indicators have improved in the last two decades, this rate of improvement is relatively slower than the neighbouring countries. Pakistan's mortality rate for under-five remains the highest among the

Costs of unemployment for women include financial hardship, poverty, stress, boredom, alienation, shame, stigma, and erosion of confidence

IZ: We faced societal pressures of being a mother and a housewife while trying to launch a solution that was both innovative and much needed. In addition, male chauvinism is still prevalent in Pakistan and not restricted to rural areas alone. This made it even more challenging for us to stabilise our footing in the health tech sector. However, we remained resilient, and this enabled us to co-create Sehat Kahani that literally translates into a story of health. With the help of community stakeholders, partners and our team, we were able to launch a platform that gave women opportunities to voice out their health needs. Today, my co-founder and I lead a team of more than 120+ members, overseeing a network of 5000 doctors utilising our solutions and impacting more than 3.1 million lives collectively by making quality healthcare accessible, affordable and achievable for them.

the additional guilt of not being able to improve the health status of the community. We felt that it was time a solution was found so that female doctors could prioritise both their family and careers and serve humanity without the criticism of their male peers and family members.

IZ: At a previous workplace, I met Dr Sara, who was working on this concept with another ex-partner, and I fell in love with it. We felt that it was time a solution evolved to address the increasing health and work inequalities, so that female doctors could prioritise both their family and careers and serve humanity without criticism from their male peers and family members. In addition, the poor health conditions of people living in low-income communities and lack of feasible, innovative health solutions for middle to

South Asian (SA) countries. High maternal mortality (deaths) combined with high fertility (birth) results in a ratio of 1:89 women dying from pregnancy-related causes. On the other hand, in Pakistan, the doctor-to-patient ratio is close to 0.83 physicians per 1000 individuals in the population. Digital health interventions are being designed to address various health care needs while making up for the lack of qualified human health resources in our country. Several SMS-based interventions are being used to improve medication compliance in patients with NCDs. Telemedicine tools are being used to educate patients and keep health care professionals abreast of medical advancements.

The challenges typically relate to a lack of national policy and regulatory framework, weak governance structures, low client and provider adoption rates, weak



health workforce capacity and digital infrastructure (and digital exclusion), as well as issues relating to service quality, data privacy, and institutional resistance to digital disruption. In addition, the rapidly evolving technology space and the overwhelming diversity of available tools have made it difficult for actors in health systems to identify, adapt or develop solutions that are appropriate to their specific context and needs. However, despite all the challenges, digital health is steadily expanding through the efforts of multiple stakeholders in both the public and private sectors.

IZ: Globally, telemedicine is growing - currently estimated to be a \$38 billion market and expected to grow and become \$175 billion post-COVID-19. If I talk only about Pakistan, the smartphone and internet penetration is growing day by day, making access to digital interventions possible now more than ever. Beyond the COVID-19 pandemic, telehealth at scale has the potential to significantly improve health equity, especially in countries with low primary healthcare coverage, because it can improve the accessibility for patients who face challenges related to geography or disability. Telehealth can be a powerful solution for improving health outcomes locally and at the grassroots levels. But while telehealth services are now available in many countries around the world, public and private health providers are facing challenges to implement and scale up these services cost-effectively and systematically. However, despite all the challenges, digital health is steadily expanding through the efforts of multiple stakeholders in both the public and private sectors. Telemedicine may be the much-needed tool for improving healthcare in Pakistan. Over the last few years, it has been encouraging to see more doctors using telemedicine tools to deliver services. Telemedicine is a team effort and involves building trust and confidence. The focus on strengthening doctor-patient relationships and building a healthcare

network to improve access as a common goal will benefit all partners. This unique experience can create programmes designed for implementation in Pakistan with distinctive cultural, socio-economic and geographical needs.

How do you see Sehat Kahani in five years? What would you like to see added to its scope that is not included now?

SK: Sehat Kahani, like all the other global players in the telemedicine market, intends to grow its current business by expanding its telemedicine platform through e-clinics and mobile applications and not only become a market leader in digital health in Pakistan but also a global player. With the current COVID-19 scenario, the inertia towards telemedicine has already been broken, and the acceptability of seeking a doctor's opinion over a video call through a smartphone while maintaining social distancing and reducing the risk of exposure has grown tremendously. Sehat Kahani has already built a strong network of corporates and industry magnets (including banks, telecoms and pharmaceutical companies as the key giant players) as early adopters to champion Sehat Kahani's vision and impact during the current COVID-19 pandemic. They are availing our services for their employees and will continue to do so in future.

IZ: In the next five years, we aim to lock over 50 million active users availing e-health services through the e-health clinics and our mobile application, shifting the trend from physical health towards virtual OPD consultations and other digital diagnostic services. We aim to become the next 'Uber for Healthcare' in Pakistan. In these next five years, we would like to integrate advanced AI and VR components in the existing scope of our solution while striving to expand public-private partnership areas to promote the integration of our initiative in the basic health care system at national and international levels.

What is your advice to female doctors who are educated and have professional degrees but do not work?

SK: In a country where half of the population lacks access to a healthcare professional, I would say that you are the greatest asset to the nation, especially in these troubling and uncertain times. With the world going virtual, doctors - especially female doctors, do not need to go out in the field or hospitals to practice. Telemedicine has emerged as a beacon of hope for both patients and doctors to ensure that the help is provided to those in need. Hence, amidst this resurgence of COVID-19, this nation needs more and more doctors willing to serve through any means available to them. Involving the healthcare community will be instrumental in ensuring adherence, monitoring, and liability regarding telemedicine integration in our country. If you were not able to continue your medical practice due to any reason, now is the perfect time to gear up and get back in the field.

IZ: Faced with a common threat that is blind to wealth, gender and social status, we can create the equity in healthcare we have craved. This is the time to educate patients, doctors and the community. This "once-in-a-century pandemic" is our chance to change the healthcare delivery model in Pakistan. This is the time when we, as healthcare professionals, can face our vulnerabilities head-on and choose to be compassionate catalysts for a better tomorrow.

Conflict of Interest

None. ■

Creating an Awesome Future for Health

From surviving to thriving

Author: [Begoña San Jose](#) | Founder | Beandgo | Vienna | Austria

Human ability to adapt to change leads to surviving. Human ability to look for excellence leads to thriving. The current pandemic is revealing the limitations in the definition of health, in healthcare systems and shortage of healthcare providers. Simultaneously, it is showing the ability to adapt to changes, create capacity and use technology. The future ahead of us is the opportunity to design health and healthcare and to support health professionals – and citizens – for them to thrive.

Key Points

- A definition of health limited – de facto – to physical health, healthcare systems focused on efficiency, and healthcare professionals dedicated to curing have been challenged.
- Social and mental wellbeing should be – de facto – part of the definition of health, healthcare systems should be holistic, and healthcare professionals should be dedicated to caring.
- We have an opportunity to create the future of health, healthcare and health professionals.
- Giving health and wellness a pivotal role in all human matters will allow humans not only survive but thrive.

The Old Normal

“It is not the strongest of the species that survives, nor the most intelligent, but the one most adaptable to change.”

Charles Darwin

Adapting to change is a basic characteristic of species that survive. That’s why we have ‘normal’. Let us look at health, healthcare and health professionals through this normal.

Health in the ‘old normal’ was a term used almost exclusively to refer to physical health, which was often taken for granted, at least for those not suffering from any acute or chronic health issue.

Healthcare was about efficiency driving healthcare: short encounters with healthcare professionals looking at

symptoms. It was about going to the doctor when not feeling so well, getting referrals for tests, making sense of the test results, and getting treatment and prescriptions that with more or less success would restore ‘health’.

Healthcare professionals had to examine patients in short slots, one after the other, often having just a snapshot of the patients and treating more symptoms than patients. And, they were ‘there’ but these healthcare professionals were ‘invisible’, taken for granted.

A similar story can be told for education, schools and teachers, I believe.

During the Transition to the New Normal

During the COVID-19 pandemic, which is still ongoing, we have not yet found a new normal to accommodate to, so

things are in some sort of preliminary stage to which we see no point in adapting yet. During this transition period, let us look again at health, healthcare and health professionals.

Like in the fairy tale of the milkmaid and her pail, we are realising that without **health** – which would be the milk in this fairy-tale analogy – the rest of our plans and dreams cannot be realised. Without health, we cannot go to work or to school, we cannot travel, go on holiday, we cannot see our relatives, we cannot go shopping, we cannot go to the gym, you name it.

Healthcare is about managing the pandemic. It is about trying to get an epidemiological grasp of the virus and protect the population from getting the virus in the first place, get appropriate treatment in the second place, and prevent the disease in the third place. Hygiene measures



were re-introduced and people were reminded about the importance of proper hand-washing habits. Social distancing was also introduced to prevent the virus from spreading, and hospitals were challenged to allocate beds, resources, protocols and procedures to prioritise COVID-19 patients. Emergency and campaign hospitals were built in many cities and countries to add capacity. The space and resources for ‘the rest of the healthcare cases’ were reduced or rationed and many stopped accessing healthcare services for issues they believed to be less relevant, or feared getting additional complications for their ongoing diseases. We are still talking only about physical health although from the beginning myself and many others started raising our voices about the importance of

servicing these other conditions and also the mental and social consequences of the pandemic, both direct and indirect. We started raising our voices because social distancing measures have brought to the surface the problems of social isolation and loneliness affecting an increasing number of people, especially in the older age groups. The same measures also have severely affected those who had underlying mental health problems and who as society we were pretending did not exist, and affected many more, with the symptoms of anxiety and depression increasing significantly. However, neither social wellness nor mental health issues are solved with teleconsultations and prescriptions, and the scarcity of resources is imminent.

During the COVID-19 pandemic, **healthcare professionals** were no longer invisible. For a while they were called heroes, but heroes are not supposed to feel tired or scared. Then they were forgotten, taken for granted again. The first waves were also marked by citizens clapping and being grateful to healthcare professionals. Professionals were called to face ethical dilemmas and put themselves and their families at risk, at the beginning without adequate protection measures, and then because their own immune systems were hijacked by fatigue, stress and sleepless nights.

We do not want just yet to consider the current situation as the ‘new normal’. We are looking for the positive impact of the pandemic on our lives, including the reduction in emissions and the positive impact on global warming; the positive impact of flexibility on the workplace and technology-enabled remote working and schooling; the convenience of internet shopping; etc. but also at the negative aspects of it, including the financial impact that remains to be seen, and of course, the social and mental health consequences in the medium and long term, including the impact of sustained home-office, among others, and the fact that, as we all know, the longer the tunnel is, the more different the landscape and the weather at the other end will be. How do we take this pandemic and design the new normal?

Towards a New Awesome

“The best way to predict the future is to create it.”

Abraham Lincoln

Health is physical, mental and social wellbeing and not the mere absence of disease, as defined by the World Health Organization. It always was, from the time of ancient Greece.

Healthcare can be enabled and amplified by technology at least to facilitate access and add comfort. Healthcare can be effectively delivered outside hospital wards and outside doctors’ offices. Patients can choose how to access

healthcare and how to engage in healthier lives with technology. Patients, once passive recipients of healthcare, have now been engaged in understanding the basics of epidemiology, the impact of the frequency of testing on the number of positive cases, the impact of their own behaviour and that of their co-citizens regarding the public health measures. Mental and social health, however, is not measured by test results. Mental and social health issues are not cured with pills nor are prevented with vaccines.

Healthcare professionals are human beings, they have been more exposed to the pandemic than their fellow citizens. Their role has been recognised and appreciated. Even though often they are called to treat patients in what I call 'astronaut suits' to protect themselves, most have engaged in some sort of telemedicine applications, with teleconsultations, symptom checkers and other healthcare innovations finding their way into mainstream healthcare delivery. Some have even introduced robots. The role of healthcare professionals, especially when it comes to understanding complex data, unstructured data and associations that they know little about, for example, because of the recent history of the virus, can be enhanced with technology; machine learning and artificial intelligence algorithms can support healthcare professionals.

Humans Excel to Thrive

"If you are always trying to be normal, you would never know how awesome can be."

Maya Angelou

Let's try awesome. What is awesome health? What is awesome healthcare and what are awesome healthcare professionals?

Awesome health is physical, social and mental wellbeing. It is intellectual and occupational wellness that recognises humans' creative abilities and looks for ways to expand knowledge through stimulating activities, which also means using technology to take on repetitive and low-value tasks. Awesome health encourages people

to find fulfilment and contribute meaningfully with their skills and strengths, with a special mention to all healthcare professionals. It is emotional wellness, and with it, the understanding and acceptance of one's emotions to manage life challenges. This will be especially important as we face the societal and financial changes that will follow this COVID-19 pandemic and other upcoming aftermaths for which we have to build resilience, confidence and trust. It is physical wellness through habits that nurture our bodies and boost our immune systems. It is social wellness and being able to maintain strong and diverse relationships and engaging in healthy social initiatives including the arts (again re-forgotten). Awesome health includes integrative and preventive solutions like 'arts on prescription'. The power of the arts to play a major role in health promotion has been confirmed by WHO and the arts on prescription programmes are being used in several countries already and are a good starting point.

Awesome healthcare is certainly beyond hospitals and doctors' offices. It is everywhere. It is at home, at school, at the office, in cities, in villages and on the go. It is in supermarkets and shops, in restaurants, with friends and in hotels. It is during holidays and during the work time, when we eat and when we sleep. It is embedded with life, not dissociated from it. It is not a special chapter to take care of when everything else keeps going.

Awesome healthcare professionals are human beings. They are enhanced with technology so that they can provide care and be what the word suggests: healthcare professionals, or 'professionals caring'. Caring for patients is knowing them, recognising their symptoms but also their lifestyles and their life circumstances. The domino effect of one symptom and one intervention that impacts another symptom, another organ, another aspect is more preventable. It is having the knowledge and the expertise to provide 360° of healthcare, with their expertise and specialisation but coordinated with other healthcare professionals for the better health and wellbeing of patients, when they get sick but also so that they do not get sick. Being able to actually

deliver health. It is care enabled by artificial intelligence if it can be, but it is care certainly enhanced with emotional intelligence, as well as social and spiritual intelligence.

Where Do We Start Creating This Awesome Future?

Let's start by accepting the consequences of staying true to the definition of health, as physical, social and mental wellbeing.

Let's define healthcare as delivering on these multidimensional aspects. Wellbeing starts with healthy habits such as nutrition and physical activity that impact our physical but also mental and social health. Take dancing, for example, as a physical activity that also has an impact on social and mental wellbeing. Healthy nutrition habits also impact sleep and mental wellbeing by acting upon our energy and irritability.

Let's define healthcare professionals as the professionals contributing to our physical, social and mental wellbeing, and supporting us in engaging in healthy habits, and that would include psychologists and social workers, teachers, dance teachers, music teachers, art therapists and all those professionals adding to our physical, mental and social wellbeing. Let's start the training of the healthcare professionals of the future, and of the patients of the future. Let's equip as many as possible to proactively manage physical, mental and social wellness and to reduce as much preventable issues as possible.

Conclusion

Let us predict the future by creating it. Let us try awesome. Continuously improving is thriving. Giving wellness a space in human living, in schools, in universities, in families, at the workplace, at the supermarket, at restaurants, with friends. Giving health and wellness a pivotal role in all human matters. So that humans not only survive but thrive.

Conflict of Interest

None. ■

Robots in Healthcare: Challenges of Integration



Interviewee: [Prof Héctor González-Jiménez](#) | Associate Professor in Marketing | ESCP Business School | Madrid | Spain

With his main research belonging to marketing domain, Prof González-Jiménez's academic interest in the last few years has expanded to applications of robotics in different sectors including healthcare. He talks with HealthManagement.org about the 'human' dimension of the robotics deployment in healthcare setting, covering issues such as perception and acceptance among people who encounter robots and the need for a 'smooth' integration of the technology.

What examples of robotics/AI application areas in healthcare would you highlight?

We can differentiate in this domain to see what is happening already in terms of the capabilities that these technologies have versus what might be happening in the future. We've already seen some applications in the medical domain, in particular in hospitals. For instance, during the pandemic robots are being used as an 'interface' between medics and patients helping reduce human contact and thus, the virus transmission. Robots would take temperature, bring the medicines to the patient while the doctor could still communicate – remotely, through the robot – with patients.

Then, of course, robotics is increasingly used in surgery allowing the surgeon to be much more precise. Experiments on conducting a surgery remotely take place as well offering new opportunities to provide treatment. Obviously, this requires some very strong connectivity to ensure proper transfer and processing of data.

Speaking about possible applications that shouldn't be too complicated, it may be in pharmacies, with robots being used to provide products or services,

especially if the work of humans is restricted because of time or resource constraints, such as during night shifts or in remote areas. Perhaps, these could even be managed remotely by a human on call, servicing multiple pharmacies through an interface.

Another example could be elderly care facilities where robots are already being used to support physical manipulation of patients. We're seeing that in particular in Japan, where more and more elderly homes use robots to enhance such activities.

These examples are not very far-fetched. It is more a matter of if they are integrated and when, but this goes into a different topic of finances, economics, acceptability, or resistance on the part of patients and healthcare managers.

Is there danger of potentially negative perception of robots in patients and healthcare workers?

I can only imagine that the reaction will not always be positive, it can be all sorts of anxiety. It very much depends on the person that is being confronted with

or using the robot. Just like with other technology, sometimes so simple as smartphones, we have people who are afraid to use it.

In the pharmacy example, it would be a matter of how easy it is to receive the service. Yes, there might be an initial surprise, but if everything functions smoothly and the person is not required to have any specific technological knowledge, that is key. This could be the ATM of pharmacies. Banks are increasingly introducing technology. This is not always in the customers' interest, but there is surely an increased use of ATM or online banking. So it's a matter of progressive integration and this still needs to have human support available at the initial stages.

Speaking of the elderly in the long-term care facilities who, for example, may be opposed to their 'favourite nurse' being replaced by a robot, this situation brings about the issue of empathy and human touch that cannot be replicated yet. However, there have been studies where robots were deployed in such facilities and some of the responses were very positive. You would see residents playing with a robot that resembled a pet. Another robot would engage them into exercising,



and they developed a certain affinity towards it. Again, no technical knowledge was required for them to interact with the machine. This is where the trade-off comes in.

Another point is resource limitations in the industry, e.g. in terms of being understaffed to provide the necessary attention to the patients. This is as well where the integration of these robots can be helpful. It's about enhancing the experience, so perhaps these robots can entertain, or take care, or help avoid some of that loneliness which the elderly people might experience.

It is about measuring this, and that gets to one of the points that are receiving much attention currently: it should not be about replacing; it should be about collaborating to enhance the experience for the patient and for the worker. We should integrate robots and humans to make the experience better; so that human staff

are freed up for activities at which they're better and that the patient receives the added value, or added care. That should be the goal of the integration of these technologies.

How do you find this balance?

The challenge here goes back again to economics because at the end of the day a healthcare organisation, whether public or private, needs to be financially viable. An initial investment is required to integrate these type of machines, not just buy them. There has to be training for staff and patients, to allow for a gradual acceptance.

I am pretty confident it will lead, in the medium to long term, to the replacement of some particular tasks or reduction in the workforce, but if done correctly, I

wouldn't expect it to be as drastic as the media sometimes present it. It's not so much about replacing a job, but replacing a particular task related to that job. Staff in a nursing home are accomplishing many tasks within their shift, and robots might take on some purely mechanical tasks like bringing a tray of food or a medicine. If you can free up human staff from those particular tasks, they will have that added time to provide services at which humans are better than the machines, which imply those human touch and care; to be with the patient longer and make them feel welcome. That psychological element is as well very important for the wellbeing of the patient.

So the leaders of those institutions should consider this integration and this need for an additional investment initially. And perhaps, yes, there will be a certain reduction of the human workforce, but we need to balance it out. It's where that interplay between ethics and economics comes forward, and this might be supported by the relevant regulation where you have to keep certain ratios potentially. There is as well the matter of training future leaders so that the benefits of the patients and the workers are given the utmost priority.

Overall, this is, of course, not an easy task. I don't have all the conclusive answers but it's important to at least try and make a conscious attempt to find that balance where the end result should be an enhanced value for all. Improved care will have a positive impact in the long term, including on the financials of the organisation.

What approach would you recommend to address these challenges of introducing robotics in healthcare?

As I said, the key challenge here is the economic issues which need to be considered to make the company or the institution viable. Another one is acceptance. If you introduce these technologies and your patients are resistant, that can kill your business, especially if

patients have another provider to turn to. Therefore, the priority should be in having a gradual slow integration. I would even go as far as using some sort of a test here. As certain segments of consumers are more open towards new technologies, they could be the first group to try those out. If the perception is positive, they will spread the word, become the ambassadors and may help take some of that anxiety away from others. To have this ‘trickle-down’ effect, use the early adopters similarly to influencers in the social media world.

People will also have to be provided with options and asked to consent. Having a choice between a fully

the rollout will also differ on a national level. But again, look at the finances, try to find an ethics vs. economy balance and smooth the integration by giving people the choice. As a result, more people would advocate this type of service, assuming it works well, obviously.

If it doesn’t work well, we have to take a step back and think if it should either be delayed or transformed on the basis of interdisciplinary feedback involving engineers, manufacturers, etc. and let them know about the needed adjustments, so that the robot or AI can be accepted and function properly in the service setting, in particular in healthcare.

actually help you do your job, where you can add value with it. This goes for both healthcare staff and patients.

In addition to the global organisation mentioned earlier, we would need that education at the country level, perhaps even at schools. I am not concerned with the younger generations, they’re already growing up with and accepting technology around them. But for those who haven’t had that much of technological exposure, it might be more complicated. Have you ever heard of libraries offering courses for the elderly to use the internet or a computer? There could be similar workshops on robots as well, preparing people

It should not be about replacing; it should be about collaborating to enhance the experience

human care or a human plus technology care may help smooth the integration. This, of course, again requires an investment to make this sort of a ‘sales pitch’ and demonstrate the potential advantages to users. Borrowing from the marketing domain, there may be some incentives, some benefits provided to those who opt in to use the technology.

In any case, it should be kept in mind that you can force it only up to a certain point, just like online banking is being forced on most people. It has a lot of great advantages but many people are getting very stressed with it. And the industry is not really adjusting; I would be happy to see it slow down and give people more options.

This will also differ depending on where you’re located. In some places, not just urban versus rural but also some countries versus others, people in general are more open towards the integration of these technologies while other countries might lag behind. So

Would you say that some specific education is needed to facilitate the acceptance of new technology?

Yes, absolutely. Even though I’m trying to paint a positive picture, there are drawbacks which need to be highlighted – although the media are doing enough of that already, especially in the West, creating a more negative narrative. Education is definitely needed, and I would go even further to say it is needed at all levels. There should be some global organisation to regulate these matters and provide some type of service, technically similar to the WHO.

The first in line would be people who work within the hospital. We need to take certain anxiety away from them because they might be thinking, “Why do I need to work now with a robot that might take my job away?” or “I don’t want to work with the technology, I’m doing my job well as is.” So again, this education should be about how this technology can

for future experiences at the hospital, public administration offices, etc.

This is how it will work. It’s about introducing the technology and educating different populations about what they might encounter and how it might be. I would stress again here that the requirements for any technical knowledge should be minimised, not to create anxiety. Robots should be autonomous enough, be able to react to voice commands, for instance, to make the interaction as natural as possible and replicate human interaction as much as possible; that’s what people are used to. I think we can borrow this knowledge of how humans communicate and try to mirror that.

What impact has the pandemic had on the development of robotics and AI in healthcare?

I cannot give you hard figures, unfortunately, but my hunch is that it has probably accelerated, just like anything else digital has in the last year. There’s even



a new joke in the corporate world: “Who is responsible for the digital transformation in your company? CIO or CTO?” and the answer is, “COVID”.

There have been a lot of reports, in particular at the beginning of the pandemic, for example, from China where autonomous vehicles were used to deliver food to people during the lockdown, and robots being used in hospitals. Just recently, a bar in Spain has been reported to be using a robotic waiter to reduce physical contact. Even if it is a publicity stunt, it creates awareness and I would not be surprised if robot manufacturers are now more busy with orders. I could imagine a hospital



administrator having read the news about China and thinking if this was something they could use as well.

This is also true for regular people – users and patients. Seeing these applications might stick with them: okay, robots are here already. And that might help in accelerating this acceptance or integration process.

What about the digital divide? Wouldn't these developments widen it?

I completely agree, it would. I don't know how to solve this, just like we've been trying to solve these issues as humankind for centuries. Differences will be there because more advanced hospitals, with more resources,

may be more willing to invest first and try it out. Also, countries, or even regions are just different. I don't see any short-term solution, but perhaps, from a more positive point of view, as the integration of these technologies evolves and increases, the economies of scale may play a role, just like with any other technology. Probably, the latest version, the newest robot would always arrive first at richer places but, as with mobile phones, eventually you can have all the necessary basic functions in both expensive and cheaper devices.

From a psychological point of view, what would be the negative implications in people's lives and health from the increased use of robotics?

I'm not a psychologist by training, but in my view, the increase in anxiety which it might create in some people goes beyond just robots and AI to include all sort of technology, such as social networks. My perspective is twofold. On the one hand, technology gives us a lot of possibilities. However, I also feel there's that danger where we start getting disconnected on a human level. It creates a lot of tension and anxiety.

In healthcare, it's even more delicate. You're encountering people whose stress levels are already high. So you need to be very sensitive and very sensible when you interact with patients or people in the facility. That's why I'm saying the integration has to be very gradual and optional, and perhaps first with people who are more open towards it. You cannot force it upon them, especially not in a healthcare setting where the anxiety or sensitivity is already high. We need to be especially careful until people understand what is the added value that they might get from that interaction. Then maybe the anxiety will be reversed and they would appreciate that process where they could walk into the hospital, check in through a facial recognition system, and a robot concierge takes them to their room, provides all the necessary equipment, etc. instead of them having



to wait in line – which during the pandemic time can be a stress in itself. If everything works smoothly and can provide that type of support, it might reduce some anxieties. So it is about trying to emphasise the value that you can get.

Would it make a difference if the robot had a cultural orientation instead of being neutral?

There are projects already being realised in this direction. By fine-tuning the software, the robot is able to use facial and voice recognition, among others, to pick



up keywords and get an idea of which culture you might belong to. Obviously, it builds a little bit on stereotypes but there's high probability of the robot's identifying the cultural background and acting accordingly, for example, allowing direct physical contact or not, using certain gestures or not, maybe mimicking some emotions, etc. This could make people feel more comfortable and even develop some type of attachment. I think that's not far-fetched. This might be important especially in a place with very diverse population of patients, like a cosmopolitan area of a city.

In conclusion, what approach to the human/robot coexistence would you like to be seeing in the future?

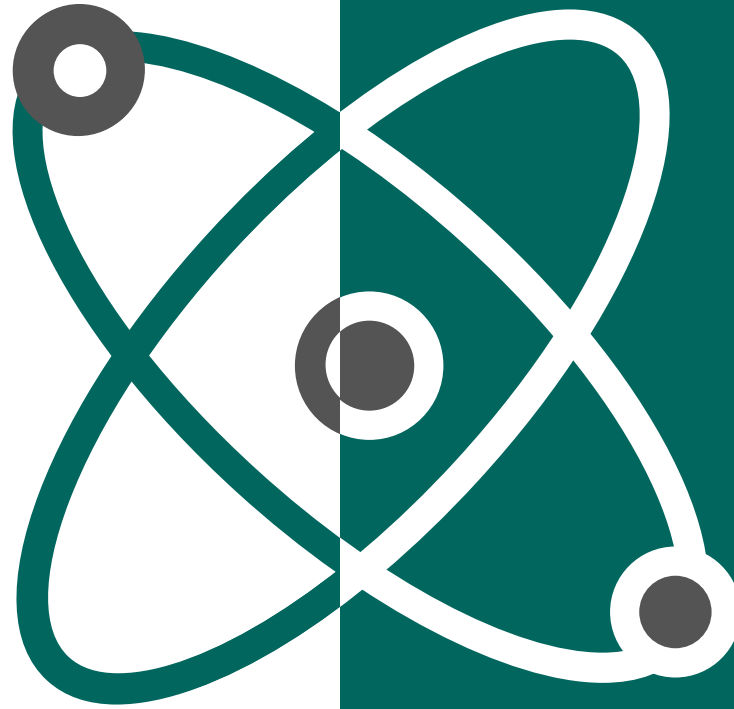
I think we need to make sure that the narrative becomes, especially in, I would say, Western society, more balanced, not focused on those Terminator or Matrix scenarios of robots taking our jobs and conquering the world. We need to find balance in terms of potential benefits and make clear that the scenario that hopefully we'll be pursuing is collaboration to enhance overall wellbeing and our experience as a patient, a customer, or a co-worker rather than seeing robots as something which will replace us fully and take our life away. Again, the risk is there and it's a valid argument which needs to be addressed. But our responsibility is to try and make the integration in such a way that robots are seen as collaborators, as allies rather than enemies. There's opportunity for that and the message should also be in that line so that people can reduce their anxieties towards these technologies and be proactive towards making this happen in a more collaborative way.

Conflict of Interest

None. ■

You can watch the full interview here: iii.hm/18om

Some of the questions have been edited for brevity and clarity. All photos provided by the interviewee.



WINNING PRACTICES

“Digital transformation has started, but basic questions remain about how it will stay – in 2021 and onwards”, *page 184*

Harnessing the Potential of Technology for Mental Healthcare

- Author: [Marie Paldam Folker](#) | Centre Director | Centre for Telepsychiatry | Odense | Denmark
- Author: [Søren Lange Nielsen](#) | Research Assistant | Centre for Telepsychiatry | Odense | Denmark
- Author: [Mette Atipei Craggs](#) | Specialist Consultant | Centre for Telepsychiatry | Odense | Denmark | Vice President | EHTEL

Digital mental health services hold great potential for the future of mental healthcare provision; embedding the services in a stepped care model (with steps providing prevention or treatment of different intensities depending on the severity of the illness) and in a hybrid approach (integrating both virtual and in-person care) ensures that the services are accessible, flexible and adaptable.

Key Points

- Digital mental healthcare has the potential to bring more access, flexibility and cross-sectoral collaboration into mental healthcare provision.
- Digital services constitute a vital part of managing the COVID-19 crisis in the mental health services of the Region of Southern Denmark.
- On top of important aspects such as data security and privacy, coming challenges lie in ensuring health equality and minimising the digital divide.
- Ways forward for digital mental health lie in service formats independent of time, known as 'asynchronous', which can be combined with in-person encounters to a stepped and hybrid care concept across the entire mental health pathway.

Digital Technologies Have the Potential to Transform Mental Healthcare

Globally, there is a troubling increase in mental health disorders – a challenge further reinforced during the COVID-19 crisis. At the same time, a worryingly large proportion of people who experience mental illnesses do not seek the help or support they need, which widens the treatment gap. These unfortunate developments put pressure on our healthcare systems, while

leading to a shorter life expectancy in the patient group, often from underdiagnosed comorbidities.

To counter these challenges, **our mental health-care systems are in need of transformation.** At the Centre for Telepsychiatry in the Region of Southern Denmark, we believe these changes need to be inter-linked directly with an increased use of digital treatment and support. Digital technologies have the potential to transform mental healthcare by connecting patients,

services, and health data in new ways. They can make it easier and more convenient for patients to access mental health services and they offer flexibility in how treatment pathways can be personalised and adapted to individual needs and preferences. Benefits include shorter waiting times, avoidance of service gaps, and the potential cost-effectiveness of digital services.

Digital services can increase capacity of the mental healthcare system by allowing healthcare professionals

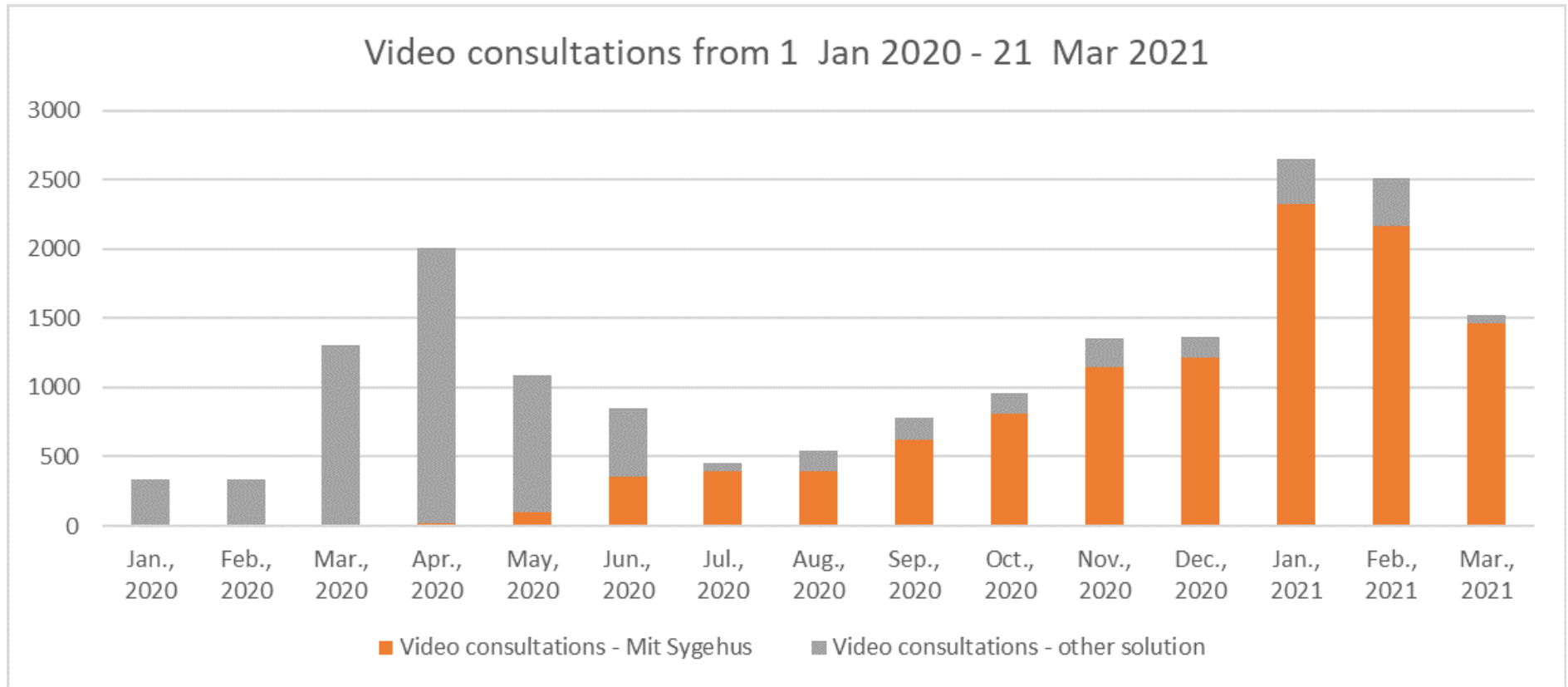


Figure 1. Increase in Use of Video Consultations During COVID-19.

to treat more patients. Asynchronous digital mental health services such as online therapy, digital monitoring of symptoms and social functioning, and self-care tools enabling people to take control of their mental health allow for promoting mental health and preventing mental illness.

Over the past decade, the use of digital health services has made it possible to reach patients in remote areas or with limited mobility so that they receive the treatment

or monitoring needed. In this respect, the mental health field is no different from physical healthcare. But, as the field of digital mental health has grown and more services have been developed, tested and implemented, it has become clear that **some people experiencing mental health problems benefit even more from digital treatment options than they would from in-person care.**

Examples show that both travelling to see a therapist and keeping contact with a hospital can be stressful. People affected by anxiety or post-traumatic stress disorder can find the concept of travelling to see a therapist in person (and spending time in a waiting room) so demanding that they either give up entirely or are so exhausted when they get there that they are not able to fully benefit from the therapy offered to

them. Staying in contact with a hospital can be challenging too. Some patients can find it crucial to get support by staying in digital contact with a hospital after discharge, or having digital contact with peers, which can help them transition back to life at home and avoid a readmission.

A particular challenge in the healthcare domain is the gap between mental and physical healthcare services. This is an important issue in the lives of people experiencing mental health problems. Many patients have comorbidities, which, if left untreated or treated in parallel and without coordination, can have serious consequences for the patients' illness trajectory and quality of life. The use of digital technologies offers opportunities for increasing coordination across health and social care domains and for minimising any gaps on the patient journey. Digital technologies can be based on shared data that follows the patient, and they can even just make possible increased communication and coordination.

Building the right technology platforms and tools, which add value for both patients and healthcare professionals and systems, is crucial and requires close collaboration between everyone involved. Additionally, we need to invest in training, guidance and support to ensure that digital mental healthcare will continue to improve everyday care, even after the immediate threat of COVID-19 lessens.

Of course, however, **digital technology is not a panacea for all our problems nor a replacement for in-person care.** But digital therapy and support can and will offer increased access to treatment and improve outcomes for people with mental health problems. In the Centre for Telepsychiatry, we know this from experience, as we have spent many of the last years committed to the development, research and implementation of innovative technology-based interventions that are clinically relevant, safe to use and meaningful to our users in the Danish mental health services.

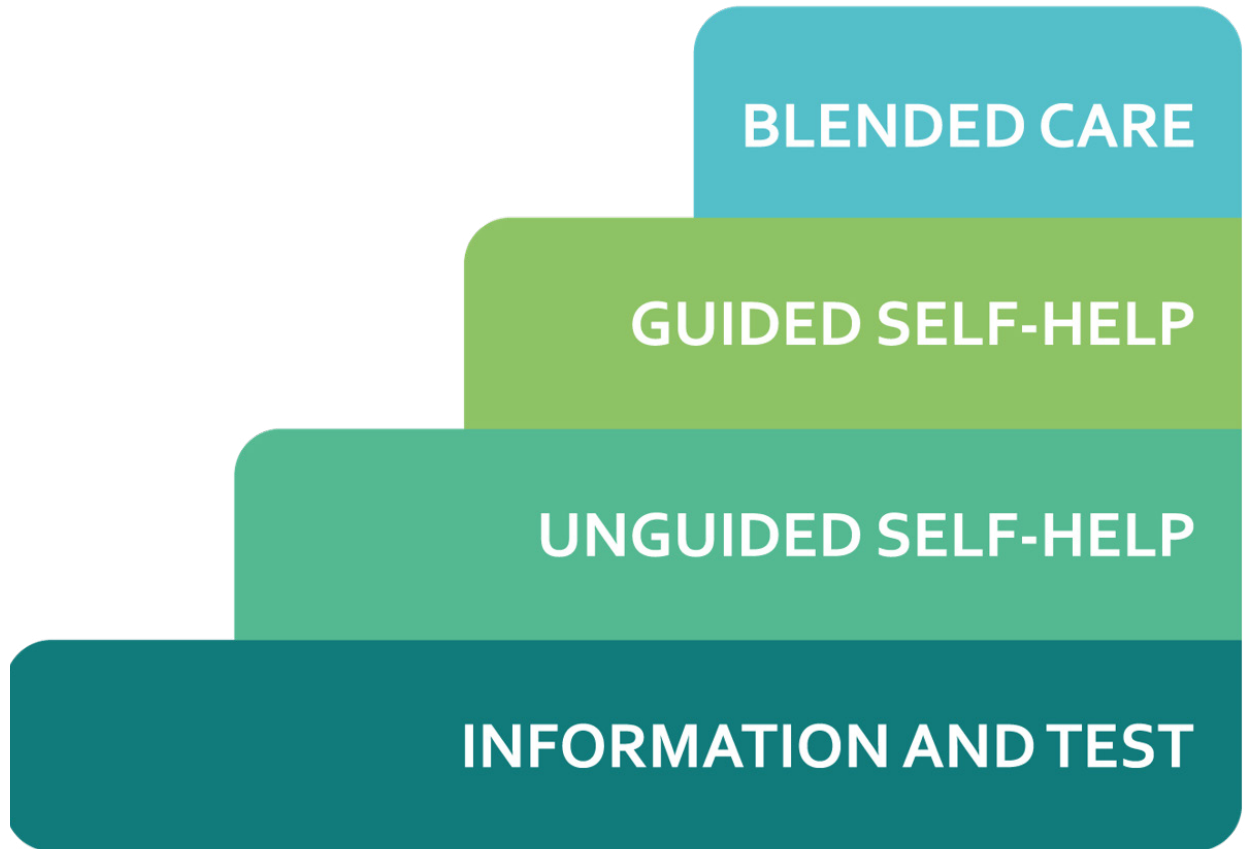


Figure 2. Towards a Digital Stepped Care Approach.

How Digital Mental Healthcare Has Proved Its Worth in the Midst of a Global Pandemic

In the Region of Southern Denmark, the development, validation and implementation of digital mental health services have been priorities for nearly a decade. The services range from well-known and well-tested technologies such as video consultations and internet-based Cognitive Behavioural Therapy (iCBT), to more cutting-edge innovations like Virtual Reality and

Artificial Intelligence. Let's look, first, at video consultations and after that, at iCBT.

As the pandemic hit in early 2020, digital services became an urgent need in Southern Denmark, and our experience with digital technologies enabled us to move fast. The most important task became to provide people with access to treatment and services, without compromising the health and safety of either patients or healthcare professionals.

In our region, we immediately saw a dramatic increase in the use of video consultations (Figure 1). The service proved vital in managing the crisis in our mental health services. Within days, all outpatient care shifted to virtual visits, and 70% of consultations took place via phone or video. In the first week of the pandemic, we moved to a completely new video platform, 'Mit Sygehus' ('My Hospital') to meet the intense rise in demand (Centre for Telepsychiatry 2020). Key learning points from this experience taught us to focus on three critical issues: the importance of technical support and training, the establishment of local infrastructures of key contact persons to enable professional peer support, and the tailoring of support to both patients and staff.

online and largely asynchronous format ensures that patients have flexible access to therapy and support, while fostering self-efficacy in those patients who complete the programme. The service builds on a solid evidence base showing significant effect sizes comparable to face-to-face treatment, and with an average of 15-20 minutes spent with a patient per week, we see a reduction in the time therapists spend treating each patient compared to regular care.

The online clinic is a national digital mental health service funded by the five Danish regions in collaboration. It has been running as routine care since 2015. During the 2020 pandemic, permanent funding was secured for the service due to strong Danish policy support for online therapy services.

format. Depending on the severity of the patient's illness, we can provide steps that range from basic information over asynchronous and unguided treatment to synchronous real-time treatment blending virtual and in-person consultations.

Making Digital Transformations Stick

Digital transformation has started, but basic questions remain about how it will stay – in 2021 and onwards.

All over Europe, conversations related to digital health were influenced deeply by a shift in needs caused by the 2020 pandemic. The discussion at the 2020 EHTEL symposium was no exception. Digital mental health featured in the programme with the [session](#) 'Contributing to improved health and commu-

Video consultations are used as a supplement to regular care, and for medication management, psychotherapy and other forms of support

With or without COVID-19, video consultations have several uses. They are used as a supplement to regular care, and for medication management, psychotherapy and other forms of support.

In Denmark, the video consultations service model has been implemented at scale since 2015 with reimbursement now equalling in-person consultations.

Another vital access point open to our patients was the online therapy clinic delivering iCBT for depression and anxiety. With this service, patients have access to online materials based on Cognitive Behavioural Therapy (CBT) self-help manuals designed to offer the same information as provided in regular CBT therapy. Over the past six years, our clinic has provided online psychological assessments, therapy and referral services to more than 4,500 patients. The

The clinic will form the basis for important development work in the coming years. The aim is to expand the range of treatment options (e.g. targeting new diagnoses) and work towards an unguided version of the therapy programme, which will allow for patients to access and complete the programme independently from psychologist support. It will also form part of a hybrid (or 'blended') care concept as the very top step of a stepped care model.

Digital care works well if it is introduced through a series of steps or stages. In the Centre for Telepsychiatry, we are working towards a digital stepped care approach, as illustrated in Figure 2. The model will consist of a number of distinct steps that move from stand-alone to guided forms of care, where virtual and in-person care formats are blended into a hybrid

nity resilience: the role of eMental health', including contributions from the Centre for Telepsychiatry and GAMIAN Europe. The session has since spun out into a new workstream, which the Association is promoting, that focuses on [hybrid care](#) (Box1). Among other initiatives, it will materialise in a series of webinars in 2021.

Box 1. Hybrid care can be described as a merging or bringing together of both physical encounters (e.g., appointments or health visits) and virtual encounters between health and care professionals and patients in the same treatment pathway.

At the Centre for Telepsychiatry, our focus now is to learn from the extraordinary circumstances brought on by the pandemic in 2020 and keep our momentum

on sustaining digital mental health services. The digital format may not continue to function at the same pace and scale in 2021 and beyond. However, in a post-pandemic setting, we believe strongly in the flexibility of combining treatment formats in a hybrid care concept, as part of a stepped care model. The approach will enable us to provide the appropriate level of care and support for each patient.

There are many benefits to digital mental healthcare. The treatment format shows increased flexibility and potential cost-effectiveness. In the centre, we have a strong evidence-base for how digital mental health can be used to offer effective care in several psychiatric conditions, when combined with regular care. For instance, smartphone apps can be useful tools for some patients, but their effectiveness more than doubles when

targeting unmet needs, training of healthcare professionals, clinical guidance around implementation and delivery, as well as patient partnerships in digital service design.

Despite the many and well-known benefits of digital mental health, concerns prevail about data security and privacy, the digital divide, health inequalities and the uneven evidence-base for effectiveness. In the Centre for Telepsychiatry, we strive to ensure that our services are both safe and effective – efforts supported by our in-house research unit and data management team. A bigger challenge is tackling the digital divide, which seems to increase with the growing use of digital services.

Certain patient and population groups risk are being left behind if they do not have access to digital services. Accessibility depends on the availability of technolog-

of mental healthcare to lie in its freedom from time constraints: it can serve patients at any time of the day or night, as needed, and healthcare providers can adopt a one-to-many approach thus avoiding additional strain on healthcare systems. **Used in meaningful combination with regular care, this is where digital technologies can really move mountains.**

Conflict of Interest.

None. ■

Centre for Telepsychiatry, Region of Southern Denmark

The Centre for Telepsychiatry is an innovation and research centre within the Mental Health Services in the Region of Southern Denmark. The centre aims to

Digital transformation has started, but basic questions remain about how it will stay – in 2021 and onwards

they are used with some form of human support, e.g. in collaboration with a healthcare professional.

We anticipate that using digital therapies in the mental health field is more than likely to stay with us.

Moving Forward with Digital Mental Health

The 2020 pandemic has changed mindsets and paved the way for virtual care all over the world. And even though the sustainability of this transformation has not yet been evidenced, we do see a greater acceptance of the digital format in physical as well as mental healthcare.

The benefits of digital mental health are profound, but can only be achieved if digital tools are trusted and used by both patients and clinicians. For this to stick, we need data-safe and user-friendly digital solutions

ical equipment, a solid internet connection and the digital skills needed to use the services. So, on top of building the right digital health solutions and platforms in collaboration with the relevant users, we also have to focus on how to make these equally accessible and inclusive for all. For this reason, we are focusing our efforts on developing digital skills in both healthcare professionals and patients to prepare for a sustained use of digital solutions after the end of the pandemic.

To conclude: **Mental health affects us all.** There is no doubt that digital mental healthcare can make a valuable contribution to improving the lives of people who are experiencing mental illness, and in turn the people around them. For the digital mental health field to reach significant scale, however, **we see the future**

increase access to mental healthcare and improve health outcomes for people with mental health problems by co-designing and delivering digital interventions on regional, national and international levels.

EHTEL – the European eHealth stakeholder platform

EHTEL (the European Health Telematics Association) is a unique pan-European multidisciplinary stakeholder organisation, which brings together corporate, institutional and individual actors dedicated to the improvement of healthcare delivery through digital health. Recently, EHTEL has been strengthening its efforts in digital mental health as a focus area in its hybrid care workstream.



Upcoming Issue

Cover Story: Healthcare 4.6



COVID-19 has taught us that the healthcare business model needs to improve. In this issue, we envision what this model could look like. We discuss virtual care, digital health, artificial intelligence, machine learning, data analysis, data management, cybersecurity, blockchain, telemedicine, telecardiology, teleradiology, virtual training, virtual communication, social media, robotics, virtual reality, global interaction, transfer of knowledge, new and improved diagnostic tools, home-based care, skills, leadership and hospital management.

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