European Health Management Association

EHMA 2021 CONFERENCE REPORT

EHMA 2021

15-17 SEPTEMBER 2021

DIGITALLY THROUGH THE LENS OF

Lisbon, Portugal

About EHMA

The European Health Management Association (EHMA) is a non-profit membership organisation open to all those committed to improving health and healthcare. Active since 1982, EHMA is the only membership organisation in Europe bringing together health and hospital managers, healthcare professionals, researchers, educators, academia, policy and decision-makers.

EHMA's members play a crucial role in engaging with the full ecosystem of European health management systems. Our members and networks are a host of local, regional, national, and international actors. EHMA's pre-eminent annual conference helps our networks, and members to keep up to date, and contribute to health policy, training, research and development. EHMA provides members further platforms where evidence, challenge and experience are valued and complex debates on current topics can take place. EHMA maximises its impact by placing its membership at the heart of all that it does.

Located in the heart of Europe, EHMA's focus is on health management's capacity and capabilities and on supporting the successful implementation of health policy and practice, to make a real difference to the lives of Europe's population.

EHMA activities revolve around three key work streams:

- Membership-focused actions and network engagement;
- Research and EU-funded project work;
- Events and workshops, including the EHMA Annual Conference.

EHMA members have immediate access to a network of high-level contacts in service delivery, industry, policy, and research. Members can participate in, or set up, Special Interest Groups dedicated to different themes responding to current issues in health management. EHMA supports members to network, find project and research partners, and identify funded research opportunities. Additionally, EHMA members receive monthly newsletters on the latest updates in health management and can avail of discounted fees for EHMA events and workshops.

EHMA Membership is open to all organisations, and individuals, committed to improving health management in Europe and beyond. We welcome applications from universities with relevant courses in health; hospitals and healthcare service providers; associations of hospital managers; research centres; regional and national health policy agencies; and anyone else sharing our mission of spreading knowledge on effective health management.

⭐ Become a member by visiting https://ehma.org/join-us/, or contact laura.cande@ehma.org. ⭐

Alternatively contact EHMA on phone +32 (0)2 502 6525.

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About EHMA 2021

456 participants

14 abstracts sessions

75 abstracts presented

6 sub-themes

11 partner sessions

26 posters presented

4 plenary sessions

70+ renowned speakers

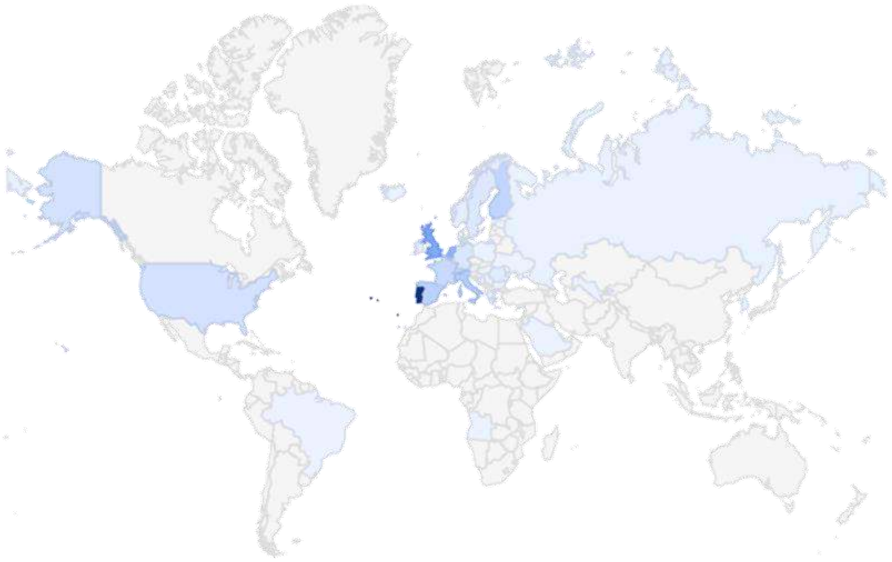
4 EHMA PIE sessions

Over the last year, health systems across Europe have encountered the most difficult times for a generation. Throughout the world, health services buckled under the strain of COVID-19, confronting enormous challenges around hospital capacity and workforce planning during a pandemic. As managers are pondering whether there will be a return to a 'new normal', important questions are asked about how to increase the resilience and readiness of health systems whilst also providing high-quality routine care catching up on the backlog of many months of missed operations.

The European Health Management Association (EHMA) Conference is the preeminent European conference on health management and the place for healthcare leaders to gather, learn from each other, share experiences, and debate current complex topics. EHMA 2021 was the 26th annual conference of EHMA. The Conference was held digitally through the lens of Lisbon, Portugal, in collaboration with the Associação Portuguesa de Administradores Hospitalares (APAH) and its academic partners, the Escola Nacional de Saúde Pública (ENSP) and the Universidade Nova: Nova School of Business and Economics.

The Conference welcomed the entire European health and care stakeholders: universities, researchers, healthcare professionals, hospitals, policymakers, and industry for three days of inspiring and challenging exchanges. It provided a platform to discuss the latest developments in governance and leadership; the lessons-learned from the COVID-19 pandemic; the best practices and challenges of the digital transformation; as well as provided practical solutions to implement integrated care, and create sustainable person-centered services. Attendees also shared the results of their research and ongoing projects, as well as their innovative and provocative ideas to address contemporary challenges or anticipate future challenges.

This report, prepared in collaboration with the EHMA 2021 rapporteurs, will take you through the discussions, speeches and presentations by health management and policy experts from Europe and beyond.



Editors

George Valiotis
Evelyn Donohoe
Laura Cande
Federica Margheri
Emmi Weller
European Health Management Association, Belgium

Rapporteurs

Terhi Auvinen
Department of Health and Social Management, University of Eastern Finland

Paulo Boto
National School of Public Health, Nova University, Portugal

Gabriele del Castillio
Department of Biomedical Sciences for Health, University of Milan, Italy

Simon Dello
Leuven Institute for Healthcare Policy, Katholieke Universiteit Leuven, Belgium

João Frutuoso
Hospital Vila Franca de Xira, Portugal

Anna Kafkoula
Erasmus School of Health Policy and Management, Erasmus University Rotterdam, The Netherlands
Patrícia Nobre Lopes Lourenço Soares
NOVA Health, NOVA University, Portugal

Sandra Pais Gabriel
Nova School of Business & Economics, Portugal

Julian Perelman
National School of Public Health, NOVA University, Portugal

Kasia Skoczek
Department Nursing and Health, University of Applied Science Fulda, Germany

Patricia Vella Bonanno
Department of Health Systems Management and Leadership, University of Malta

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This report was drafted thanks to contribution of the EHMA 2021 Rapporteurs. The summaries contained herein do not represent the official views of EHMA. Contents and views do not necessarily reflect the position of any other agency, organisation, individual, employer or company.

For any questions, correction, or additional information, please contact evelyn.donohoe@ehma.org

European Health Management Association

PLENARY SESSIONS

Opening ceremony – Health management: managing the present and shaping the future

Speakers: **Dr Josep Figueras** (Director, European Observatory on Health Systems and Policies); **Prof José Fragata** (Vice-Rector, Universidade NOVA de Lisboa); **Dr Axel Kaehne** (President, EHMA and Reader, Edge Hill University); **Ms Carmen Laplaza Santos** (Head of Unit – Health Innovations & Ecosystems, DG RTD, European Commission)

Moderator: **Dr Alexandre Lourenço** (President, Associação Portuguesa de Administradores Hospitalares - APAH and Master of Ceremonies of EHMA 2021)

Summary

Dr Alexandre Lourenço opened the EHMA 2021 Annual Conference presenting the institutional greetings and introducing the conference co-hosts: the Associação Portuguesa de Administradores Hospitalares (APAH), the Escola Nacional de Saude Publica – Universidade Nova de Lisboa, and Nova School of Business and Economics.

Dr Axel Kaehne welcomed all delegates on behalf of EHMA and explained that EHMA is a community of practice and stressed the importance for participants to make the most of the opportunity to translate knowledge into practice, and openly explore with others how health systems of the future can be shaped. Dr Kaehne thanked the partners from Portugal for their great work in organising the conference alongside the EHMA Secretariat, in addition to thanking sponsors for their support and generosity.

Prof José Fragata introduced the theme of the conference. To repair the breaches opened globally in healthcare systems by the COVID-19 pandemic addressing each of the conference themes – healthcare outcomes, sustainability, health workforce, digital transformation, patient-centeredness, and leadership and governance – is essential. Critical to shaping the future of healthcare and driving future reforms are the following concepts:

1. Resilience for the systems to anticipate, absorb, recover, and adapt to threats.
2. Quality that reduces waste and promotes patients and stakeholders' satisfaction. Quality creates value by providing the right health outcomes, as perceived by patients, at affordable and sustainable costs.
3. From human to digital interactions. Patients should be at the centre and digital tools should connect and serve patients and professionals without losing sight of the social and human element of medicine.
4. Management, governance and leadership. Healthcare management needs to embrace managers and clinicians as only true representation of the workforce diversity; only through this mutual trust and interplay integrated management will be effective.
5. Transformational leadership is best suited for healthcare reform as it can empower each staff member and implement changes locally; it helps innovate, thus shaping sustainable, resilient, more digitalised, and more human health systems. Healthcare reform requires top quality management and managers.

Ms Carmen Laplaza Santos discussed the important role of research, innovation and development, and of working together to strengthen health systems, especially after the COVID continued impact. Research and Innovation can contribute to making healthcare systems more accessible, more patient-centred, and sustainable. However, research and innovations will never benefit people if innovations are not translated and implemented into practice. Ms Santos explained that the main differentiation of the new Horizon Programme is in research and innovation, on which the Commission has placed a significant emphasis on achieving impact. To ensure impact is achieved, working together with decision-makers who have the power to uptake innovations is essential. Working together includes patients, healthcare professionals and healthcare authorities.

While healthcare systems have faced enormous pressure in the past year, these pressures were not new, but pre-existing. Challenges such as fiscal sustainability, changes in healthcare demand, and health workforce resources are the reason why the Horizon Europe Cluster 1 is one of the six priorities targets in health system transformation. Ms Santos provided an overview of how this cluster will create a pipeline from research to implementation to ensure health systems sustainability. The work programme published by the Commission in June 2021 includes topics to enhance systems' resilience, financing, innovation procurement and transformation to facilitate workforce strengthening, and the acceleration of knowledge and innovation transfers. Ms Santos concluded by providing an overview of European Commission initiatives for collaboration between Directorates-General to align framework programmes and build synergies to support innovation uptake in healthcare.

Dr Josep Figueras challenged participants asking: How will the future be shaped? What will the new normal resemble? And how can resilience and readiness be increased? The European Commission and the WHO Observatory have a COVID health systems response monitoring platform, which assesses and monitors the response of EU Member States to COVID. Healthcare systems resilience obtained increased prioritisation during the pandemic. However, the pandemic was one of the many shocks to health systems in recent years which exposed the inherent weaknesses in health systems. Structural and chronic problems have simply been highlighted by COVID. The WHO has presented 20 main strategies to strengthen resilience, of which, ten revolve around governance and the capacity to govern health systems. The first and most important one is effective political leadership, which is fundamental to health systems capacity to respond to shocks. The other strategies are well known: a good plan; good and flexible legislations; the ability to transfer knowledge and evidence into practice; communication skills, including transparency. Another important strategy is coordination, where many lessons have been learnt regarding horizontal, vertical, national, regional, district, and international coordination. The most important lessons coming from coordination concerned transparency, accountability, and priority alignment.

Dr Figueras provided an overview of the Pan-European Commission on Health and Sustainable Development. Health is a public good, is key to security, and is key to the economy. Organisations need to finance and support health activities. Transformations in health systems, including primary care; in the health workforce; in public procurement took place at breakneck pace during the pandemic compared to the slow pace of changes occurring prior to the start of this health crisis. During the last year and a half health in all policies and local and international partnerships have flourished. Dr Figueras stressed the need to act, to learn from the pandemic and to not let a good crisis go to waste. COVID-19 provides a unique political window of opportunity, but already some countries are returning to ‘business as usual’. Dr Figueras concluded that healthcare systems are at cross-roads: the time to leverage implementation of timely and useful transformation is now. It is essential to obtain and lobby for political commitment to take advantage of the crisis, including changes at an international level. Dr Figueras pushed for global approaches for public health and for support for the new public health agencies proposed by the European Commission.

Recommendations

- Healthcare reform needs top quality management and managers, and transformational leadership is the best suited approach as it can empower each staff member and implement changes locally.
- Patients should be at the centre of all initiatives. Digital tools can connect and serve both patients and healthcare professionals, but medicine should not lose sight of the social and human element in favour of digitalisation.
- Research, knowledge and innovations should be translated into practice for the benefit of society. The uptake of innovations is essential to ensure impact and collaboration is key to achieve this goal. Decision-makers, health authorities, healthcare professionals and patients should be working together to ensure innovations are translated into practice.
- The time to act for healthcare reform is now. The healthcare community should leverage the window of opportunity created by COVID-19 to increase political will, commitment and investments towards the health sector.

Take Home Messages

- Shaping the future of healthcare and driving future reforms depends on ensuring the resilience of health systems; quality that reduces waste and promotes patients’ satisfaction; the best use of digital tools without losing sight of the human element of medicine; and appropriate management, governance and leadership.
- Research and innovations should be translated and implemented into practice to benefit citizens. Significant emphasis is to be put on achieving impact and that is possible only through collaboration among all stakeholders.
- The COVID-19 pandemic was one of many shocks to health systems and exposed the inherent weaknesses. Structural and chronic problems have not been created by COVID-19, but they have simply been highlighted.
- Resilience can be achieved through different strategies. The most important is effective political leadership, immediately followed by coordination (local, regional, national and international). Other strategies include flexible legislation; the ability to transfer knowledge and evidence into practice; and communication skills, including transparency.
- COVID-19 created a window of opportunity for transformation that should not go to waste. Transformation needs to be timely and putting health at the centre of all policies should be a priority achieved through local and international partnerships.

Shaping health systems for a post-COVID world

Speakers: **Dr Hans Kluge** (Regional Director for Europe, World Health Organization); **Prof Maurizio Cecconi** (President, European Society of Intensive Care Medicine); **Dr Adelina Comas-Herrera** (Assistant Professorial Research Fellow, Care Policy and Evaluation Centre, London School of Economics); **Dr Ellen Kuhlmann** (President, EUPHA section on Health Workforce Research and Senior Researcher, Hannover Medical School)

Moderator: **Dr Alexandre Lourenço** (President, Associação Portuguesa de Administradores Hospitalares - APAH and Master of Ceremonies of EHMA 2021)

Summary

Dr Hans Kluge started the session by stating that COVID-19 brought both great challenges and unique opportunities. The Pan-European Commission on Health and Sustainable Development called for the urgent reform of healthcare and provided actionable recommendations on investments and reforms to improve the resilience of health and social care systems. The term 'resilience' is as a key feature of the health systems of today and tomorrow. The key characteristic of a resilient system is its ability to transcend itself after a shock and unceasing evolution. The WHO identified, prioritised, and actively supports two main initiatives to support health systems resilience:

1. The first priority is to place primary healthcare at the centre. COVID-19 revealed the true potential of primary care, which was pivotal in supporting the pandemic response. Surveillance, tracing, testing, and managing patients with asymptomatic or mild COVID-19 infection dramatically increased workloads and responsibilities promoting the need for transformation in primary care. The Alma-Ata declaration in 1978 and the Astana declaration in 2018 advocated unequivocally for primary healthcare to be the backbone of health care system. The pandemic underpins the need to prioritise this.
2. The second priority is to overcome the artificial divide between health and social care. Mental health conditions have exacerbated elevating changes in demand and service delivery. Supporting the integration of services and increasing the interoperability of systems is of primary importance. This will ensure patients can avail of a seamless continuum of care while reducing the likelihood of exposure to potential vulnerabilities and adverse outcomes. Glaringly absent from many preparedness plans is the need to recognise and account for social disparities. Health systems must be 'built back better', but with a primary focus on 'build back fairer'. Ensuring protection of the most vulnerable must address the root causes and act on both social and economic determinants of health. A multisector health protection and promotion approach is central to pandemic responses in every health system.

In the initial phase of the pandemic, acute care hospitals had a prominent role in the management of the global pandemic, advised Prof Maurizio Cecconi. For the first time, the public got a unique insight into hospitals' operations. Intensivists and healthcare staff were faced with unprecedented challenges. Healthcare professionals realised that they could not overcome the pandemic alone: they depended on public health measures and the community actions and behaviours. After overcoming the challenge of PPE and ventilator procurement, the workforce crisis became prominent. Human capital cannot be procured ad-hoc. During COVID-19 surges, contradictions within became apparent: ICU staff were overwhelmed, while non-ICU staff workload decreased significantly. Thus, a large group of available, non-ICU skilled workers were ready to support ICU teams. The European Union, together with the European Society of Intensive Care Medicine, created the COVID-19 Skill Preparation Course (C19-SPACE). This course provided high-quality training on intensive care medical skills to health professionals not regularly working in intensive care units. This course was the largest ever training program for healthcare workers upskilling more 20,000 healthcare workers.

Dr Adelina Comas-Herrera stated that, from the beginning of the pandemic, the repercussions for people receiving long-term care were not thoroughly, adequately, or promptly assessed. Few countries created pandemic preparedness plans with strategies minimising risks for a frail population. Nursing homes and residential facilities were regularly identified as a convenient destination supporting rapid discharge of COVID-19 patients. This adversely impacted the quality of care delivered as nursing homes across Europe confronted limited access to vital resources. Human resources were redirected to acute care hospitals further aggravating the precarious situation in care homes. In reaction to these problems, health surveillance and monitoring systems were developed, while innovations rapidly emerged. The European Centre for Disease and Prevention Control played a crucial role and contribution to the development of these systems. Such measures prevented deaths of many care home residents during the second and third COVID-19 waves.

Dr Comas-Herrera highlighted the importance to prioritise policies, regulations, and financial structures to improve continuity of care by applying available tools to analyse and improve health systems to long-term care settings. Long-term care facilities suffer from structural underfinancing contributing to insufficient human resources, unsafe, costly care and unattractive work environments. Long terms care needs can only be accommodated by integrating long-term care delivery with universal health coverage, while focussing on reducing fragmentation and increasing coordination. This cost-effective strategy, requiring 1-2% of GDP, would be relatively inexpensive compared to current total healthcare spending.

Healthcare workers are at the heart of every healthcare system and the most valuable, but often undervalued resource, said Dr Ellen Kuhlmann. Many healthcare workers died during the pandemic due to poor governance, policy and management. The burden and responsibility to protect the wellbeing of the healthcare workforce is borne by healthcare leaders and policymakers. Four major lessons to be learnt from COVID-19 have one underlying element in common: the need to look at the 'person' behind every healthcare worker.

Firstly, a cultural shift in health policies valuing healthcare workers true potential needs to take place. Second, respect and opportunities for women must be prioritised, as the pandemic further aggravated pre-existing gender inequalities. Third, the unethical recruitment of migrant healthcare workers must be halted, and their integration improved. This group was frequently forgotten during the pandemic, even if long-term care workforce largely comprises migrants. Lastly, managers and policymakers must check what can be implemented at an organisational level to protect the workforce. Vaccination of staff has proven to be an effective measure. Managers and policymakers should take responsibility to identify healthcare workers' needs. Effective and supportive strategies to support workers wellbeing and health should be jointly developed.

Fragmentation within health systems, but also in social services, is observed across Europe. The COVID-19 pandemic provides a unique window of opportunity and policymakers must seize the moment. Policymakers' actions need to focus on initiating policies to better protect health systems from future exogenous shocks while allowing for sufficient levels of flexibility. The biggest investments need to be targeted towards systems that support monitoring and prevention and protect health systems from being overwhelmed. In the design of such policies, attention towards the healthcare workforce needs to be structurally embedded. A high-level commission at a European level, protecting the interest of healthcare workers across all healthcare settings and focused on networking, needs to be created. The adequate management of the healthcare workforce as a human resource is more important than ever. This should be prioritised by policymakers when thinking about resilient health systems. Social disparities became more apparent during the COVID-19 pandemic and need to be absorbed by focussing on not only building back better but building back fairer. A major takeaway from this pandemic is to structurally change how healthcare systems are financed globally. Prevention is being put forward as the most important element to embed in future policies. The current financial organisation of healthcare systems is not aligned with this objective, merely focusing on activities. Financial incentives need to be directed towards supporting actions that increase workability, focus on prevention, and allow for spare capacity in human resources in health systems. This is the only way to support the development of health systems that are both resilient and sustainable.

Recommendations

- Post-COVID-19 health systems must recognise and account for social disparities and tackle this issue by supporting the integration of services. Health systems must not just 'build back better', but 'build back fairer'. To ensure the protection of the most vulnerable, the root causes must be addressed, as well as both the social and economic determinants of health.
- Policymakers need to prioritise the development, re-organisation and optimisation of care systems and regulatory bodies to accommodate long-term care needs by integrating the delivery of long-term care in universal health coverage while focussing on increasing coordination and reducing fragmentation.
- Attention to the healthcare workforce must be integrated by default when developing new legislation to support recovery and resilience of health systems. Preventive strategies to support the healthcare workforce must be prioritised, and financial incentives need to be aligned with these preventive measures. Additionally, policymakers need to develop strategies to address gender inequality and migration in the healthcare workforce.

Take Home Messages

- The silver lining of the COVID-19 pandemic has created a unique window of opportunity on which policymakers worldwide need to act.
- The World Health Organization identified two main initiatives to support health systems resilience: the first is to place primary healthcare at the heart of health systems; the second is to overcome the artificial divide between health and social care.
- Investing in human resources should be prioritised and is essential to safeguard mental health, increase psychological safety, improve teamwork and prevent burnout in the healthcare workforce.
- In the development and recovery towards resilient health systems, primary healthcare - in all its aspects – should be placed at the centre due to its pivotal role.

Leadership for the future of healthcare

Speakers: **Ms Izabela Grape** (Representative, Breast Cancer Society Amazona); **Dr Melitta Jakab** (Head of Office, WHO European Centre for Primary Health Care); **Ms Annamaria Müller** (President of the Board of Directors, HFR hôpital fribourgeois); **Dr Marius Ungureanu** (Programme Director, Babeș-Bolyai University); **Dr Björn Zoëga** (CEO, Karolinska University Hospital)

Moderator: **Dr Alexandre Lourenço** (President, Associação Portuguesa de Administradores Hospitalares - APAH and Master of Ceremonies of EHMA 2021)

Summary

Ms Izabela Grape shared her experience of living through two cancer diagnoses and relating how relevant it is to tailor treatments to the individual. Ms Grape described how patients want to be more included in the treatment process and be listened to by doctors. Digital tools can complement non-virtual meetings and enhance patient care. Digitisation is not the solution to all challenges, as patients need real-life meetings with their professional team. The availability of 24/7 information creates a new dimension for health professionals, but health systems are falling behind as technology provides improved diagnosis and prognosis. Professionals need to educate patients who will educate themselves if health literacy is not provided. This is the strength of patients and patient organisations. Therefore, there is a necessity to include and involve patients and patients' organisations in a dialogue and discussions concerning health system transformations.

Primary healthcare is entering an exciting decade to strengthen its role. Dr Melitta Jakab described the future of primary care as more multidisciplinary with better integration and multiplatform; personalisation will increase; and services will be tailored to patient and community needs. Non-clinical skills will be equally important as state-of-the-art clinical skills. For leadership, complexity in leading and managing will increase to assure that the right services are delivered. Considering the complexity of the challenge ahead, Dr Jakab outlined that leadership in primary healthcare must change in the following ways:

1. Transition to distributive leadership, sharing authority and power from the frontline and empowering from bottom-up to build policies and manage complex multidisciplinary teams.
2. Capture innovation at the facility level including the soft, non-clinical skills, necessary to respond more effectively to patients.
3. Good leaders must be good managers. Primary care will become more complex; thus, managers will require tailored health management programs for complex, multi-disciplinary, multi-platform primary healthcare.
4. Leadership must lead towards partnership across different sectors, removing silos, including patients' organisations, mental health, and social services.

At the hospital level, Dr Björn Zoëga argued that cutting-edge technology, advanced specialisation, and collaboration are needed for the future of healthcare. Karolinska University Hospital is one of the largest hospitals in Europe and began transforming prior to COVID-19. Dr Zoega presented the challenges that Karolinska Hospital had in 2018 and 2019. COVID-19 accelerated changes being implemented in the hospital. Changes included increased ICU capacity, increased hospital beds and heart surgeries, and reduced manager numbers. Reforms resulted in shorter care queues, doubled heart surgery survival rates, stability in finances and contributed to the over delivery of agreed healthcare assignments. The completed rate of healthcare assignments is projected to reach 205% by 2021 end. Improvements and transformations were achieved by simplifying and reducing administration. Operational emphasis on data allowed the hospital to adjust to new demands with no negative impact on patient care. Leadership in Karolinska's operations transitioned to bottom-up and staff empowerment with emphasis on objectivity and data-derived evidence. Collaborative and interdisciplinary work between clinics was another key feature of adjustments that were implemented.

Dr Marius Ungureanu presented how COVID-19 provided proof of the challenges facing health systems and what lessons need to be learned for improvement. Paradoxically, he said, the future health systems we would like to see may not be the health systems of the future. External disruptors may arise influencing the course of predictable healthcare systems. During the pandemic, courses of action changed in a sector that is generally reluctant and resistant to change. From the Romanian experience, a mayor arranged for a shared purchasing hospital initiative for services and material for COVID-19 treatment. This initiative has been transformed into legislation that will evaluate which lessons learned at the local level can be implemented country wide. The question that emerges, said Dr Ungureanu, is what knowledge can be conveyed to students entering healthcare professions to improve the future of healthcare. Future health systems depend on people. Resilient systems are made by resilient leaders and are important for health system progress. Investment in the future of health systems is an investment in the health workforce of the future.

Ms Annamaria Müller presented the experience of the Fribourg Hospital group in Switzerland. As patients can attend any hospital and are not obliged to attend specific facilities, competition is high. Like other hospitals in high-income countries, Fribourg Hospital faces resource challenges. Considering these challenges and competition, the group remodelled its provision becoming a healthcare provider and participant in a network of healthcare providers. Ms Müller described how the experience of witnessing a close relative's care between numerous professionals, institutions, and specialties at the end of his life inspired these changes. As we age, healthcare delivery becomes more complex and less patient-centred - argued Ms Müller - as more organisations and professionals become involved in care delivery, increasing silos. Ms Müller outlined how the hospital group facilitated cross-agency discussions to design tailored-made, integrated, care focusing on patient participation in treatment decision making. Challenges to implementing this model, such as embedded styles of care delivery, professionals' attitudes, and concerns of unnecessary additional workload, exist. Yet, while different trajectories and silos exist, patients' outcomes will not progress. The future for leadership will involve the introduction of soft skills to fully implement an integrated, person-centred, healthcare system. Finally, leaders need to value what health care professionals do and encourage professionals to work together.

This session presented views from Northern, Eastern, and Western Europe who argued the importance of ensuring that quality improvement in healthcare is sustainable and patient centred. Managers and leaders' complex roles can be made easier with the employment of soft skills. Patients must be provided a greater voice in their treatment plans and be involved in decision making. A final reminder is that sometimes, patients know best, not always the doctors.

Recommendations

- Quality improvement in healthcare should be sustainable and patient centred. Participatory processes should be developed, enabling tailored treatments for patients, and facilitating joint decision-making between patients and doctors.
- Primary healthcare should transition to distributive leadership; capture innovation at the facility level to respond more effectively to patients; have good leaders able to manage complex programs; and develop partnerships across sectors.
- Health organisations should design tailored-made, integrated care focusing on patient participation in treatment decision making.

Take Home Messages

- Patients want to be more included in the treatment process. Healthcare professionals should work to provide patients with relevant health literacy and collaborate and discuss with them and patients' organisations on any health system transformations.
- Digital tools can enhance patient care. They provide a 24/7 availability of information, as well as improved diagnosis and prognosis. Health technology has created a new dimension for health professionals, but patients continue to need direct contact with their care providers.
- Future health systems depend on people and resilient systems depend on resilient leaders. Investing in the future of health systems requires investing in the health workforce of the future.
- Healthcare delivery becomes more complex and less patient-centred with the age of the patient, as more professionals become involved in care delivery, increasing silos.
- The future for healthcare leadership involves the introduction of soft skills to fully implement an integrated, person-centred, healthcare system.

Digital transformation in healthcare: digital technology as a management tool

Speakers: **Dr Ceri Thompson** (Deputy Head of Unit 'eHealth, Well-being, and Ageing', DG CONNECT, European Commission); **Mr Clayton Hamilton** (Coordinator, Digital Health Flagship, Division of Country Health Policies and Systems, WHO Europe); **Prof Rosanna Tarricone** (Associate Dean, SDA Bocconi School of Management)

Moderator: **Dr Alexandre Lourenço** (President, Associação Portuguesa de Administradores Hospitalares - APAH and Master of Ceremonies of EHMA 2021)

Summary

This session was dedicated to discussing the role of digital technology in healthcare. Digital health is not only employed to support the provision of essential care services; rather, it should be used as a management tool that can impact both healthcare centres and the wellbeing of health professionals.

Dr Ceri Thompson provided an overview of the actions taken by the European Commission (EC) to support the use of digital tools. She presented three major objectives for digital transformation: firstly, give citizens better access to their health data; secondly, use of digital tools for citizens' empowerment and person-centred care; thirdly, connect and share health data for research, faster diagnosis and better health outcomes. The EC is working towards the EU Data Strategy Framework consisting of 4 pillars: a cross-sectoral governance framework for secure data access and use; investments in infrastructure; digital competences; and the rollout of a common European data spaces. Dr Thompson mentioned the various EU actions towards the European Health Data Space. Part of this concept includes the legislative aspect, ensuring the right rules are in place; quality of data and, specifically, the technical standards for sharing; another aspect is the infrastructure; finally capacity building and digital skills. In conclusion, Dr Thompson outlined the various investments, funding instruments and programs of the European Union towards the EU Health Data Space. This includes the EU4Health program; Invest EU; Horizon Europe; the Digital Europe Program; and the Recovery and Resilience Facility - 600 billion euro of which 20% is dedicated to digitalisation and around 50 billion will be directed to health.

Mr Clayton Hamilton highlighted one of the four priorities of the WHO: empowerment through the digital health initiative aiming to support Member States in the European Region. The initiative complements existing activities from various countries and partner institutions by providing technical, policy guidance and expertise on the safety and efficacy of digital health solutions while preserving health equity, gender equality, equity and human rights as core values in their deployment. Mr Hamilton underlined the message of Dr Hans Kluge, the WHO Regional Director for Europe to "*Not only building back better but building back fairer*". Overall, the WHO priorities show how digital health can contribute to building up after COVID-19 and how the political priority of digital health has increased even before COVID-19 and accelerated due to the pandemic. There are three strategic objectives helping to bring forward the digitalisation of health systems: (1) moving towards Universal Health Coverage (UHC), which requires aligning digital technologies to this notion. (2) protecting against health emergencies, which requires to internalise the lessons learnt from COVID-19 to protect against health emergencies by adopting data and digital technologies to increase security within the European region. (3) promoting health and wellbeing which requires the adoption of digital technologies to move away from a more reactive paradigm of care to a more preventive one. During the pandemic, not everyone could access health technology and benefit from it, especially vulnerable groups. Additionally, the health workforce lacked digital tools, and false information and propaganda in the digital environment hindered the pandemic response plans. Using health data will help learn more about equity in health through having access to more health data; having the ability to stratify data to identify vulnerable populations in our societies; and identify investment areas to tackle vulnerabilities. Mr Hamilton said that "*if we are not careful, these technologies can risk marginalising the same people*". Therefore, there is a need for a combination of appropriate policies, legislation, training of individuals, and digital literacy of populations. The priority areas where digital transformation could be applied are in strengthening primary care; strengthening the health workforce's digital skills; digital mental health services for the public and the health workforce; and improve data governance. To overcome resistance in adopting digital tools, healthcare managers should focus on health data, work on standards adoption and cross-institutional boundaries, and explore how to make use of performance indicators

Prof Rosanna Tarricone focused on the benefits and opportunities of digital health technology and on the assessment of digital health solutions. While digital health, and especially digital apps, are very promising, there is not a comprehensive assessment system. Digital health technology can transform healthcare systems in a disruptive way and be a concrete solution to maintain systems financial sustainability and make savings in the care delivery process. From a managerial perspective the time has come to make the best out of digital health and respond to the needs of the system, companies, healthcare organisations, health professionals and patients. This includes the development and update of mobile medical applications; the development of classification and effectiveness requirements; monitoring performance and maintenance; testing usability and the measurement of additional outcome domains. In many cases, one obstacle is the resistance to change, but there are instruments that health managers can use to engage and incentivise professionals towards an increased use of eHealth tools. Specifically, several medical doctors appeared overwhelmed using health apps and think they will be expected to be available for patients 24/7. Regarding the workforce shortage and new health professions, Prof Tarricone mentioned the upcoming need of professionals with competencies in data science, computer science and cyber security, and that it is very likely these new professions can be a competitive advantage for countries and healthcare organisations.

Dr Thompson elaborated on what changes need to be made in the delivery of care to adopt digital health technologies. Digital tools could enable a new style of care that is more functional, cost-effective, and equitable. The way chronic conditions are managed will shift towards daily interactions through a digital device between the patient and the clinician. This system can be more cost effective and can avoid several incidents. Regarding relevant regulations, legislation is already in place and attempts are made to encourage the mHealth community to develop their codes of conduct around issues like data protection. Finally, to overcome the resistance in the adoption of mHealth technologies, Dr Thompson recommended that managers should lead the change, think how they can use indicators and what can be done to create incentives.

In this session the efforts of the EC and the WHO to adopt digital health technologies were presented. The increasing digitalisation of healthcare during the pandemic is an opportunity to expand such adoption. It is essential to learn from the pandemic and find ways to use digital tools while improving health systems. However, there are multiple obstacles in the process and healthcare managers are crucial in leading the change. This session highlighted the importance of using digital tools in healthcare in terms of the delivery and quality of care, but also as a management tool. Digital health technology can transform the way care is currently shaped and provide more effective and equitable care for everyone.

Recommendations

- Health data should be used to identify where vulnerabilities exist, so that investments can be appropriately targeted to tackle marginalisation and achieve more equitable healthcare.
- Digital health apps should be appropriately assessed in terms of performance and maintenance. Classification and effectiveness requirements should be developed, and usability tests and of outcome domains measurements should be conducted.
- Health managers should play a crucial role in leading the adoption of eHealth and mHealth technologies, using appropriate indicators and developing incentives for healthcare professionals.
- Healthcare managers can overcome the resistance in adopting digital tools focusing on health data; working on standards adoption and cross-institutional boundaries; and exploring how to make use of performance indicators.

Take Home Messages

- The European Union has a strong commitment towards the digitalisation of healthcare with a view to give citizens better access to their health data; to use digital tools for citizens' empowerment; and to connect and share health data for research, diagnosis and better health outcomes.
- The priority areas where digital transformation could be applied: strengthening primary care; strengthening the health workforce digital skills; digital mental health services for the public and the health workforce; and improve data governance.
- The EU Data Strategy Framework consists of 4 pillars: a cross-sectoral governance framework for data access and use ensuring that data is shared securely; enablers including investments in infrastructure; digital competences; and the rollout of a common European data space.
- The WHO is committed to support countries in the European region in their transition to digital health by providing technical, policy guidance and expertise on the safety and efficacy of digital health solutions while preserving health equity, gender equality, equity and human rights as core values in their deployment.
- Digital health technologies have great potential but can also lead to a further marginalisation of already vulnerable groups. There is a need for a combination of appropriate policies, legislation, training of individuals, and digital literacy of populations.
- Digital health technology can transform healthcare systems and be a concrete solution to maintain systems financially sustainable.
- New health professions will emerge following the rising use of digital technologies and will be a competitive advantage for counties and healthcare organisations.

PARTNER SESSIONS

Towards personalised medicine – An innovative diagnostic tool to identify cardiovascular complications in COVID-19 patients

Session organised by the COVIRNA project

Speakers: **Dr Yvan Devaux** (Head of the Cardiovascular Research Unit, Luxembourg Institute of Health); **Dr Kanita Karaduzovic-Hadziabdic** (Assistant Professor, International University of Sarajevo); **Dr Vincent Mooser** (Canada Excellence Research Chair in Genomic Medicine; Director, Québec COVID-19 Biobank; Professor, Department of Human Genetics, McGill University); **Mr Venkata Satagopam** (Deputy Head at Bioinformatics core, Luxembourg Centre For Systems Biomedicine, University of Luxembourg); **Dr Eric Schordan** (Chief Scientific Officer Biomarker R&D, Firalis Molecular Precision)

Moderator: **Ms Adriana Voicu** (COVIRNA Project Manager, Luxembourg Institute of Health)

Summary

This session examined the benefits of personalised disease management on health systems and discussed how patient-centred care and personalised medicine can improve disease outcome and enhance patients' quality of life. Cardiovascular complications arising from COVID-19 are known to contribute significantly to mortality rates and the COVIRNA project aims to improve individualised surveillance, care and follow-up of COVID-19 patients by identifying those who are at risk of developing fatal cardiovascular complications.

Dr Vincent Mooser presented the reasons why personalised care is critical for the management of COVID-19. There is a wide inter-individual variability in response to virus exposure: some patients are totally asymptomatic, while the virus can be deadly for others. Therefore, there is a need to identify individual-specific clinical and molecular signatures to direct patients to optimal care according to their risk, allowing targeted prevention and treatments. Dr Mooser referenced a current study, commissioned by the Quebec Provincial Government, to identify determinants of COVID-19 susceptibility, severity and outcomes to contribute to the pandemic response. It is a prospective study with serial measurement over 2 years, using extensive data and blood in 9 centres, affiliated to 5 universities. The study has a broad scope, from asymptomatic to severely ill patients divided in a case control where cases are SARS-CoV-2 PCR positive; and controls are SARS-CoV-2 PCR negative. The study also encourages international and national collaboration. The study characterised approximately 2 million variants along the genome, and for each variant, their position on the chromosomes. For each of the 2 million variants they estimated the probability that the variant is over or underrepresented in severely ill patients compared to patients without COVID-19. There is a move towards molecular signatures of severe COVID-19, including genetic markers, and a need for large-scale international collaborations, including thousands of properly consented and clinically investigated participants. But there is also a need for extensive, high quality, multilayer molecular data, including transcriptomics. The latter is where the COVIRNA project can contribute.

Dr Yvan Devaux presented the main goal of the COVIRNA project, which is to develop a diagnostic test to improve surveillance and care of COVID-19 patients. The project is funded by Horizon 2020 following an emergency call launched by the European Commission in March 2020. The consortium has a multidisciplinary team including 15 partners from 12 EU countries, with contributors from diverse expertise fields. In the context of the COVID-19 pandemic, it is difficult, if not impossible, to predict whether a patient is going to develop poor outcomes or will recover after being infected with SARS-COV-2. Hence, there is a real need to identify predictors of outcome. Genetic modification or mutations are associated with patient outcomes and can be used to predict the patient's risk of developing a severe disease. The solution proposed by COVIRNA was to develop cost effective molecular diagnostic kits, based on RNA molecules, to predict or identify this risk shortly after infection. The kits are simple, minimally invasive, based on rapid blood tests and on the FIMICS panel of cardiac enriched long noncoding RNAs (lncRNAs), which will be used in hospitals and laboratories.

The project will enrol 1,500 COVID-19 patients and 500 control patients from several European cohorts. Blood samples will be processed and will measure the 3,233 cardiac-enriched IncRNAs of the FIMICS panel, which will then be integrated in a central database that will also include clinical data. Data will be analysed using artificial intelligence, allowing the selection of a sub-set of IncRNAs that are best outcome predictors. All the data will then be entered into the COVIRNA IVD diagnostic test which will constitute the COVID-19 progression prediction model. The test is expected to be clinically available to develop early prognosis, identifying patients at high risk of developing adverse effects, and it will also allow physicians to adapt the management and the advice given to patients. The COVIRNA team also aims to investigate the functional association between IncRNAs and clinical outcomes to identify the opportunities to translate the project to other diseases. The project is expected to have three types of impacts:

1. On health care providers by improving patient triage, management, treatments and follow-up. It will be important to identify patients that need close follow up and patients that can be discharged, freeing beds for patients at risk.

2. On patients by improving their clinical outcomes, quality of life and decreasing mortality rate. This project will look at patients with pre-existing conditions as more vulnerable to infection with SARS-COV-2 and presenting higher morbidity and mortality rates.
3. On society at large by reducing the societal and economic burden of COVID-19 and helping the scientific community.

Dr Venkata Satagopam focused on the challenges for sharing data across health institutions in the context of the COVIRNA project, as his team collects clinical and RNA data for standardisation, curation and integration, and prepares the data for analysis and sharing with consortium members. The common challenges in data sharing are motivational - there are insufficient efforts to prepare data and metadata for sharing, and economic - there are insufficient economic benefits. Additional challenges are legal and ethical due to the absence of a legal framework and unclear roles and responsibilities on data usage. This may include poorly defined patient informed consent at the time of recruitment, which can lead to restricted data usage. The absence of a common legal framework in place between data providers and data consumers is also a barrier together with lengthy ethical approvals and execution of the data sharing. Finally, insufficient technical skills to prepare the data for sharing and for data transfer are other challenges. Some data providers do not have sufficient skills to properly anonymise sensitive data, extract required variables, or to ensure secure data transferring.

The COVIRNA data sharing approach include both data processing and data sharing agreements. Data owners and users are both covered by agreements. The data is encrypted, simultaneously collecting and recording GDPR centric metadata into a central Information System, ensuring that all meta data is in one single place. Data is then curated and harmonised using the standard ontologies and terminologies and using the World Health Organisation COVID-19 Case Report Form (CRF) standard. Then this clinical data is integrated with molecular data and made available to data users through strict access control.

Dr Eric Schordan talked about the benefits of personal disease management and how health providers can adopt a new diagnostic tool. One of the innovations of the COVIRNA project is non-protein coding long RNAs to identify a new pool of biomarkers which are highly tissue specific. Researchers discovered cardiac enriched IncRNAs and identified from biopsy the ones that are overexpressed in the heart. To overcome issues of using a biopsy, a new test, the FIMICS product, was developed. The COVIRNA project aims to test cohorts (2,000 patients) with the FIMICS kit to predict good and bad outcomes for patients and COVID-19 severity, especially in patients that suffered from cardiovascular events. Even though this innovation is easy to perform, rapid and will help predict many factors, the transfer to clinic is a complex protocol that requires a platform sequencing. Therefore, to translate into precision medicine, the IncRNAs signature is to be translated from FIMICS to qPCR assays. Once the qPCR assay is developed and validated, the project will be able to launch CE marking and production. The COVIRNA CE-IVD kit will be applicable to patients at the hospital, as it allows independent clinical validation with an easy-to-use protocol, taking less than 24 hours to provide a result. It will also be accessible as all laboratories are equipped with different PCR devices.

Dr Kanita Karaduzovic-Hadziabdic focused on assessing data and using AI to develop predictive models within the COVIRNA project. The main objectives of this work are to classify COVID-19 patients and develop a model that can efficiently predict mortality and major adverse cardiovascular events and disease severity at an early stage of the disease. Machine learning is a sub-discipline of Artificial Intelligence. Machine learning algorithms are trained to iteratively learn from the data, so the gained knowledge can be used to make predictions and diagnose the disease. The machine learning workflow for developing a predictive model includes the following steps: i. Data collection (transcriptomic and clinical data); ii. data pre-processing (cleaning, formatting, normalising, etc.); iii. data split into training, validation, and test data; iv. feature selection - it highly affects the overall performance results of the final model. The aim of this step is to reduce the number of features and select only those that are most useful for the desired outcome; v. model development - select an appropriate machine learning model, optimise the parameters, perform evaluation of the model; vi. final model selection and evaluation on test data.

The data collected by COVIRNA will be harmonised and consolidated, and then developed into a IncRNA signature biomarker performing exploratory analysis to establish which IncRNAs correlate with disease severity and mortality. Because IncRNAs are highly co-expressed, they will fit a multivariable model to link IncRNAs as predictors to mortality and severity, using a Bayesian variable selection. This will allow to identify a short list of prioritised, non-redundant and informative IncRNAs. The results will then be used in the follow up analysis, using the advanced machine learning algorithms to build biomarker classifier and the final predictive model for disease severity and disease mortality in COVID-19 patients, and perform feature importance to identify the most important predictors to be used in follow up work packages.

Recommendations

- Broaden informed consent forms, covering all activities and secondary usage of the data.
- Consult the data protection officer early in the process.
- Define clear data access policies.

- Execute data processing and sharing user agreements as early as possible.
- Provide training on GDPR and data stewardship, including national implementations, responsibilities of data professionals, and handling of sensitive data.
- Rely on collaborators with technical skills to handle the data.

Take Home Messages

- There is a wide inter-individual variability in response to COVID-19 exposure. Predictive models are important to identify cardiovascular complications in COVID-19 patients and improve patients ’outcomes.
- Predictive models allow identification of individual clinical and molecular signatures and direct patients to optimal care according to their risk, allowing targeted prevention and treatments, therefore increasing patients’ outcomes.
- Molecular signatures of severe COVID-19, including genetic markers, are key to identify and predict patients’ risk of developing severe disease.
- International collaboration is important to pool more information and develop more accurate models.
- Data is fundamental to develop this type of diagnostic tools, hence the importance of having good data processes, including clear and broad patient consents and clear legal and ethical frameworks for data collection, treatment and sharing.

Harnessing the experience of the COVID-19 pandemic to enable and accelerate the digital health transformation

Session organised by the European Observatory on Health Systems and Policies

Speakers: **Prof Fidella Cascini** (Assistant Professor, Department of Hygiene and Public Health, Università Cattolica del Sacro Cuore); **Dr Vesa Jormanainen** (Finnish Institute of Health and Welfare); **Dr Florian Tille** (Technical Officer, European Observatory on Health Systems and Policies); **Dr Gemma Williams** (Research Fellow, European Observatory on Health Systems and Policies)

Moderator: **Dr Dimitra Panteli** (Programme Manager, European Observatory on Health Systems and Policies)

Summary

Digital health has been identified as a means to improve access to good quality healthcare, but its implementation has been slow in many European countries. Its potential is not being fully realised, although digital health could improve person-centred healthcare and help build more resilient health systems. The COVID-19 pandemic has brought rapid changes in this area and many solutions have been successfully implemented in this context, either to respond directly to the public health emergency or to facilitate the provision of (essential) health services in other areas of care. But policies and actual implementation across countries in the European region were not always coherent, leaving space for improvement through cross-country learning and better collaboration. The COVID-19 pandemic can be an opportunity for digital health to spread widely across Europe, eventually changing the provision of health care permanently. This session meant to i) provide a framework for understanding digital health within the general context of innovation, ii) highlight the main areas of activity during the COVID-19 pandemic across European countries as well as barriers and facilitators for its uptake before and during the pandemic, and iii) highlight the main tenets of the World Health Organization's global digital health strategy.

Dr Gemma Williams discussed the use of digital health tools in Europe, before, during and after COVID-19. Her presentation follows the release of a new policy brief on the topic by the European Observatory on Health Systems and Policies (available here). Digital health can be defined as "the use of digital technologies to improve health" and include areas of eHealth, mHealth, and big data, and several tools in each of these areas, such as electronic health records, e-prescription, and telehealth. There are policy mechanisms to incentivise (and/or disincentivise) digital health adoption that can be grouped into four main areas: regulation, financial, quality, and technical. The onset of the COVID 19 pandemic in 2020 turned the implementation of digital health tools from an opportunity to a necessity. Dr Williams shared a compilation of examples of the use of these tools for i) communication and information, ii) monitoring and surveillance, iii) the support of the provision of services, and iv) vaccination, immunity, and pharmacovigilance (based on data gathered through the Observatory's COVID-19 Health System Response Monitor, available here). Dr Williams also discussed the use of AI and data. Data must be of good quality for algorithms to work and sharing patient data must comply with the General Data Protection Regulation (GDPR) and with national regulations. Concerns and restrictions should differentiate commercial from non-commercial uses, with different access, and the right incentives and disincentives.

Prof Fidella Cascini presented the Italian experience on harnessing the COVID-19 pandemic to enable and accelerate digital health transformation. In the year and a half since the pandemic started, Italy saw a rapid growth in the use of digital health tools such as electronic health records (EHR) and in the digital reporting of lab results. In some regions, most general practitioners accessed EHR, although 'feeding' the EHRs was less common. The use of EHR is more prevalent in healthcare organisations in general, and this includes inserting data onto them. In many health regions, large percentages of the population access their records and contribute with information too. Patients used the digital tools mostly to download clinical documents, to book healthcare services online and to pay for care. Due to the pandemic, this use increased by a factor of 2 to 4 according to an observatory based in Milan. Telemedicine was another tool used to ensure health system response, with the Ministry for Technological Innovation supporting the Ministry of Health. Again, large increases (3- to 6-fold) were seen in the number of tele-consultations, tele-visits and tele-monitoring, especially at primary care level. E-prescription and treatment plans also became more prevalent, using both e-mail, WhatsApp, and text messages. Currently under consideration is the use of artificial intelligence (AI) technology to improve care. A survey is underway to assess current use of different applications in clinical settings throughout the country. Two databases of chest images were given as examples, which contain images from hundreds of patients with the hope that they can then be used as the basis for AI algorithms to predict clinical outcomes. Still, there are concerns with clinical effectiveness and safety and national guidelines are thus necessary. Prof Cascini also highlighted the importance of digital health literacy as it will allow people to know more about digital tools and how to use them.

Dr Vesa Jormanainen highlighted how Finland is often in pole position in terms of using digital health tools, with a national comprehensive system based on wide interoperability. All public healthcare units are connected, as well as most private providers and community pharmacies. Finland also has a web-based system, with strong authentication protocols, like those used by banks, that was used by 60% of adults in 2020. He then described a COVID-19 symptom self-assessment web-based tool, Omaolo, that was developed very rapidly and has been running for 18 months; it is voluntary and monitors symptomatic patients and Emergency Departments referrals. The tool feeds a dashboard at the Finnish Institute of Health and Welfare (THL). This population-based approach allows for monitoring ahead of that provided by lab results. Infrastructure is essential, and that is why Finland was able to implement this tool in a week. Users reached 10,000 questionnaires per day, in a population of about 5,5M (signalling high levels of digital and digital health literacy). Similar systems can now be used for other purposes. In Finland, patients have been in the driver's seat for some years, as the country has opted for a centralised approach. There is legislation regarding the secondary use of data and a controller. There is also a huge data warehouse that healthcare professionals can access but patients give their informed consent and can restrict access. Digital transformation is a business built on trust.

Dr Florian Tille reported on the European Observatory on Health Systems and Policies' 2021 Summer School, devoted to reflecting on the future of digital health after the pandemic and "the opportunities arising from the COVID-19 experience". The participants discussed how digital health tools can provide information for policy and practice; how they can change the provision of care; and how they can also contribute to research and learning. The main findings from the Summer School were:

- The pandemic caused a surge in the use of digital health tools. Although countries performed differently, this impetus should be taken advantage of to maintain the trend after the pandemic is under control.
- These tools have been used with good results in both COVID-19 and other patients, but results are not always guaranteed so some adaptation to context should be considered.
- Since health care systems are often under pressure, this new approach can be very useful to strengthen them and should be seen as an opportunity to prepare them for similar events in the future.

As lessons learnt the participants stressed that although technology is essential, it is people that drive change. Political leadership was felt essential to enable change. Finally, regarding data privacy, Dr Tille stressed the need to clearly inform patients about the use of their data and show the net benefit of sharing it in the process of care. Data is important for research purposes too; and the use of data is an obligation. The COVID-19 pandemic is having the positive side effect of leading countries to extend the use of digital health tools. They were essential to manage the public health crisis in the present, but it seems likely that its use will continue in the post-pandemic future, changing the way care is provided.

Recommendations

- Countries should take advantage of the momentum created by the pandemic to spread and increase the use of digital health tools. This can be done by creating a favourable environment to the adoption of digital health tools and encouraging local level initiatives, while being mindful of citizens' and healthcare workers' preferences and potential inequalities.
- Digital health literacy amongst citizens must be improved to make optimal use of digital health tools.
- Using existing policy mechanisms (e.g. regulation, financial, quality, and technical) can be employed to incentivise the adoption of digital health solutions.
- National regulations are necessary to ensure the clinical effectiveness and safety of AI solutions.
- Digital health tools should provide linkable data of good quality for algorithms to work effectively.
- It is important to inform patients clearly about the use of their data and show them the net benefit of sharing their data for improving care.

Take Home Messages

- While digital health is currently not used to its full potential, it could improve person-centred healthcare and help build more resilient health systems.
- The COVID-19 pandemic acted as a catalyst for implementation and use of digital solutions to respond directly to the public health emergency and to facilitate the provision of health services in other areas of care. The pandemic thus turned the implementation of digital health tools from an opportunity to a necessity. Use of digital tools will likely continue in the post-pandemic future.
- Digital tools have shown good results in both COVID-19 and other patients, but their design and implementation should be adapted depending on the context.
- Having good infrastructure in place is essential to successfully implement and use digital health tools.
- Data quality and protection must be ensured as this is "a business built on trust". Citizens are generally willing to share data if their privacy is ensured. Opting out should always be an option and informed consent must be the norm.
- Political leadership and commitment are essential to enable change towards digital transformation.
- Digital tools might strengthen health care systems under pressure and help prepare them for similar events in the future.

Winter is coming: the burden of Respiratory Syncytial Virus (RSV) on health systems in Europe

Session organised by Sanofi Pasteur

Speakers: **Dr Christian Felter, MD** (RSV Franchise Medical Head, Sanofi Pasteur); **Prof Javier Díez Domingo** (Head of the Vaccine Research Department, Centre of Public Health Research of Valencia-FISABIO); **Prof Susanna Esposito** (Professor of Pediatrics, University of Parma and WAidid President); **Dr Călin Bumbuluț** (Senior Family Physician, Satu Mare Family Physicians Association Romania; President, European Union of General Practitioners); **Dr Simon Nadel** (Imperial College Healthcare NHS Trust); **Dr Francisco Mourão** (Centro Hospitalar e Universitário de Porto and Executive Board, European Junior Doctors)

Moderator: **Mr George Valiotis** (Executive Director, EHMA)

Summary

Respiratory Syncytial Virus (RSV) is a leading cause of respiratory morbidity in children, and the major contributor of the winter pressures that burden healthcare organisations every year. Proper documentation of the health burden of RSV is therefore important to better manage RSV infection and facilitate evidence-based treatment practices.

This session included a brief introduction to RSV, followed by a presentation of the survey results of the health burden of RSV and a panel discussion. The topics of discussion were the winter pressures affecting health system performance; the current practices for RSV treatment and management; and the most effective ways to manage RSV within the community.

Dr Christian Felter provided an overview of RSV, an urgent and immediate threat to all infants, to baseline its burden and disruption to health systems. Before COVID-19, RSV was *the* leading respiratory virus with implications in both the elderly and infant patient groups. RSV is responsible for 33 million cases annually, and accounts for 63% of acute respiratory infections in infants. The severity of the illness is unpredictable, and its burden extends beyond the hospital. In the short-term RSV infection is associated with increased incidence of otitis media, pneumonia and excessive antibiotic usage. In the absence of active treatment, only supportive care is offered, and RSV-infected infants are expected to clear the infection on their own. In the long-term, the health burden of RSV includes increased healthcare utilisation, from follow-ups and office visits for recurrent wheezing, reduced pulmonary function, and other complications.

Prof Díez Domingo presented the preliminary results of the EHMA ongoing survey on RSV health burden and disruption. The survey tests for the burden and disruption of RSV across the care setting: within hospitals and outpatient clinics. Health system disruption is defined as the systemic pressures stemming from:

1. increased demand for services.
2. risk of nosocomial RSV; and
3. effects on staff morale and performance.

Seasonality of RSV is a strong factor impacting on health system performance. The burden and disruption of RSV is significant and system-wide and affects all care settings. 90% of healthcare professionals consider the disruption in the peak RSV season to be moderate to extreme. Increased work hours reduced bed capacity and disruptions to patient flow were the top three impacts of the RSV seasonal peak. Staff performance and morale was impacted across all care settings: with increased workloads, stress, burnout and exhausted reported as the leading consequences. Primary care physicians are particularly affected. In hospitals, RSV accounted for more than 50% of acute care beds in the peak season. Survey results also highlighted the wide heterogeneity of treatment practices for RSV, with antibiotic prescriptions proportionately higher in primary care.

The panel discussion highlighted several factors salient to the management and prevention of RSV infection. The first was the need for commonly binding European practice guidelines. RSV treatment is marked by a great deal of heterogeneity both within and across countries, and between practice sites: a point highlighted by the survey results. At present, clinical practice guidelines vary between countries in Europe, and even so, most of them deal with hospital-based care of severe RSV infections. A second point was the disproportionate burden of RSV disease management on primary care. Primary care paediatricians and family physicians face the bulk of mild-moderate RSV infections and the legal responsibility of complications: thus, placing primary care at the 'frontline of primary prophylaxes. This is an important factor for the proportionately higher reported antibiotic prescription usage in primary care. Towards preventive measures, the discussion highlighted the need to involve the community, schools, and caregivers as vital to managing RSV infection within the community. Primary modes of prevention will entail better parental education and improved levels of sanitation at home, in nurseries, and in schools. COVID-19, while changing the epidemiology of RSV, also demonstrates the value of hand hygiene, respiratory etiquette, high standard usage of PPE, and other non-pharmacological interventions in discouraging virus dissemination. These can be extended to better manage RSV in the community.

Take Home Messages

- The burden and disruption of RSV is significant and system-wide and affects all care settings - extending beyond the hospital.
- Primary care deals with the bulk of RSV infections and is at the frontline of primary prophylaxis.
- The absence of an active treatment for RSV points to a global unmet medical need.
- Community involvement is crucial to effectively manage and contain virus dissemination.
- COVID-19 has altered the epidemiology of RSV and improved infection control through high standard usage of PPE, wider adoption of hand hygiene and other NPIs.

How to implement value-based projects - two different approaches!

Session organised by Roche

Speakers: **Dr Florian Ruter** (Head, Quality Management, University Hospital Basel); **Dr Marta Soares** (Portuguese Oncology Institute of Porto - IPO Porto)

Moderator: **Dr Alexandre Lourenço** (President, Associação Portuguesa de Administradores Hospitalares - APAH)

Summary

This session presented two value-based healthcare projects focusing on lung cancer. The first, project, FAROL (“Lighthouse”) is a partnership between the Portuguese Institute of Oncology at Porto, Portugal (IPO Porto), the Portuguese Association of Hospital Managers (APAH), and the pharmaceutical company, Roche. FAROL aims to change the existing model of lung cancer financing. It had a significant impact on IPO Porto as it provided some previously non-existing data about items of disease management such as patient pathway waste and inefficiencies; measured outcomes of the intervention; and total and individual costs. The second partnership also focuses on lung cancer and brings together the University Hospital Basel (USB) - which has expertise in PROMs in more than 20 diseases, recognised internationally - and Roche. This partnership is an example of how the intended value at the patient level also leads to an added value for both companies.

Dr Marta Soares reminded the audience that cancer is responsible for around 10M deaths per year worldwide; this number is rising and causes huge economic losses. Lung cancer takes the biggest share of deaths from cancer in Europe; has a 5-year survival rate below other cancers; and has a large impact in terms of Disability-Adjusted Life Years (DALY). Survival is affected by early diagnosis and treatment. Value-based approaches look at outcomes (clinical and those that matter the most to patients) and costs, thus increasing value to systems.

Dr Soares described FAROL, which is a value-based healthcare project for the treatment of lung cancer. Built around a care pathway, the project included process mapping, cost assessment (using Time-Driven Activity Based Costing), and outcomes measurement. The first results showed that treatment costs vary per year and per disease stage, especially in year 2 of treatment, where costs seem to be well above the price the hospital receives from the State. Outcomes measurement followed international standard sets, namely ICHOM’s, but was limited to a subset of indicators given data unavailability (e.g. data on PROMs). The indicators currently in use are relevant to both clinicians and patients, are routinely collected, and are actionable. The direct benefits of the project were the design of care pathways; increased knowledge and standardisation of care; and learning more about costs, gaining the ability to benchmark and be more efficient. Leadership, involving healthcare professionals, providing incentives (to collect data, for instance), and a good IT system were identified as critical factors for success. Dr Soares believes this model can be applied to other pathologies, can lead to continuous quality improvement, and can be the basis for a more rational way of paying providers.

Dr Florian Ruter started by asking ‘*what do patients want?*’. He referred to how too often professionals focus on outcomes like survival and waiting times but should also look at quality of life and other PROMs. Patients want (and systems try to deliver) personalised, patient-centred care, and empower users, but an additional change of mindset may be needed. Countries spend large amounts of money, but do not always get good quality care, so focus should change from volume to value.

Dr Ruter used the example of Switzerland, where efforts are ongoing to examine the relationship between PROMs and/or PREMs and the cost of providing care. Patients’ point of views must be considered and healthcare must focus on what is essential to them. Using examples of prostate and breast cancer, indicators might be very different for professionals and patients. Survival, for instance, might be similar across care centres, but PROMs quite different. Evidence on how monitoring symptoms improves survival was shared. Dr Ruter reported on the use of PROM sets at UBS – some ICHOM based, others developed in-house, which have involved over 5,000 patients so far. He completed with examples related to breast cancer, orthopaedics, and stroke. The project described is a public-private partnership between UBS and Roche. The partnership is logical as both parties are faced with a challenging situation and have a common interest. As for the future, it is hoped more partners can be included in the provision of care, beyond the classic triangle of patient, provider, and payer.

The audience inquired about the use of indicators from ICHOM. Dr Ruter felt they may be too many and take too long for patients to fill in. Shortening questionnaires, especially for serious diseases, was suggested. In terms of engaging professionals, Dr Soares explained how IPO Porto has two nurses collecting data. Dr Ruter stressed the importance of having committed physician leaders and departments. From his experience, a bottom-up approach is more successful than a top-down. The importance of an information technology platform was highlighted, preferably collecting data digitally from the start with a user-friendly interface. Value-based care may influence payment; costing is fundamental for pricing. The importance of mapping care provision was highlighted, as it helps identify opportunities and professionals tend to react well. Barriers identified include unconvinced professionals; while the need to involve CEOs, presidents, and boards were stressed, as the use of bottom-up approaches. Regarding how a project is paid for, it was suggested to shift funds from other satisfaction questionnaires. It is not easy to start, but it is not very expensive. Overall, these projects can increase quality while reducing costs. But systems need to put value at the centre of their strategy.

The moderator highlighted the role and importance of partnerships and how there were inevitably barriers but also enablers. In terms of vision and next steps, Dr Ruter mentioned the need to reduce overuse, save money, and focus on what really matters to patients. Patients should be seen as partners. Dr Marta Soares mentioned the need to spread the use of value-based healthcare, generalise it to other cancers, and get it to influence the financing, so institutions get the right price. The concept of value-based care is extremely relevant in the current context where most healthcare systems struggle with lack of resources and often provide care that is less than ideal. Focusing on what matters to patients, using PROMs and PREMs, will help reduce waste by providing care that is not valued.

Recommendations

- Health care systems should put value at the centre of their strategy and adopt value-based approaches that look at costs and outcomes.
- Measure outcomes that matter to patients to move towards a person-centred care system, patients should be seen as partners.
- We must move beyond outcomes like survival and waiting times and include quality of life and other Patient Reported Outcome Measures (PROMs).
- To have optimal quality care, it is important to shift the focus from volume to value.

Take Home Messages

- Redesigning lung cancer financing sheds light on patient pathway waste and inefficiencies, provides data on outcomes of the intervention, and gives insight into total and individual costs.
- Value-based approaches looking at outcomes – both clinical and those mattering to patients – and using PROMs and PREMs will help reduce waste by avoiding the provision of unnecessary care, thus ultimately increasing value to systems.
- Investigating how we currently provide care (e.g. by mapping care provision and designing care pathways) will helps critically reflect on it and standardise care.
- VBHC projects can improve the design of care pathways; increased knowledge and standardisation of care; and help learning more about costs, gaining the ability to benchmark and be more efficient.
- Outcomes measured should ideally be relevant to both clinicians and patients.
- Leadership, the involvement (and allocation) of health care professionals and good IT platforms are commonly cited as decisive for a successful implementation of VBHC projects.
- Value-based health care models can lead to quality improvement and to more rational way of paying providers and should therefore be applied more generally and broadly.

Governance for healthcare transformation: harnessing the power of laboratories

Session is organised by Abbott and the UNIVANTS of Healthcare Excellence Award

Speakers: **Prof John Dillon** (Professor of Hepatology and Gastroenterology, University of Dundee); **Dr Ellie Dow** (Consultant in Biochemical Medicine, NHS Tayside); **Prof Federico Lega** (Professor in Healthcare Management, Department of Biomedical Sciences for Health, University of Milan)

Moderator: **Dr Colleen Strain** (Scientific Manager, Scientific Leadership and Education, Core Diagnostics, Abbott)

Summary

In this session, the speakers discussed the potential of laboratories to favourably impact decision-making and clinical governance as powerful collaborators and catalysts of value to health systems. According to Prof Federico Lega, laboratories should be considered as key drivers in developing effective health services delivery within the ‘new normal’ of healthcare. There are two main areas that health systems have increasingly pursued in recent years and in which laboratories play a key role:

- Developing population health management. It entails moving from reactive to active healthcare management focusing more on preventive medicine and less on curing and caring. This includes nurturing citizens to become more involved and responsible in the management of their own health.
- Value-based healthcare. Within this area, it is paramount to focus on outcomes, and laboratories are fundamental in guiding clinicians on how to improve outcomes.

Many issues hinder the contribution of laboratories in health systems:

- Top management does not know about day-to-day laboratory operations and does not perceive their true value.
- Laboratories are often disconnected from the rest of the hospital and are seen as a commodity, rather than as a clinical unit.
- Top management often perceives laboratories as drivers of high expenses for both upfront investments and daily activities, rather than as value-generating units. Therefore, there is often emphasis in short-term cost reduction (concentration, outsourcing, downsizing) rather than in improving capacity and capabilities, thus the value produced by laboratories.

If laboratories are to gain a more pivotal role in healthcare systems, there is a need for a cultural shift. Once that shift happens, laboratories can be a good benchmark and a source of learning and value for health systems to improve practice and safety standards; create multi-disciplinary and multi-professional teams, including patients; focus on appropriate care, as laboratories have been under more pressure around safety and delivery than other clinical areas; lead research with new tests and models for better results; adopt new delivery models, from technical and pathway viewpoints; as well as generate clinical governance.

There are three main areas where laboratories should be more involved:

- **System governance and policymaking:** laboratory clinicians should sit in committees where decisions to change policy happen, as they have experience in generating predictive and precision medicine and population health management.
- **Clinical teams:** laboratory clinicians should be involved in delivering and leading pathways within clinical service lines as essential members of the transversal lines and multidisciplinary teams.
- **Clinical governance:** laboratory clinicians are more advanced in areas such as pathways for generating diagnoses or use of innovative technologies, thus can support colleagues in strategy design for health organisations.

Health systems and organisations need to recognise the value and contributions that laboratories can generate and become more aware that laboratories are not cost centres, but an investment that generates cost savings, accelerates desired changes in the health system, and improves outcomes for patients. The UNIVANTS of healthcare excellence programme is a great vessel in shifting the perception of laboratories within health systems around the world.

In 2019 Prof John Dillon and Dr Ellie Dow were recognised by the UNIVANTS Award for their innovative Intelligent Liver Function Testing (iLFT) algorithm. They presented their case study to illustrate the benefits of shifting towards an integrated model for laboratories. Between 1970 and 2010, liver disease increased substantially in the UK, with 3/4 of patients being under the age of 65. Furthermore, most patients presented for the first-time decompensated liver disease, which is expensive and with very high mortality. An analysis of the history of those patients showed that many had a liver function test measured by laboratories, but it was not properly acted upon by clinicians. The rational for the iLFT was to automate early interaction and feedback to clinicians what they should be doing with the test; give them additional information; and subsequent test referral pathways. This would have improved the quality of care, the governance around the use of the results, but also support clinicians in the decision-making process.

To develop the iLFT, the team at NHS Tayside formed a co-production team with information technology technicians, clinicians and experts, general practitioners (GPs), and most laboratory medical specialties. In practice, the GP requested the liver function test. If the laboratory results were normal, the GP would proceed with the standard care; but if the results were abnormal, there would be a series of reflexive tests and clinical data integrated in the laboratory, and real time reports would be returned to the GP (iLFT). The vision was that an iLFT should be easy for GPs to request; the information required would easily make the algorithm work; and finally, the results would be a meaningful and a real-time report with a management plan to move forward with the patient. Multi-disciplinary teamwork and breaking down the traditional silos-working approach was crucial for the development and delivery of the project. The iLFT started as a clinical trial at NHS Tayside in Scotland and is now part of its routine service. The iLFT doubled the rate of correct diagnoses of patient with liver disease before the liver decompensated, which increased the lifespan of patients from 22 months to 12 years. There was a slight increase in service costs, as more patients were being appropriately diagnosed and treated. However, in the long-term, there was more than 7 million euros in lifetime cost avoidance for 2,350 patients diagnosed by iLFT leading to clinical interventions. There were several logistical barriers, such as sample sharing and information technology, as the existing designs were created for silo works rather than integrated processes. Furthermore, there was resistance to change and innovation in existing processes, which required effective communication skills and measurable outcomes to push the initiative forward. This experience can be translated to other diseases in which early diagnosis can significantly impact patient outcomes and costs.

The iLFT contributed to several benefits and changes to the perception of laboratory within both the hospital and the health system. The laboratory team started having better representation at intermediate and high-level committees within the hospital; they also gained recognition of the quality of their work in the local health economy. The iLFT showed that effective diagnosis could be done without requiring patients to have repeated visits to their doctors or the hospital. It also increased communications with clinical colleagues. Although clinical managers were including laboratories in their decision-making processes, hospital managers were more hesitant. COVID-19 accelerated the integration of laboratories in management processes, as the management has seen the power of laboratories diagnostics not just on chronic conditions but also acute challenges.

Answering to a question about scaling up, Dr Dow and Prof Dillion stated that some partners in England went live with iLFT and others are considering its implementation. Dr Dow has been working with partners in Scotland that were about 50-70% through the iLFT implementation when COVID hit, and they consequently had to delay their plans. The major challenges for any laboratory to implement this testing is the IT system. In the next 2-3 years a new IT system for laboratories will be implemented in Scotland and all the big centres should be able to undertake iLFT.

The success of iLFT raised interest to replicate it in other clinical areas. One of the reasons of its success is the ability of the team to step away from working in silos and work together with all stakeholders within the hospital. The iLFT enables teams to think together and out of the box exchanging information across disciplines, integrating test results, and working holistically focusing on the outcomes for patients. As far as clinical governance is concerned, the laboratory now has a higher profile in the hospital and has been involved in the planning stages of different projects, rather than just at the implementation phases.

Laboratorians are not always seen as doctors as they are not seen in the wards, but laboratories are currently working ahead of other clinical departments with process and quality control, which are crucial skills in management processes. Recognition of laboratory physicians and professionals is important, and they should be involved in clinical governance at all levels. Although there are challenges, there are also many opportunities for laboratorians to increasingly step outside of laboratories. The UNIVANTS of Healthcare Excellence Award provides an outlet to discover and highlight more best practices of multidisciplinary care teams that have unified across the care continuum; mobilised clinical data and processes in innovative ways; as well as achieved measurably better performance and outcomes.

Recommendations

- The scientific society should consolidate a strong narrative around the current and possible contribution of laboratories in health systems. Laboratories are not only cost centres, but also offer an opportunity for partnering to create value.
- Laboratories are already drivers for more integrated practices and multidisciplinary work and should further this work, as well as turn their ability to driver changes into a measure of success.
- Laboratories need to be outward facing and participate more actively in debates of policy, governance and decision making as there is much that can be learnt from them. This would allow them to support in providing complete answers for a problem and not only test results.
- Managers should support and create an environment where teams can easily discuss issues and challenges and work together to address them. Multidisciplinary discussions provide a holistic overview, including the patient perspective, which facilitates the identification of issues, but also solutions.

Take Home Messages

- To support multidisciplinary collaboration, it is important to have a unified goal, build the team around the goal, and have champions that will share it widely within and outside the institution to gain further support. This entails having the right stakeholders, including patients, and breakdown any silos that might exist.
- By adding small additional costs to laboratories up-front, health systems can experience substantial savings in the long-term.
- Laboratory clinicians should have a more prominent role in managerial and governance roles, medical departments, and high-level committees as laboratory clinicians have a different perspective, a helicopter view of health system or organisation, familiarity with process control, good and effective work approaches, and better understanding of innovation.

Ageing and health: the politics of better policies

Session organised by the European Observatory on Health Systems and Policies

Speakers: **Dr Jonathan Cylus** (European Observatory on Health Systems and Policies); **Prof Jane Gingrich** (University of Oxford); **Prof Scott L. Greer** (University of Michigan); **Prof Minakshi Raj** (University of Illinois at Urbana-Champaign); **Ass. Prof Aaron Reeves** (University of Oxford)

Moderator: **Dr Michelle Falkenbach** (Postdoctoral Associate, Cornell University)

Summary

This session discussed the topics of ageing, health, politics, and policies. The overall argument, presented by Prof Scott Greer and Dr Jonathan Cylus, was that ageing is not a problem *per se* for healthcare systems or budgets, inequality is. Prof Aaron Reeves spoke about inequalities that are concealed due to the overall focus on intergenerational inequalities and on higher healthcare expenditures generally associated with an elderly population. Prof Jane Gingrich discussed the politics and policies on ageing and health. Finally, Prof Minakshi Raj presented what ageing practically means for the re-calibration and the development of health management and health policies.

Prof Scott Greer started with the overall argument that ageing is not a problem for healthcare systems or budgets. Numbers show that ageing societies do not have higher healthcare expenditures. Instead, the political question should be around the re-calibration of healthcare systems and addressing inequalities. Focusing on aging distracts from other inequalities affecting health and wellbeing along the life course. Firstly, gender inequality, as women largely provide paid and unpaid care in our societies. Secondly nationality, as it is mostly immigrants who provide care and are being exploited for their labour. Thirdly, racial hierarchies are also important determinants of who provides care and who does not get care. Furthermore income, location, and household wealth are well-known inequalities. Focusing on ageing leads to arguments in favour of cutting back social provisions; whereas policies on aging should entail better support over the life course, enabling people to have more meaningful lives and to take advantage of all opportunities for a more egalitarian, caring society.

Dr Jonathan Cylus agreed that ageing is not necessarily a problem for healthcare systems. He mentioned that health systems are one of the area's most often seen as being vulnerable to ageing societies, and this is based on two main perceptions:

1. Older people are on average more expensive to care for and so ageing populations will accelerate health expenditure growth.
2. Older people are economically unproductive and so ageing populations will generate fewer public revenue.

Research conducted by the Observatory contradicts these perceptions. The average health expenditure per person shows that health expenditure remains flat until about the mid-40s and 50s to then increase. The consequent assumption is that having more older people inevitably increases health expenditure. However, looking at population projections, the overall impact of population ageing is negligible on health expenditure growth. The average per capita health expenditure growth in the EU between 2016 and 2018 was 4.7% and, comparing this across countries, ageing accounts for roughly 10-15% of expenditure growth. Therefore, ageing is not and will not become the major driver of health expenditure that is mostly impacted by prices and medical technologies. On the other perception, looking at the population age structure and the economy, research data was gathered across 180 countries from 1999 to 2017 to understand the relationship between the size of the older workforce, their health and economic growth. This showed that there is a correlation between the size of the older working population and slow economic growth, however, it is not a foregone conclusion. If the population ages in good health, then the size of the older population makes no difference in the economy.

Prof Aaron Reeves delved the discussion deeper into the concept of inequalities. Commonly perceived problems, such as the ageing crisis, health budgets and the economy, are not just overstated but also have unintended consequences. Focusing on ageing means that other social problems become less visible. The risk of focusing on INTER-generational (occurring among generations) inequalities is to overlook INTRA-generational (occurring among members of one generation) inequalities. Prof Reeves explained that INTRA-generational inequalities affect the process of healthy ageing and health costs associated with an ageing population are rooted in these inequalities. Inequalities are persistent across all age categories and have a significant influence on the individual process of ageing. Anchoring policymaking on ageing results in the neglect of INTRA-generational inequalities in health. INTRA-generational inequalities can be addressed via policies. Reducing inequalities in ageing diminishes the economic costs commonly associated with it. Evidence demonstrates that how societies are organised has a real impact on how health inequalities develop. This problem cannot be dealt with in discrete cross-sections. The focus must be on the politics of inequalities.

Prof Jane Gingrich discussed how to end up with the constellation of policies entrenched to life course. According to Prof Gingrich, four models emerge in different welfare states:

1. **High road**: welfare states with large inter- and intra-generational solidarity. These deliver win-win life course outcomes investing in youth, in people during their work life and in creating living standards for the elderly.
2. **Age-focused**: concentrate social spending on the elderly and invest much less in younger people and income security in working ages, allowing high levels of inequality to emerge across the working-age population.
3. **Universal limited**: some programs address all age groups, but they do not spend enough on any of them. Programs do not necessarily clamp down on high levels of inequality.
4. **Low road**: a small number of countries have some quite limited programs targeted for the elderly, but not much for other groups.

To reach that high road, policy makers need to think about ways in which cross-class and cross-age coalitions can emerge. Older voters are willing to invest in young people in countries such as Ireland, Norway, the Netherlands, and Sweden, which observe a movement towards win-win life-course-style outcomes. Coalitions emerge around investments for both old and young people, in childcare and care for the elderly. Where there has been more attention to those issues, there is more evidence of a stable intra- and inter-generational bargain really targeting support to intra-generational equity.

Prof Minakshi Raj underlined that it is critical that population ages in good health. Some ways to approach this include:

- Addressing the social determinants of health from childhood and addressing disparities that subject some older adults to avoidable, unfair challenges later in life.
- Investing in family caregivers and healthcare workers, both formal and informal, in the form of compensation, paid leave, or simply a culture of flexibility. Family caregivers are also going through the process of aging; meanwhile, formal members of the healthcare workforce, that are often immigrants, may also face disparities.
- Thinking long-term when developing policies for children and reflecting through the entire life course. Continuously learning from the past is essential, as children and younger adults are often excluded and invisible in developing social policy.
- Recognise the limitations of professionals' experience. Professionals know what childhood was like, but not what it is like to be old. This creates space to use the experiences of older people themselves.

The overall argument was that ageing is not a problem – inequality is, therefore, there is a need to focus on the politics of inequalities. Ageing is shaped by both peoples' behaviour and political behaviour, but some policies and processes are not fully backed up by evidence. Policy-making that undermines welfare states and solidarity distracts from a more solid basis for political action, such as addressing inequalities. Inequalities in wellbeing, health, and functioning across life-course eventually become the inequalities that affect older generations. From an economic perspective, if the population ages in good health, then the size of the older population makes no difference.

Recommendations

- It is important to address the social determinants of health from childhood and address disparities that subject some older adults to avoidable, unfair challenges later in life.
- Older people should be able to live and age in their own communities. This will allow them to continue forming and maintaining social relationships; support their interactions with their families; to seek healthcare and resources they need in their own time and way. This may also require tackling ageism.
- Societies and organisations need to invest in family caregivers and healthcare workers, both formal and informal. This could be in the form of compensating family caregivers for their time, allowing paid leave, or simply adopting a culture of flexibility. Family caregivers themselves are going through the process of ageing and might benefit from greater investments in their health. Formal members of the healthcare workforce, who are often immigrants, may also face disparities.
- Long-term thinking is required when developing policies for children that tackle the entire life course. Continuous learning from the past is paramount, as children, youth and younger adults are often excluded and invisible when developing social policy.

Take Home Messages

- Ageing is not a problem; inequality is. Ageing, per se, is not a problem for healthcare systems or budgets, as ageing societies do not have higher healthcare expenditures. If the population ages in good health, then the size of the older population makes no difference in the economy.
- Focusing on ageing distracts from other inequalities that affect health and wellbeing throughout the life course. Focusing on ageing supports arguments in favour of cutting back social provisions, whereas there should be a better overall support over the life course.
- Coalitions that support investments both in older and younger people lead to win-win outcomes: where there is attention to those issues, there is a much more stable, intra- and inter-generational bargain.
- Reducing inequalities in ageing also diminishes the economic costs commonly associated with it.

Health systems resilience during COVID-19: what have we learnt?

Session organised by European Observatory on Health Systems and Policy

Speakers: **Dr Erica Richardson** (Technical Officer, European Observatory on Health Systems and Policy); **Ms Ruth Waitzberg** (Research Fellow, European Observatory on Health Systems and Policy); **Ms Erin Webb** (Research fellow, Technical University of Berlin); **Ms Gemma Williams** (Research Fellow, European Observatory on Health Systems and Policy)

Moderator: **Ms Anna Sagan** (Research Fellow, European Observatory on Health Systems and Policy)

Summary

This session outlined the strategies that enabled European health systems to respond resiliently to the COVID-19 pandemic, drawing on the study 'Health systems resilience during COVID-19: Lessons for building back better' by the European Observatory on Health Systems and Policies and on the COVID-19 Health System Response Monitor (HSRM).

Ms Erin Webb presented how health systems have transformed service delivery while meeting other health needs during COVID-19. To increase the resilience of service delivery, countries used two different approaches: one was upscaling, repurposing and redistributing capacity by using operating and recovery rooms, creating new spaces for care and recovery, using private or military hospitals, and transferring capacities between facilities, regions and countries. The other approach was transforming and adapting service delivery by introducing alternative or flexible patient care pathways and interventions, such as the use of remote services like digital consultations. Healthcare providers also identified which services could be maintained or had to be postponed during the pandemic. In addition, the pandemic highlighted the importance of primary healthcare, as primary care providers were involved in key public health activities, such as testing and screening.

Dr Erica Richardson highlighted that public health adopted a dual role: to reduce virus transmission and to maintain preventive services. National implementation of non-pharmaceutical interventions depended on political priorities and on weighing public health benefits against perceived potential adverse effects on mental health or the economic and social impact of interventions. Furthermore, deciding on which, when, and how to implement measures has been a complex process that required updating best practices to inform policy decisions in the context of uncertainty and changing evidence. Interventions such as internal and external travel restrictions, wearing face masks, or physical distancing were easier to establish in countries with stronger public health and primary care systems with strong community linkages. Traditional tracing methods were more effective than digital technologies to 'Find, Test, Trace, Isolate and Support (FFTIS)' due to the public's concerns about privacy and data use. FFTIS is a system where each element is equally important and requires systems in place supporting isolation. Support for isolation requires a dedicated workforce and needs to go beyond providing people with alternative accommodation by reducing the risk of economic loss. Public health interventions matter and pandemic surge capacity should not be neglected in planning. To avoid overburdening the health system, non-pharmaceutical and continuous screening and testing for infection are as important as vaccination to avoid overburdening the health system. The pandemic highlighted pre-existing public health challenges, such as vaccine hesitancy and socio-economic inequality, which have been exacerbated by the pandemic.

Ms Williams focused on how European countries mobilised their health workforce and supported them during the pandemic. While workforce availability was complicated by pre-existing shortages, maldistribution, skill misalignment, the pandemic also resulted in workforce depletion due to infection and mental health burdens. To expand workforce capacity most countries modified existing work practices by adding hours, modifying work schedules, suspending rotations, cancelling leave or absences. They also took steps to reskill, redeploy and repurpose the workforce by reassigning health professionals to other specialties, expanding scopes of practice, or redeploying workers to other regions or facilities. Examples include British dentists being redeployed to hospitals, Belgian non-nurse professionals performing nursing tasks, and Austrian paramedics given authorisation to administer vaccines. Some countries used new or inactive workers to increase capacity, including military support, bringing back retired or inactive professionals, or sign unlicensed foreign health professionals. To protect the health and wellbeing of the workforce, some countries provided financial, psychological, physical support, training, and practical support. Mobilisation of and support to the workforce had governance implications requiring new levels of multidisciplinary collaborations. For example, national and regional policymakers authorised new staff hires and ensured sufficient supply and distribution of personal protective equipment. Meanwhile, legalisation was relaxed to allow for increased working hours, and regulations defined competencies for vaccine administration. Ms. Williams concluded that the health workforce will be at the centre of health systems' recovery and long-term mental health support will play an increasingly important role in creating a sustainable health workforce.

Ms Waitzberg shared insights on funding COVID-19 services, for which health service financing had to be adjusted. While expenditure increased as a result of the sudden demand for COVID-19 services, which are high-cost due to long hospital stays, isolation treatment and complex care in ICUs; income decreased as elective admissions were put on hold, patients avoided seeking care, tax and contributions revenue lowered due to the fiscal crisis and unemployment rates associated with COVID-19. To ensure there were sufficient funds to meet needs, countries employed various strategies, including drawing on financial reserves and generating additional funding from borrowing or selling bonds or receiving access to the EU recovery funds. Another strategy directed funds to the areas where it was most needed leading to more flexibility in procurement approaches. Countries switched to centralised procurement, others adopted flexible approaches to public-private partnerships. Ms Waitzberg explained how providers losses and expenses were compensated in different countries. Some regions used this opportunity to simultaneously incentivise innovation and introduce digitalisation. The last strategy used was increasing support and coverage of Universal Health Care (UHC). This was a crucial measure as people who are not properly covered will not seek care. Countries expanded coverage for non-residents and reduced the financial barriers for seeking care by abolishing co-payments and including new services to the basket list of services. COVID tests and vaccinations, for example, were free of charge. Initiatives like this demonstrated the importance of Universal Coverage to enhance health system resilience.

Finally, Ms Sagan presented on the topic of leading and governing the COVID-19 response. Ms Sagan discussed governance functions in health systems, such as financing of resource generation; ensuring that service delivery functions; and a strategic vision that holds governments to account and drives evidence-based decisions and policymaking. Governance is complex and evolving. A universal common framework or simple concept of health systems governance does not exist. Lessons that have emerged include setting out a clear and timely pandemic response strategy backed by appropriate legislation; communicating clearly and transparently with the population and relevant stakeholders; setting up monitoring, surveillance early warning systems; and coordinating pandemic responses beyond the national borders. The critical role of political leadership in setting and implementing the COVID-19 response was emphasised. Key elements of good leadership are responsiveness, resourcefulness, and the capacity to learn. Therefore, the political context plays a critical role as it influences both the ability to act and leadership accountability. In addition, the use of data can help hold leaders accountable for their ability, or inability, to protect public health. Finally, strong governance that enables good health policy can provide a defence against bad leaders through parliamentary and judiciary oversight.

Each European country reacted differently to the shocks of the COVID-19 pandemic. It was found that strong health systems before the pandemic showed more resilience promoted by responsive and resourceful leadership.

Recommendations

- Flexible procurement of PPE and public-private partnerships should comply with good governance practices by ensuring accountability, measurable outcomes and communication to avoid negative consequences.
- Ensure transparency, legitimacy and accountability in policymaking and its implementation increases trust and support for measures within a population, which is crucial for the outcome of the COVID-19 pandemic.
- Effective coordination within government (horizontal) and between levels of government (vertical) is necessary to implement the COVID-19 measures effectively and without hindrance to one another.
- Continuous screening and testing for COVID-19 infections are important to detect the virus early, stop the transmission and prevent overburdening of health systems.

Take Home Messages

- Through Universal Health Care (UHC), it is possible for every citizen to access the health system without suffering severe financial consequences and thus seek care. Thus, COVID-19 has shown that UHC increases the resilience of health systems and reemphasises the importance.
- Supporting the mental health of the workforce is essential as the workforce is central to the resilience of the health system.
- In most cases, primary healthcare (PHC) providers are the first point of contact for people who have contracted COVID-19. For this reason, the role of PHC should not be underestimated and should be supported accordingly.
- Effective political leadership is needed for a resilient response to a pandemic and is characterised by Key elements like responsiveness, resourcefulness and the capacity to learn.

The Recovery & Resilience Facility: a driver of Europe's ambitions for a resilient Health Union and global health leadership?

Session organised by Sanofi

Speakers: **Ms Maria Teresa Fabregas Fernandez** (Director, Recovery and Resilience Task Force – RECOVER, European Commission); **Dr Josep Figueras** (Director, European Observatory on Health Systems and Policies); **Prof Francesco Saverio Mennini** (Centre for Economics and International Studies-Economic Evaluation and Health Technology Assessment, University of Rome); **Dr François Sandre** (Head of Europe Region, Sanofi Pasteur); **Dr Mariano Votta** (Director, Active Citizenship Network/Cittadinanzattiva)

Moderator: **Ms Caroline Costongs** (Director, EuroHealthNet)

Summary

This session discussed the European Recovery and Resilience Facility (RRF) providing an overview and insight into Europe Member States' investment plans for healthcare.

Ms Maria Teresa Fábregas Fernandez reflected on how the pandemic demonstrated to the European Union that health is dependent on and interconnected with each EU Member State. Unity and coordination were crucial to overcoming the challenges posed by the pandemic. All available means were mobilised to support Member States, including the Recovery and Resilience Facility, the pinnacle of the Next Generation EU Programme. The RRF has two objectives. Firstly, to support the green and digital transition of Europe's economies. Secondly, to provide continuous support in strengthening health and care systems of Member States by investing in health systems' resilience. RFF plans must make sure that all proposed investments and reforms are aligned and linked to the country-specific recommendations issued in the framework of the European semester that highlighted the strengths and weaknesses of each country healthcare sector. Ms Fabregas Fernandez explained that Member States' plans differ depending on their needs. Many plans include elements to improve primary healthcare, scale-up prevention, and workforce investments. Health system resilience includes investments in regulations and frameworks to create an environment for long-term investments to have an effect. Finally, key to improving future collaboration in health will be the European Health Emergency Preparedness and Response Authority, HERA.

Dr Josep Figueras provided the perspective of the WHO European Observatory. He advocated for investments' potential to be maximised to support all aspects of transformation and resilience in health systems. Investments should be directed towards areas where that are intuitively less prone for investments. These areas are key to support any transformation. Coordination of investments is crucial to maximise efficiency and avoid merely building larger capacity in individual Member States.

According to Dr Figueras, four elements are vital for increasing the resilience of health systems and for transformation. First, changes in culture and regulations, such as the improved framework that led to the rise of telemedicine during the pandemic. Likewise, the shift towards improving monitoring and surveillance focusing on early warning systems detecting vulnerable populations allowed interventions to be effectively targeted. Secondly, improve health system integration and not only focus on digitalisation. Digitalisation in silos must be avoided; emphasis must be on collaborative platforms allowing stakeholders in primary care to work together more efficiently and improve care integration. Third, flexibility and modular building blocks are essential. COVID-19 has accentuated that flexibility is required as much as capacity. Finally, investments must be made in public health governance. In many Member States, public health institutes are underfinanced, negatively affecting efficiency on all levels as well as adversely impacting population health. Governance and policy need to support and provide incentives for innovation and mutual learning. To tackle this issue, building effective and transparent partnerships with the private sector is crucial.

Prof Francesco Saverio Mennini presented an overview of Italy's National Recovery and Resilience plan that is divided into two specific pathways. The first pathway is oriented on investments in telemedicine to the value of 7 million euros, as Italy lacks important technology and organisational perspective. Access to effective and innovative technologies is crucial to achieving the best outcomes for patients and the best results in care continuity. The second pathway is focused on innovation, research, and digitalisation of health services - 9 billion euros will be invested. With the rising importance of data-driven healthcare, investments are aimed at creating and connecting databases and all data information systems to progress towards the development of a 'data lake'. This will help understand how technology is used in the national health services, evaluate where technology can be optimised, and support research, innovations, and the use of new technologies. Health Technology Assessment (HTA) will serve as a crucial instrument to support efficiency and effective resource allocation due to its characteristics of neutrality and transparency. Member States must prioritise the implementation of a 'health' model as the main pathway guaranteeing all European Union citizens access to high-quality, effective and efficient healthcare systems that not only increase the quality of life but reduce disability, productivity loss, and guaranteed long-term economic development.

Dr Mariano Votta presented the perspective of patient organisations and civil society. Civil participation and patient advocacy are often forgotten but are very important in the development of new health policies and regulations. The European Economic and Social Committee adopted a resolution titled '*Involvement of Organised Civil Society in the National Recovery and Resilience Plans – What works and what does not?*', but in the various RRF plans, civil participation is largely insufficient on many levels. The process does not allow civil society organisations to have a sufficient impact on the plans. This discrepancy must be corrected by implementing more formal procedures facilitating the true integration of civil perspectives and interests. Dr Votta highlighted the request to install tools to track financial data linked to National Recovery Plans and make this information public and openly available. This is in line with provisions of the regulation for the Next Generation EU fund. Given the large number of financial resources available for health system strengthening and improving resilience, allocations of funds must be optimised and fully transparent. To operationalise this, Member States could follow Italy's example. The quality and inclusiveness of the decision-making process in the construction of Italy national plan are intended to be monitored by a program named 'Follow the money'.

Dr François Sandre presented the views of Sanofi on the role of the Recovery and Resilience Facility to promote European competitiveness in healthcare and innovation. While the Recovery Funds represent a unique opportunity to make healthcare systems more efficient, sustainable, and resilient, areas such as prevention and digital transformation require more investments than others. The total EU expenditure on prevention accounts to 3% of all health expenditure. Therefore, a cultural shift from acute care towards prevention is needed. Second, investing in digital transformation will expand access to care and improve its quality. The development of a European Health Data Space (EHDS) is a must for industry who is willing to support and contribute to its development. Dr Sandre explained why Europe must build a stronger research development and manufacturing ecosystem. The EU has the ingredients to become a global leader in healthcare, but investments are required to translate the ingredients to true innovations and results. To shape resilient health systems, investment in research and development is key. Investments in targeted innovation hubs with dedicated and well-defined priorities are crucial to foster innovation. Sanofi has committed to supporting innovation by investing €600 million towards an evolutive facility and in an MRNA centre of excellence with €400 million euros for the next 5 years to develop a hand-to-hand technique and expertise from R&D to production. Biopharma hubs can attract talent and allows to concentrate both technology and funds. Coordinating investments at EU level will be pivotal to ensuring consistency and fostering cross-border projects and collaborations.

Recommendations

- Funds are crucial to support recovery and resilience, but equally important is the development of regulations and legislative frameworks to allow investments to reach their maximum effectiveness.
- When allocating investments towards the recovery of health systems and increasing resilience, look beyond the usual suspects and consider investments in frameworks that support prevention and improve integration of systems.
- RRF-plans need to be implemented by Member States in line with the country-specific recommendations, whilst paying attention to being inclusive, involve all relevant stakeholders and be transparent in every step of the implementation process.
- Europe's citizens must be considered as protagonist in the RRF-plan development and not just passive observers.
- A strong R&D and manufacturing ecosystem should be built across Europe to unleash innovation and ensure long-term growth.

Take Home Messages

- The primary objective of the Recovery and Resilience Funds is to strengthen economic and social resilience in the EU and support the green and digital transition of the EU economies.
- Parallel to the implementation of the RRF-funds, the European Commission is working on building new structures to be more prepared for future crisis with the European Health Emergency Preparedness and Response Authority, HERA.
- It is important to not only focus on the digitalisation of information systems but also improve the integration of these systems and various data sources to optimise continuity and quality of care and foster collaboration on various levels.
- Invest in making healthcare systems flexible and dynamic; we need to be prepared for a system shock of any kind.

Build Back Better. Time to act: the burden of cardiovascular diseases

Session organised by Novartis

Speakers: **Dr Birgit Beger** (CEO, EU Heart Network); **Ms Maria da Graça Carvalho** (Co-Chair of the Heart Group, and Member of European Parliament); **Dr Filipe Macedo** (Director, Portuguese National CVD Program); **Ms Donata Meroni** (Head of Unit 'Health promotion and disease prevention', DG SANTE, European Commission); **Prof Fausto Pinto** (President, World Heart Federation); **Dr Janneke Van der Kamp** (Region Europe Head, Novartis Pharmaceuticals)

Moderator: **Dr Alexandre Lourenço** (President, Associação Portuguesa de Administradores Hospitalares - APAH)

Summary

The COVID-19 pandemic has pushed health and patient outcomes at the forefront of global priorities. Organisations and systems must seize this opportunity and think about how to move forward differently at the individual and the population level. This session highlighted the need to build back better and fairer to prevent the emergence of silent pandemics of chronic diseases, most specifically cardiovascular diseases (CVDs), but also to learn from the COVID-19 response to tackle existing and future health challenges. The focus was on how to build a comprehensive EU policy response to address the increasing burden of CVDs and ensure that citizens can live healthier lives regardless of where they are born or live in the EU.

MEP Maria da Graça Carvalho addressed the necessity for investments in biomedical research and innovation within the EU, supported by collaboration among Member States on data and scientific research in health. MEP Carvalho called for stronger policy engagement at a European level and for more public-private partnerships (PPP). Two of the eleven public-private partnerships of Horizon Europe that will be in operation soon will be about health: one about prevention, diagnostic, and treatment of CVDs, cancer, and diabetes, and one about global health. The European Alliance for Cardiovascular Health is an example of a cross-border initiative that call for the Union to develop a comprehensive plan for CVDs. Investment in CVD research is low in comparison to the disease burden and innovation in cardiovascular medicine lacks behind other medical areas. MEP Carvalho called on the Union to act now to tackle the burden of CVDs.

Ms Donata Meroni recognised that although the EU has limited competency regarding public health, COVID-19 has demonstrated that holistic health actions and coordination at the EU level is essential and in the interest of European citizens. The EU is heavily invested in building a stronger health union to better protect citizens' health, improve pandemic preparedness and health system resilience. The main action taken by the Commission are to (1) strengthen institutions dealing with preparedness, such as the European Centre for Disease Prevention and Control and the European Medicine Agency; (2) establish the European Health Emergency preparedness and Response Authority (HERA); (3) revamp existing legal frameworks taking stock of lessons learnt from the pandemic; and (4) uptake of digital health technologies. The Health Union will prioritise data collection, tackle inequality, and support the surveillance of disease outcomes enabling better coordination within and between Member States. The EU will continue to promote best practices on NCDs and support data knowledge, using the 'Data Gate' dedicated to NCD data collection with the aim to provide reliable, standardised data for research and policy making purposes. To support these actions, essential funding programmes are available, such as Horizon Europe, EU4Health, the EU Health Data Space, and NextGenerationEU. The EU4Health programme constitutes a paradigm shift for a strong European Health Union as 20% of the programme's budget is allocated to supporting health promotion and disease prevention across the lifespan. Another important instrument is the Europe Beating Cancer Plan, which addresses risk factors and promotes healthy lifestyles, thus also preventing and reducing the prevalence of other non-communicable diseases, including CVDs. Ms Meroni shared the Commission's emphasis on concrete and measurable actions to decrease risks factors for cardiovascular diseases, rather than continuing to develop strategies and plans.

Dr Birgit Beger welcomed the ambitious EU policy and regulations that address critical life factors contributing to CVDs. Unfortunately, strong disparities remain in CVDs mortality rates between Eastern and Western Europe. While the current EU4Health programme and Horizon Europe have a strong focus on cancer, cardiovascular diseases should not be neglected and should also have a plan, as evidence has demonstrated the overwhelming burden of CVDs to the quality of life and mortality rates of European citizens. The EU has a prime role to promote cross-border transfer of knowledge and best practices amongst Member States in the prevention, diagnosis, and treatment of CVDs. A joint action of Member States, initiated by the Commission, should be developed on CVDs, focusing on collaboration in both the political and private spheres. Progress has been made in opening dialogues among patients and doctors, but it is also important for patients to collaborate with policy and decision-makers on the overall organisation of health systems. Health systems should function without silos for patients to easily navigate them. Dr Beger also called for stronger action from the EC in the digital integration of health registries, as data, registry-based clinical trials, and safety surveillance of new treatments are crucial to improving quality of care.

Prof Fausto Pinto showed his support to further protect healthcare workers, strengthen primary care with a multidisciplinary approach, and improving vaccine equity. Emergency preparedness should have a focus on telemedicine and self-monitoring and should involve patients in the decision-making process. Prof Pinto called for more research and investment in the cardiovascular field, as the pandemic has highlighted how insufficient prevention and treatment of CVDs have significant repercussions on COVID-19 complications, resulting in excess mortality. Therefore, CVD prevention should be a priority in pandemic preparedness plans to enhance health systems resilience. A high level of organisation of the health system and the use of scientific evidence by governments and decision-makers were the two conditions that supported a rapid and resilient response of some European health systems to the COVID-19 pandemic. Data and evidence banks, such as the World Heart Foundation's 'World Heart Observatory', are thus essential in shaping policy implementation. Prof Pinto concluded by calling attention to the wealth of evidence and solutions that are available on CVDs. Therefore, it is now important to translate those evidence and medical knowledge into concrete actions and bringing them to the people. If we use the available resources and implement what we already know, we could avoid a third of deaths in Europe; 2/3rd of which are due to CVDs.

Dr Janneke Van der Kamp referred to the 'three Cs' – COVID, Cancer, and Cardiovascular diseases – as the most pressing issues faced by European health systems. Cancer is being well prioritised; however, further attention to the burden of CVDs is essential, as they are the biggest killers in the EU. The three C's are interconnected, yet CVD's receives less attention than COVID and Cancer by policy and decision-makers. The biggest issue in CVDs is the existence of bottlenecks preventing patients to be aware of prevention programmes, treatment therapies and existing tools. CVDs require collaborative working, as one player alone cannot solve the CVD challenge without the support of other actors. Public-private partnership (PPP) will have the biggest impact on a disease that has the highest mortality rate in Europe. PPPs are challenging to develop, but once joint objectives and a win-win proposition have been identified, it is possible to work together and have a strong and positive impact on CVDs and inequalities. One example is in the UK, where Novartis and NHS England have come together to specifically address hypocholesterolaemia, a key risk factor for CVDs. A few years prior to COVID, NHS England identified CVDs as a top political priority and at the same time, Novartis had developed an innovative treatment that could cut HDL cholesterol in half. The partnership started by establishing the joint objective of treating 300,000 high-risk patients in 3 years. Together, NHS England and Novartis worked on how to identify the patients and efficiently bring the treatment to them. Dr Van der Kamp further recognised that political prioritisation and commitment is crucial and called for the creation of an EU CVD plan with actions that can be drilled down and implemented at country level.

Dr Filipe Macedo recognised that although COVID has tropism for the elderly, life expectancy continues to increase in Portugal. This comes with increased risks of heart failure, degenerative valve diseases, and coronary diseases. Primary preventions and their positive impact on mortality rates for coronary heart diseases should be emphasised. The priorities for CVD treatment and prevention in Portugal are: (1) recovery of waiting lists, (2) uptake of digital consultations and innovations, (3) improvement of the population health literacy levels, focusing on prevention, and (4) the use of Green Roads – an initiative supporting the Portuguese population to recognise the importance of accessing emergency rooms for immediate treatment. Dr Macedo further underlined that although Portugal might have better outcomes in mortality, it has worse outcomes in morbidity due to the growing costs of medical interventions and technologies. To reduce rising medical costs, the European Commission needs solutions that are more easily adopted by Member States, considering variations in GDP, and health spending. Public-private collaborations, such as the one implemented in the UK, are needed to support Members States to enhance population health and the quality of care on offer; and more specifically to support the future of cardiology, which will include nanotechnology, genomics, and tissue engineering.

The session ended with the panel agreeing that to fight this silent pandemic, it is essential to have political willingness and support, as well as more Public Private Partnerships to bring the available solutions to patients and the population.

Recommendations

- More research and better investments are needed as CVDs are the number one cause of mortality and morbidity in the world.
- Sharing best practices in prevention, diagnosis, and management of CVDs and transferring knowledge amongst European Member States is essential to tackle cardiovascular diseases.
- Political commitment is required, and work is needed to translate evidence and medical knowledge into concrete actions.
- Several solutions for the prevention of CVDs are available but there are difficulties in effectively bringing them to the people. Public private partnerships are beneficial as they help to better respond to the growing burden of CVDs and provide adequate care for cardiovascular patients.

Take Home Messages

- The ‘Three C-s’ - COVID, Cancer, and Cardiovascular diseases - are the most pressing issues faced by European health systems.
- The role of the EU needs to be fostered as the pandemic has shown that diseases, infectious and non-communicable, are not impeded by EU member states’ borders.
- In Europe, countries with leaders that used scientific evidence to lead their decisions had a better understanding of the situation and therefore, a better response.
- A comprehensive EU response and stronger policy engagement at a European level are needed to address the increasing burden of cardiovascular diseases and ensure that citizens can live longer and healthier lives.
- If all available resources were used, and if we implement what we already know, one-third of deaths in Europe could be avoided. Two-thirds of these deaths are due to CVD.

The WHO framework and partnership working

Session organised by the Good Governance Institute (GGI)

Speakers: **Jacque Mallender** (Economics By Design); **Lena Samuels** (Chair, South Central Ambulance Service NHS Foundation Trust; Chair, Hampshire and IOW ICS, Southeast Regional People Board, Council of the Association of Ambulance Chief Executives; Independent Chair, Hampshire and Isle of Wight ICS)

Moderator: **Stephen McCulloch** (Director of Communications, Good Governance Institute)

Summary

The session discussed the global phenomenon of integrated care and presented an example of an integration model. Integrated care is a transactional movement, adopted as a model by the WHO in 2016, which consists of ensuring that individuals are receiving continuative healthcare. Rather than being person- or patient-centred, integrated care is people-centred and thus focuses on population empowerment. As shown by Ms Jacque Mallender, the adoption of integrated care models yields evident benefits in various areas, including the improvement of patients' and their families' experience of care, and the improvement of population health. It also includes the reduction of health inequalities for communities; the experience of care delivery for healthcare professionals; and lastly improvement of operational efficiency of the whole healthcare system. Although no single model of integration exists due to the heterogeneity of the sector, there is consensus around the design principles.

In 2010, the World Health Organization (WHO) issued a framework for partnership working to guide the WHO assessment of and decisions concerning potential engagement in different types of health partnerships. The NHS has already adopted the WHO framework when making partnership decisions. The framework is organised around five pillars:

1. Engaging and empowering people and communities.
2. Strengthening governance and accountability.
3. Re-orienting the model of care.
4. Coordinating services within and across sectors.
5. Creating an enabling environment.

Communities must be informed and mobilised, as well as consulted and involved in the integration process through a close collaboration with community leaders. At the same time there is a need for a change of mindset in governance. In fact, the transition to participatory governance relies on the development of a culture of stewardship on the part of leaders, of intersectoral collaboration, and of decentralisation and devolution.

The re-orientation of the model of care is a critical challenge since the clinical workforce shows a certain resistance to change. This resistance arises because professionals have been trained to focus on a specific area of expertise and must now move towards a collaborative framework with multidisciplinary teams that reinforces primary and community care. For this to happen, there must be a coordination both at a central level, with leaders committed enough to the endpoint of this shifting, and at a peripheral level, with involvement of population and patients in the decision-making process while acknowledging that a central level of coordination for care is needed. There must also be an enabling environment with an adequate digital infrastructure that grants information delivery and integration, as well as time-sparing procedures. In fact, all potential barriers in the regulatory framework must first be removed, and funding and payments models must grant resources so that the workforce can maintain a high level of care services. When thinking about how to apply the framework, one must first consider the actual situation, since it is a complex adaptive system. Organisations are relatively independent and driven by many different factors. We should aim to maintain the basic rules as simple as possible and focus on culture and shared purpose, because these will provide the foundations for evolving the healthcare system for the future.

Ms Lena Samuels presented the experience of developing an integrated care model in England with the aim of facing the big challenge underlined by the NHS Long Term Plan of 2019: eroding health inequalities by delivering transformation and value for money. The plan focused on working differently through a new service model; working on prevention and inequalities; improving outcomes and quality of care; ensuring that healthcare professionals get the resources to work better; using data and technology efficiently, and; generating value for money to get the most out of tax payers' investments.

The basic assumption for this change of mindset is that the socio-economic status of a person influences health and healthcare service access. There is therefore a need to integrate health and care, co-design the system and treat the patient as a citizen. This would challenge the *status quo* and require leaders to change their mindset to be more responsive and effective. It is also important to consider that the legislation must evolve and adapt to the new needs in order to make the change. The movement towards the new model, which will be adopted in England by April 2022, must ensure that the following is addressed: re-think and re-shape the system architecture; re-define the new leadership appointments; identify a new governance infrastructure to be more transparent and accountable, and engage patients, citizens and all stakeholders in the change.

People in positions of leadership must guide the change and face important challenges to understand what behaviours are required for an integrated future; how to change from being transactional and competitive to being more transformational and collaborative; and what incentives could be given to people to commit to this much-needed change of model.

While it may seem that in a participative governance model there is a potential conflict between the rules coming from the top and the different contributions coming from many directions, this is not the case. This is because it is a framework where the central level must have good methods to analyse the needs and give local leaders and stakeholders the tools to develop specific strategies to address those problems. The integrated system enables to evaluate where the resources need to be and to send them directly there. Independently from the model of cooperation an integrated system adopts, it is fundamental to find the most direct line of accountability with local community in order to reach it effectively and meet its real needs.

Alternative payments models are also being taken into consideration, especially after the pandemic. In England the discussion started from how to implement a blended structure in secondary care; after the COVID-19 pandemic the discussion is focusing on a more ambitious objective: to shape integrated care in a capitation approach to ensure equity and access based on needs.

There has been a paradigm shift that moved the system towards integrated care, and even if not, every citizen needs a case manager, and most citizens have variable interactions with the system, there is a need for a system that looks at the life cycle of the population in an integrated approach. Furthermore, if a citizen accesses this integrated system for a specific reason, the system itself can help discover new needs both in terms of health care and social care. People must be empowered to meet their needs. They need to be guided through the process, in order to know specifically how and when to act for a specific need. Social prescribing can have an important role to link people to health workers.

When evaluating and producing evidence of the results of a given project implemented in integrated care, one should focus on the real impact that action had on people’s lives and their satisfaction with the new experience. Probably a more realistic approach, with real life examples, rather than a scientific approach can resemble the real effects of the new implementation on the system and on patients' satisfaction.

Recommendations

- Communities must be informed and mobilised, as well as consulted and involved in the integration process through a close collaboration with community leaders.
- Coordination both at a central level (leaders) and peripheral level (population & patients) is needed to take decisions and ultimately re-orientate the model of care.

Take Home Messages

- Integrated care is a transactional movement and focusses especially on the empowerment of the population.
- Integrated care models lead to the improvement of the experience of care for patients and their families; of population health and reduction of health inequalities for communities; of healthcare delivery for healthcare professionals; and of operational efficiency of the health care system as a whole.
- When thinking on how to apply any frameworks, one must consider the actual situation, since it is a complex adaptive system. While there is no agreement on a single model of integration, there is consensus around the design principles.
- Leadership has the most important task in guiding the shifting and re-orientation of the model of care and must change from being transactional and competitive to being more transformational and collaborative.
- A culture of integration/cooperation and shared purposes will provide the foundations for evolving the healthcare system for the future.

ABSTRACT SESSIONS

GOVERNANCE AND LEADERSHIP

PERSON-CENTREDNESS AND CARE INTEGRATION

MANAGING THE DIGITAL TRANSFORMATION

IMPROVING HEALTHCARE ACCESS AND OUTCOMES

ENVIRONMENTAL SUSTAINABILITY OF HEALTH SERVICES

HEALTH WORKFORCE

Healthcare policies

Speakers: **Dr Axel Kaehne**, Edge Hill University, United Kingdom; **Ms Kendra Pyne**, University College London, United Kingdom; **Prof Milena Vasic**, Institute of Public Health of Serbia, Serbia; Faculty of Dentistry, Serbia; **Dr Paulien Vermunt**, Vilans, Centre of Expertise for Long-Term Care, The Netherlands.

Moderator: **Prof Alexandre Abrantes**, Escola Nacional de Saude Publica, Portugal.

Summary

Prof Milena Vasic started the session by providing insights into a multisectoral approach strategy that has been adopted at a local level to try to address the specific characteristics of each municipal environment in Serbia. The National Strategy of Public Health supports the improvement of health, prevention and achievement of a good quality of life: the focus is to achieve equity in health by aiming for sustainable development. In Serbia, there is a network of Institutes of Public Health guided by the National Institute of Public Health of Serbia (IPHS). The framework of multisectoral collaboration in supporting local activities is composed by a central Local Government Unit that must collaborate with various stakeholders, both at a national and at a local level. Even if the framework of collaboration has been developed, there is no systematic approach to solve the problem of inequalities at a municipality level. Therefore, results must be reached by developing specific project activities involving all stakeholders. The main challenges that must be faced at municipal level in implementing a National Public Health strategy are low awareness of decision-makers on the importance of health promotion and equity; restrictive financial planning and budgeting for these activities; lack of human resource capacities and the evaluation of outcomes implemented public health programs; and absence of a systematic approach.

For Prof Alexandre Abrantes the choice between vertical and horizontal multisectoral approaches is not whether to always choose one over the other, but that the choice needs to focus on the problem itself. For some complex unclear problems, a horizontal multisectoral approach gives the best answer; for problems that are clear and for which the technology can help directly, the vertical approach gives fastest results. The other main theme is top-down vs bottom-up approaches, and what is the role of the central and the local level.

Ms. Pyne’s research investigated the relationship between culture and policymaking which ultimately provides a substantive theory of cultural impact on healthcare policy reform. The research is confronting the US and Japanese healthcare systems and their cultural differences to determine how these differences affect policymaking and resource allocation. These healthcare systems are considered two of the best in the world, although there are big differences in terms of healthcare accessibility, affordability, and equality. The research has been developed in two distinct ways: 1) by using the realist review method, to evaluate if there is a cultural implication on healthcare policy and resource allocation and decision making; 2) by in-depth interviews, to determine the true cultural impact on health policy, resource allocation and decision-making using Hofstede's Cultural Dimensions Theory. Hofstede's cultural dimensions theory is a framework to understand the differences in culture across countries and to discern the ways organisations operate across different cultures. In this case, the framework can help to analyse the determinants of the differences within the policy sector and help to create sustainable, fair, and efficient policy making. The analysis focused on different areas of interest that can redefine the process of policy making, giving the stakeholders an awareness of cultural implication on policy making and enabling them to make oriented decisions towards best healthcare.

All the international organisations, as pointed out by Prof Abrantes, tried for many years to introduce new general concepts to be applied as a main guideline in developing new strategies for global health and healthcare sector reform. However, the implementation of these concepts in the various countries has been heterogenous. It is difficult to apply concepts developed for a certain context to any other context because the determinants are multiple (demography, socioeconomic status, investments, etc.) and it is impossible to consider them all when generalising a concept.

When trying to achieve the best healthcare system through good healthcare policy strategies, an important factor to be considered is the role played by healthcare professionals in delivering services. One important aspect to consider is the continuous evaluation of healthcare professionals’ skills. Dr Axel Kaehne illustrated the work he did for NHS England. The regulatory oversight of clinical practice in England uses peer review as a fundamental instrument to revalidate clinicians. The questions they tried to answer for NHS England have been whether there is one or more model of peer review and how each model is effective in improving services. The work focused not only on answering these questions, but also on developing a theory of change for this process that can be the base to implement a logic model for peer review methods. Dr Kaehne performed a rapid systematic review that showed that there is a great variability of peer review approaches and a lack of clarity on specific components of the approach itself. Furthermore, peer reviews are influenced by behaviours of the involved clinicians, and it is not clear how these social elements intervene in the process. The need to develop verifiable models of change or theories of potential impact is evident and therefore they developed a logical model of the theory of change. They wanted to underline that peer review has an impact on every level of the organisation (individual, team, organisation and system) and identified three main domains: interactions, knowledge exchange and impact. This can be the base for developing a robust theory of change in specific contest (quality improvement, clinical performances), in order to obtain a model of peer review that is effective in health service contexts.

Quality assessment, assurance, enhancement, and accreditation are some of the most difficult problems in the healthcare sector. The use of peer review can be a possible approach to solve these problems, but there are two things to consider: the costs in terms of resources, time and organisational efforts and the disclosure of information obtained. Prof Abrantes explained that the latter is an ethical issue, since after collecting information, organisations must decide whether to inform patients of known differences in terms of health outcomes and/or quality of assistance between facilities. Another important factor to consider is the adoption of such methods by legislation, which is strongly influencing those who see these tools as an opportunity to gain more power. This brings up the problem of independent evaluation, since many interests are involved. Furthermore, these tools can have a drawback, if not clear in the way they are used, their scopes and the consequences of the evaluation itself.

Dr Pauline Vermunt spoke about the support program for quality improvement in nursing homes in the Netherlands. The Dutch government developed the ‘Dignity and Pride program’ to deal with the substantial and continuous growth of the demand and the need for long-term care facilities. The program also intends to address the increasing complexity of the cases requiring long-term care, and at the same time an evident lack of highly skilled personnel to deal with this complexity. Through an integrated approach, the program aimed to improve the quality of care. The coach and the organisation wrote an improvement plan together which started by a baseline analysis that served as guidance and a tool to evaluate the process made in between evaluations. At the end of the process, they wrote a final evaluation report. They then analysed the data to evaluate to what extent the participating organisations were able to realise improvements in quality of care and which interventions, preconditions, and program elements were regarded as essential to drive change. All organisations improved in both indicators after the improvement plan. The qualitative analysis brought up the main outcomes of the program:

- better awareness of quality standards that need to be met.
- systematic monitoring and improvement of care.
- focus on well-being and quality of life of clients (person-centred care).

Prof Abrantes drew attention to two themes regarding this project: the social acceptability of institutionalised long-term care and the risk of setting new standards for this sector. Regarding the first theme it is important to know that the sensibility of people on this topic varies from culture to culture, as there are cases in which both the elder person and the family have preconceptions on the way they can appear by making the choice to use this service. Regarding the second theme, it is important to keep in mind that, even if these works are fundamental to improve the service delivered to patients, they set new standards. Setting new standards can eventually increase costs and pose the system at risk by impeding people to access these services. The main risk is that people drop off the system and rely on alternatives that can be potentially dangerous. The whole quality enhancement process is continuous and involves multiple institutions, reviewers and time, therefore it is a significantly costly process. In the setting of long-term care, it can be beneficial and more efficient to move from the medical model to the well-being model and the quality-of-life model.

Take Home Messages

- A systematic approach should be applied to implement National Public Health policies and strategies and continue strengthening the capacities of local stakeholders.
- Always consider that the determinants of health are multiple and the development of a new strategy or concept for public health needs to be adjusted to the specific context.
- Incorporate cultural awareness into policy making and policy implementation since it is critical for the development of adaptive, equitable and sustainable healthcare for all.
- New or better instruments of quality assessment must be found considering all the implications for healthcare systems.
- Peer review can be an effective way to continuously evaluate healthcare professionals’ skills to ultimately improve the quality of care delivered.
- Person-centred care can be an effective way to increase the quality of the care provided.
- Conducting baseline analysis and using indicators can help measuring the progress made in quality of care delivered.

Improving access to healthcare

Speakers: **Dr Iseult Browne**, Mater Misericordiae University Hospital, Ireland; **Dr Ana Gama**, Escola Nacional de Saúde Pública da Universidade NOVA de Lisboa, Portugal; **Mr Chris Santer**, Primary Health Properties (PHP), United Kingdom; **Assistant Prof Dr Eva Turk**, University of Oslo, Norway; University of Maribor, Slovenia.

Moderator: **Prof Sílvia Lopes**, Assistant Professor, Escola Nacional de Saúde Pública da Universidade NOVA de Lisboa, Portugal.

Summary

Access to care is a major objective of health systems, with healthcare access being one of the most important determinants of life expectancy and quality of life. Evidence suggests that healthcare access is socially patterned against the worse-off, with detrimental consequences on health inequalities. Facilitating access to healthcare implies improving the affordability, accessibility, acceptability, availability, and adequacy of care services. This session highlighted that many subgroups of the population face considerable barriers that impede access to healthcare resources. Presenters highlighted specific cases of medication access, adequate healthcare premises, culturally adapted healthcare, and patient education interventions.

Dr Iseult Browne gave a presentation on cancer care in Ireland. In Ireland the incidence of cancer was estimated to be around 30,000 with over 9,500 deaths in 2018. While chemotherapy is considered the standard of care for many oncological diseases it is associated with high levels of toxicity. PD-1 and PD-L1 inhibitors (PD inhibitors) had demonstrated significant clinical efficacy in a wide range of malignancies while displaying a favourable patient safety profile compared to standard care. Over the past 20 years there has been a change in the cancer treatment paradigm with new indications and approvals for active substances. Given the numerous available and approved treatments questions about affordability have emerged.

The Health Impact Project (HIP) had three objectives. Firstly, to reduce uncertainty and inform discussions on the economic and health impact of innovations in cancer care. Secondly, to support budget discussions for the anti-PD class. Lastly, to allow for future horizon scanning in order to assess the impact of the entire class in the future as patient eligibility increases. HIP is a macro-orientated model with estimates key clinical and economic outcomes of the anti-PD class compared with various standard of care treatments over a five-year period (2020-2024), in eight high incidence cancers. Standard of care treatments included chemotherapy, immunology treatments not belonging to the anti-PD class, and radiotherapy. A targeted literature review informed the design of the HIP in this study. The HIP model was used to estimate key clinical and economic impact of PD's by comparing outcomes from two worlds: World without PD, and World with PDs. Multiple inputs into the HIP came from both a global and Irish setting. The HIP used clinical trial data to estimate the health outcomes of the anti-PD class in Ireland using predominantly phase three trials. Using this data, the implementation of anti-PD's in Ireland is predicated to improve all clinical outcomes. Life expectancy and quality of life improvements were observed with patients living longer in a disease-free state. Improvements come with the benefit of more tolerable treatment for individuals with cancer who experience less adverse events. Additional expenditure required for anti-PD Drugs when put into the context of wider health care expenditures represents 0.32% of total expenditure and 25% of cancer related healthcare expenditures, however accelerated access to anti-PD Drugs would allow for improved patient outcomes in all domains.

Dr Ana Gama discussed a cross sectional study carried out in Portugal on migrants' access to healthcare services. Evidence exists of persistent disparities in healthcare amongst migrants which present challenges to national health systems. Studies document that migrants use health services less than national residents, therefore a better understanding of barriers to care is essential to design effective evidence and migrant sensitive policies ensuring no community is left behind. This study aimed to examine healthcare seeking patterns amongst migrants living in Portugal and factors associated with health seeking behaviours. A cross section survey included over 1,000 migrants from diverse communities who had lived in Lisbon for less than 10 years. Civil society organisations, and migrants' leaders helped recruitment to the study. Over half of the participants were female, with the majority aged between 18-45 years. Most had a secondary education or higher and were employed with two-thirds earning a monthly income of €650. Over half of respondents were documented with just under half originating from a Portuguese speaking country.

Two-thirds of survey participants reported having a healthcare need during the previous 12 months. Of this most sought primary healthcare, followed by seeking urgent hospital care. Despite needing healthcare some participants did not receive it. 10% of respondents choose not to use healthcare or were unable to access a service despite medical need. Analysing patterns of healthcare use over the last 12 months the study found that migrants who had resided in Portugal for a longer period reported more frequent use of healthcare services. In contrast, almost one-fifth of recent migrants reported an inability to access healthcare. In terms of migration status, over half of documented migrants used primary healthcare units compared to groups with non-regular status. In contrast, undocumented migrants were more likely to use urgent hospital services and reported not being able to access healthcare. Reasons for not accessing care included lack of an NHS card, financial constraints, undocumented status, and language difficulties. Efforts have been made in Portugal to design inclusive policies to support migrant access to health care. Further efforts are needed to improve literacy on health rights and access amongst migrants particularly amongst recent arrivals and undocumented communities. It is important to promote equal access to healthcare addressing economic and language difficulties.

Mr Chris Santer spoke about how to deliver value and improve care with primary care estate as there is an opportunity to improve value and care through the primary care estate. 90% of UK NHS contacts take place at primary care level which is the first point of access to care in the UK. In 2018, there were over 300 million primary care appointments compared to 26 million emergency care appointments. General practice doctors (GPs) are private sector contractors in the NHS providing services exclusively under a general medical services or other contract forms. Certain costs are reimbursed to GPs for the provision of services such as premises costs (rent, mortgages). 60% of British primary care practices own their properties with the remaining renting premises. Many doctors practice in older residential converted properties that are not suitable for purpose especially as care has become more sophisticated. A recent survey by the British Medical Association showed that 50% of GPs consider their premises unfit for their current needs, while 20% consider them fit for future needs. A 2015 report estimated that £10 billion will be needed to upgrade primary care premises. The UK government has announced a new budget to construct 40 new hospitals, however no budget is set out for the construction of primary care premises.

A potential solution to infrastructural problems in primary care is using third-party stable, transparent, development, landlords and capital who seek a recurring income return to rent premises to GPs. Under existing legislation, the Premises Costs Directive, GPs would take a lease and rent is reimbursed by the NHS. Other regulations would support GPs to set the rent agreed on the lease while provided primary care access to buildings that would help them attain environmental goals for the health sector determined by the British Government. This model would be replicable across the country including areas of high social deprivation and health care need. Larger purpose-built premises would accelerate the implementation of integrated care within the primary care health system, as demonstrated by the example from Whitstable Medical Practice. It is believed that several steps can be taken to facilitate the provision of integrated care in community settings. These steps include ring fenced allocations for rental reimbursement, structural changes such as the government acting as lessee of last resort. Approaches such as these could release capital investment of between £3-5billion, expand and accelerate the transition to integrated primary care in the UK, support staff retention and cost-effective for the healthcare system.

Slovenia has around 2 million people whereas the Type 2 diabetes prevalence is 7.8 %. Therefore, the government introduced a national diabetes prevention and care development programme where nurses would take over from clinicians or physicians part of disease management for non-communicable cases. The aim of the study by Prof Dr Eva Turk was to investigate what occurred in the 10 years after the first diabetes plan had been implemented. It further analysed what changes occurred in the patient’s knowledge on diabetes as increased health literacy implies more empowerment and autonomy in self-management of disease.

The study design was a cross national survey with a relatively small sample size of diabetic patients. In 2011, the final sample was 179 and in 2020 the sample size was 191. For the survey the researchers used the Michigan diabetes knowledge test which has 14 items with multiple choice. The results showed that in 2011 none of the participants answered all questions correctly which was also the case for the same survey in 2020. In the last 10 years there was almost no change in the patient’s knowledge of diabetes. In addition, education level correlates with the number of correct survey answers. People with a primary education answered half of the questions correctly while those with a university education answered almost all questions correctly. The results also show a slightly improved knowledge in females. In total, the national diabetes prevention and care development programme was unable to empower and educate patients with diabetes. Prof Dr Turk emphasises that the COVID-19 pandemic showed a necessity to find new ways of educating people but also to find access to treatment. In this sense patients can become empowered co-creators of their disease management to reduce avoidable complications and improve their health outcomes.

Access to adequate high-quality care is a key challenge of health systems, which require innovative approaches grounded on the collaboration of various sectors from society, which have the potential to mobilise financial and non-financial resources. In the health sector, innovation cannot be viewed solely as the development of new techniques (drugs, devices, etc) but also as the design of new models of healthcare delivery, which can be boosted by collaborative approaches with initiatives from civil society.

Recommendations

- Slovenia needs more educational efforts to improve knowledge amongst Type 2 diabetes patients and address the age specific needs for the illness. It is recommended to look at the interventions implemented by other countries.

- To improve health outcomes and reduce avoidable complications patients need to be co-creators in their disease management plans.
- Efforts are needed to improve literacy on health rights and access amongst migrants, particularly amongst recent arrivals and undocumented communities.
- Equal access to healthcare addressing economic, language difficulties and health access barrier needs to be promoted.
- A potential solution to infrastructural problems in UK primary care is using third-party stable, transparent, development, landlords and capital. This could expand and accelerate the transition to integrated primary care, support staff retention and be cost-effective for the healthcare system.

Take Home Messages

- The COVID-19 pandemic showed that there is a need for alternative ways to educate patients about their disease.
- Implementation of anti-PD Drugs could improve all clinical outcomes amongst patients with cancer including life expectancy and quality of life. These improvements make cancer treatment more tolerable for patients who also experience less adverse events.
- Migrants living in Portugal are unable to access healthcare due to financial constraints, residency status, language difficulties and insufficient social security documentation. The longer migrants lived in Portugal, the more frequently they visited health care providers. Healthcare access challenges amongst migrants are transferable to other European countries.

Managing the digital transformation

Speakers: **Mr Jon Txarramendieta,** Kronikgune Institute for Health Services Research, Basque Country, Spain; **Dr Daniele Bellavia,** Centre for Health Economics, Social and Health Care Management, Carlo Cattaneo – LIUC University, Italy; **Dr Lucrezia Ferrario,** Centre for Health Economics, Social and Health Care Management, Carlo Cattaneo – LIUC University, Italy; **Ms Petra Kokko,** Finnish Institute for Health and Welfare (THL), Finland; **Dr Clarissa Seixas,** Ecole de Hautes Études en Santé Publique, France; Universidade do Estado do Rio de Janeiro, Brazil; **Dr Ivo Dumic-Cule,** Children's Hospital Srebrnjak, Croatia.

Moderator: **Prof Teresa Magalhaes,** Escola Nacional de Saude Publica, Portugal.

Summary

This session discussed the topic of digital technologies in healthcare, as the employment of digital tools and services in the health sector has increased in recent years and provided examples of how digital health technology can support healthcare systems transition towards a more person-centred and integrated model of care and how telemedicine can improve the quality of rehabilitation services for specific diseases at a lower cost. Furthermore, the acceptability of digital platforms during the pandemic by healthcare professionals was discussed as well as the benefits and drawbacks of using medical technology in detecting skin tumours from the perspective of General Practitioners, and finally information was provided on the knowledge and perception of Artificial Intelligence in radiology.

Mr Jon Txarramendieta introduced the Joint Action on the Implementation of Digitally Enabled Integrated Person-Centred Care (JADECARE). JADECARE started in October 2020 and will run for three years with a budget of €5 million. JADECARE is part of a series of initiatives by the European Union launched to face the challenges of health and care transformation. The initiative aims to reinforce the capacity of health authorities to successfully address important aspects of health system transformation, particularly the transition to digitally enabled, integrated, person-centred care. To achieve this, four successful original Good Practices (oGP) from different countries will be transferred and adopted by the healthcare systems of the participating partners. The four original Good Practices are the following:

1. Basque health strategy in ageing and chronicity,
2. Integrated Care, Catalan open innovation Hub on ICT-supported Integrated Care Services for Chronic Patients,
3. OptiMedis population-based integrated care model, and
4. Region of Southern Denmark Health Innovation Centre.

The transfer of the original Good Practices will focus on customising the original Good Practices and preparing the local environments of the adopting participant countries for their implementation. A three-step implementation strategy will be used for original Good Practices transfer.

Dr Daniele Bellavia introduced the SIDERA^b innovative platform. This is an integrated multi-domain and multi-device system for telerehabilitation designed for patients affected by specific diseases such as Parkinson's disease and Chronic Obstructive Pulmonary Disease (COPD). The need for telerehabilitation technology comes from the demand for rehabilitation services that is constantly increasing, from the high-pressure hospitals' experience and the need to transfer care provided in the hospitals to patients' homes. Therefore, the study was conducted aiming to compare traditional rehabilitation with the SIDERA. To achieve this, a cost-effectiveness analysis and a budget impact analysis were performed, and qualitative interviews with physicians were conducted. The economic results of the study showed that the cost for the new model is significantly lower compared to the traditional one as the new model saves money by using telemedicine. According to Dr Bellavia and considering the healthcare service perspective, SIDERA can bring annual economic savings of more than €18 million. The SIDERA platform also requires investing in training courses and additional hospital meetings. Other predictors related to the acceptability of SIDERA are the ease of using the platform and the good quality results for the treatment of the patients. Finally, Dr Bellavia highlighted that the platform can benefit both the healthcare system and hospitals. Lastly, he mentioned that some public hospitals in the Lombardy region are testing SIDERA to confirm the results of the study and to assess the possibility of using the system in the future.

Dr Lucrezia Ferrario presented the results of a study conducted to investigate the acceptability of healthcare professionals to use an innovative telemedicine platform in Italian clinical practice, called T-CUBE. T-CUBE was designed as a telemonitoring care program offering healthcare services devoted to patients with COVID-19 and patients with specific chronic diseases. To explore the acceptability level, the research team created a specific framework based on the technology acceptance model and a systematic literature review was performed. The results of the study showed that five key factors impact user T-CUBE acceptability. These are perceived usefulness, perceived ease of use, output quality in terms of producing high quality results, image, and job relevance. According to Dr Ferrario, the outcomes of the study showed that both young and older healthcare professionals would effectively use the T-CUBE platform as they understand the positive impact the platform can have on the well-being of the population.

Ms Petra Kokko provided an overview of the healthcare system in Finland. Finland's healthcare system is publicly funded with a small private sector that is highly centralised and municipalities are responsible for providing healthcare. Ms Kokko explained that there have been several attempts to reform the structure of the social and healthcare system in Finland. Therefore, the Finnish Institute for Health and Welfare (THL) was appointed to produce evaluation information on population health and govern the information base. As a result, the National Health Indicators (NHI) were developed to assess the healthcare and social welfare service at a national and regional level. For this reason, THL performed a study to explore whether and how the National Health Insurance indicators are expected to improve the decision-making on public health and welfare. Her study aimed to develop an initial program theory and reveal mechanisms that produce expected outcomes of the indicators and explain how and why these indicators help to improve the health system. Ms Kokko described that the study revealed four expected outcomes such as improvement of national steering and more detailed knowledge on integration, cost-effectiveness, and accessibility of social and health care services. Finally, the study showed that the national indicators are expected to provide a tool for multiple purposes.

Dr Clarissa Seixas focused on skin cancer which in the last four decades appears to be an increasing problem. Dr Seixas informed the audience that accessing a dermatologist in France has become increasingly difficult, waiting times for an appointment can be up to 100 days. For the past 5-6 years a tele-expertise (TLE) experiment has been taking place for skin tumour detection, allowing general practitioners (GPs) to obtain feedback from a dermatologist within 7 days using a smartphone application. Dr Seixas study was set up to understand the benefits and drawbacks of TLE in detecting skin tumours. Therefore, an exploratory study was performed which interviewed 15 GPs from the north of France. The study revealed that GPs believe that TLE has multiple advantages to offer such as fast access to specialised feedback, formalisation of the request to meet with a specialist, eases patient referrals to a specialist who sets a protocol for the patient, lowers patient travel frequency and provides the ability to send medical information securely. One of the drawbacks perceived of TLE use was the lack of functionalities available on the platform. Lastly, Dr Seixas told the audience that TLE is a well-accepted platform in dermatology amongst GPs which enables the best use of medical resources to address patient’s needs.

Dr Ivo Dumic-Cule's study focused on the attitudes of patients and healthcare professionals towards Artificial Intelligence (AI). Dr Dumic-Cule mentioned that especially in radiology, there is a debate and some negative criticism on whether AI will replace the job of radiologists. However, in the last 2 years, radiologists seem to be more open towards the use of AI. Other studies highlight that a lot of physicians are not aware of all available AI possibilities, but physicians show a positive attitude towards them. Dr Dumic-Cule presented the results of a national study performed in Croatia capturing the attitudes of patients and radiologists towards AI. Data was collected through an anonymous survey to avoid age bias. The study had a 45% response rate. The results of the study showed that most radiologists have not received any kind of education about AI and were not involved in any AI-related projects. However, the majority are interested in getting involved and learning more about AI. Moreover, participants working with AI believe that AI should be included in medical curricula as a core course. Finally, participants from all institutions believe that medical education is not following technological developments. The study’s results call for action to develop and implement educational programs dedicated to AI in medical schools’ curriculums.

Digital health technology is an essential part of delivering person-centered and integrated care and has benefits for the healthcare system, patients, and healthcare professionals. However, it is important to consider all possible advantages and disadvantages when integrating them into daily tasks and activities to make sure that these tools are being used in the best possible way. This session focused on the use of digital technologies in healthcare that can provide better quality care, bring about economic savings and mitigate the burden of care that hospitals experience in the provision of specific services such as rehabilitation. Digital technology can be adopted in multiple settings to provide more person-centered and integrated care. Moreover, digital health tools, telemedicine, and AI can be employed to assist individuals living with chronic diseases such as COPD and patients with COVID-19. The success of these innovative initiatives is highly influenced by the acceptability of the healthcare professionals and the patients.

Take Home Messages

- Demand for rehabilitation services is constantly increasing and the pandemic has highlighted the need to transfer care provided in hospitals to patients’ homes.
- From the perspective of healthcare professionals perceived usefulness, ease of use, and output quality in terms of producing high- quality results are important factors for the acceptability of digital health tools.
- Although, many physicians are not aware of all available possibilities from AI they show a positive attitude towards the implementation of AI in clinical settings.

Health workforce

Speakers: **Dr Nour Alrabie**, University of Amsterdam, The Netherlands; Queen's University, United Kingdom; **Ms Cristina Mendes-Santos**, Linköping University, Sweden; NOVA National School of Public Health, Portugal; Fraunhofer Portugal AICOS, Portugal; **Ms Róisín O'Donovan**, UCD Centre for Interdisciplinary Research, Education and Innovation in Health Systems (UCD IRIS) | School of Nursing, Midwifery & Health Systems, Ireland; **Dr Maria Picco**, Politecnico di Milano, School of Management, Italy; **Ass Prof Marco Giovanni Rizzo**, Università Cattolica del Sacro Cuore, Italy.

Moderator: **Ms Laura Cande**, Projects & Policy Consultant, EHMA.

Summary

The availability and quality of the healthcare workforce is key for effective health system performance. To deliver safe healthcare, the workforce must be adequately supported, protected, and equipped. This includes not only the availability of adapted Personal Protective Equipment during the COVID-19 pandemic and beyond, but also psychological safety and resilience training. The shortage of the health workforce is a critical concern. The availability of a qualified and specialised healthcare workforce is key for effective health systems. One solution is task shifting. Presentations in this session covered the themes of task evolution, psychological safety, care integration, digital mental health and performance feedback.

The first abstract was presented by Dr Maria Picco whose research investigated whether there has been an evolution of tasks and responsibilities in the nursing role. Dr Picco provided an overview of how Europe's demographic transition is placing unprecedented pressures on health systems as the burden of chronic disease increases. This context is made more challenging by staff shortages and the public defunding of services. Within this background, the concept of task shifting is debated more, but debate is largely set at a general level and within hospital settings. Task shifting is defined by the WHO as "the rational distribution of tasks among health workforce teams". Task distribution contributes to the evolution of health professionals' roles by enhancement, substitution/delegation, and innovation. Enhancement refers to the extension of roles and responsibilities. Substitution/delegation refers to a transfer of tasks from one profession to another, while innovation refers to the creation of new jobs by introducing new workers or technologies.

Dr Picco's paper investigated whether there was an evolution of nurses' tasks and responsibilities at homecare level. The research used a systematic literature review from 2008 regarding nurses' activities that surpass recognised responsibilities in homecare and to examine the enablers and requirements for this evolution. Initial results showed that research largely concentrates on the Northern European region and that enhancement is the most used form of task-shifting at homecare level. Furthermore, home nurses' roles experience the most role change with the largest increase in activities being care tasks followed by administrative work. The three most important enablers generating task shifting in home-care settings were efficiency and efficacy (desire to reduce costs and improve quality of care), patients' needs (additional tasks are performed due to patient's needs), and staff shortages. Results showed that four requirements are needed for successful task shift implementation: the most important being training and collaboration. While task shift is debated in hospital settings, this research evidenced that task shift is present in homecare. However, although task shifting is present in homecare settings and nurses' roles are evolving, a lack of information on task shifting and its taxonomy remains. Further research is being conducted which is reinforcing the literature results from this research and showing the emergence of new roles.

Ms Róisín O'Donovan defined psychological safety as a shared belief within that team that it is safe to take interpersonal risks such as speaking up when a mistake or near miss has occurred. Psychological safety is related to a variety of concepts. Past research shows that supportive leadership behaviour, interpersonal relationships, and organisational support cultivate a sense of psychological safety within teams. When teams are psychological safe, healthcare professionals take the interpersonal risks needed to engage in effective teamwork and maintain patient safety. Psychological safety plays a particularly important role in healthcare settings as it influences trust, collaboration, decision making, conflict resolution, and quality improvement. Psychological safety has become more important during the pandemic as teams need to adapt to new challenges and make improvement changes to deliver patient care. Despite its important role in teams, psychological safety is often lacking. This research focused on how psychological safety in healthcare teams can be improved. Mixed methods were applied to capture the complexity of the topic. The different methods used highlighted different aspects and levels of psychological safety within case study teams.

Initial findings showed that although survey results indicated a high level of psychological safety, observations and interviews provided contrasting results. While professionals felt confident speaking up on patient safety, they were less likely to engage on other conflict-provoking topics. As psychological safety has a direct influence on improving patient safety, there should be a culture for teams to engage in functional and constructive conflict. Next, despite respondents reported supportive behaviours by team leaders in meetings, low levels of psychological safety were observed within teams. This highlighted that peer support is as important as leadership support within teams. Interventions to improve psychological safety should focus on encouraging all team members to engage in inclusive behaviours and proactive inquiry. Finally, at an individual level, there were wide variations in individuals' experiences of psychological safety within teams. Healthcare professionals attributed their experience of psychological safety to a range of factors including past experiences, and whether issues were safe, and appropriate to discuss within their team. This highlighted the importance of individual interventions, particularly targeting those with feelings of low psychological safety, rather than solely targeting interventions at team level.

Dr Marco Giovanni Rizzo explored the mediating role of the use of performance feedback and the effect of this variable in the link between feedback orientation and performance. Following the introduction of a public management reforms in the Italian public healthcare sector, medical doctors acquired financial responsibilities. The introduction of management control systems (MCS) as part of these reforms aimed to shape decision-making and should have a positive effect on managerial attitude, behaviour, and performance of medical personnel. After the introduction of MCS, international literature highlighted that MCS may be influenced by medical doctors' hybrid identities, as they are managers with clinical backgrounds. Dr Rizzo highlighted research gaps on this topic providing an overview of limitations identified in the literature review. This paper empirically examines how performance feedback orientation affects budgetary performance, and how this relationship could operate using feedback information provided by the MCS in public hospitals. Data was collected via web-based questionnaires and archival data on employee performance appraisal systems. 130 senior medical managers in Italian public hospitals were included in the study reaching a 93% questionnaire response rate. A statistical analysis using descriptive statistics and exploratory factor analysis was conducted. Results showed that there was a positive association between feedback orientation and the use of performance feedback, a positive association between the use of performance feedback on performance, and a positive association between feedback orientation and performance. Results show the importance of positive personality traits in affecting the feedback process within a healthcare organisation. Results add to the mixed results from the literature review on the relationship between feedback orientation and performance. These findings can be applied beyond healthcare settings. Results will support top management to ensure the success of performance management improvement feedback initiatives. In turn, management should develop a feedback orientation approach supporting doctors' positive mental state which will produce positive outcomes on doctors' managerial and budget performance.

Dr Nour Alrabie explored the communication styles of health staff in primary healthcare facilities in France. She visited four healthcare organisations and joined their meals to observe how the staff used their lunch time. In addition to a few organisational lunches, the health workers had numerous informal lunches. The aim of the observation was to investigate what made care integration possible, how the staff communicate, and what the drivers of care integration are. Dr Alrabie concludes that health staff's food habits reflect the way and degree of care integration in their facilities. In addition, she observed that care integration is multidisciplinary between different professionals and doctors. Lunch was the time where an informal discussion could be held about different patients at a round table to search for a joint solution and where a feeling of hierarchy was not as present.

In recent years, several studies have been conducted to determine that the use of digital health can support mental healthcare delivery. In addition, the frequency and cost-effectiveness of the strategy to deliver mental healthcare in different contexts have often been investigated. The researchers noticed that there is limited literature on what implementation barriers have delayed the translation of these interventions to clinical settings. Similarly, literature rarely discusses how mental health professionals use digital interventions, their perspectives, practices, and the factors impacting digital adoption. The aim of the study of Ms Cristina Mendes-Santos was to characterise the best practices and perspectives of professionals to understand implementation processes of digital mental health as well as factors that could hinder their adoption.

For the qualitative study a sample of Portuguese mental health professionals from different settings, including psychiatrists and psychologists, were recruited. They were interviewed about their knowledge of digital mental health, their experience using interventions and their attitudes towards the interventions. Data collection was conducted between November and December 2019 prior to COVID-19. Through these interviews five stages of the Digital Mental Health intervention process were identified:

1. Indication evaluation
2. Therapeutic contractor motivation
3. Digital psychological assessment
4. Technology setup and management
5. Intervention's delivery and follow-up.

Results showed that professionals feel duty-bound to support their clients. This was an important driver to uptake digital health interventions. Digital mental health interventions low threshold accessibility and convenience were also acknowledged as important drivers. On the other hand, the lack of structure of intervention frameworks that present clear guidelines for translation to practice and lack of training on the technology were important barriers. This barrier compromises professionals' perception of control over the intervention process. Hence, if support is provided to professionals and allows for the translation of guidelines to clinical practice during implementation interventions are easily adopted and are not burdensome. Lastly, interventions need to be accompanied with training programmes. Therefore, professionals require training to deliver interventions and to develop them further to maximise their potential.

When looking at psychological safety questions were raised by the audience on differences registered between health professionals, namely nurses and doctors. Ms O'Donovan clarified that there was no significant difference between health professionals. However, the research indicates feelings of psychological safety depend on the length of time they were in a team. Professionals were more like to feel psychologically safe in uni-disciplinary team than within an interdisciplinary team.

In response to questions on the practical and theorical implications her research, Dr Picco said that gathering enhanced knowledge on task sifting can guide managing teams in their investments in nurses' training and education in communication and help inform policymakers in the recognition and legal implications of new roles.

Ms Mendes-Santos told the audience that the study did not identify whether a link exists between the level of training for digital tools and professionals' motivation to provide this service to patients. As digital mental health in Portugal is in a stage where most of the professionals' self-train or working in digital mental health using a trial-and-error kind of approach. However, the COVID-19 crisis brings an opportunity to easily assess united needs of these professionals regarding training and digital technology that in the past was very hard to assess because most professionals did not use the digital technology.

As societal evolution occurs and unprecedent events strike that quickly and dramatically affect society, the health workforce must rapidly change and adapt to firstly safeguard patient wellbeing, and secondly to safeguard their professional existence. More than ever, trust, communication and well-equipped management is key to ensure the future of health systems but also to guarantee access to healthcare to patients and ensure the best clinical results. Healthcare is provided by people to people but sometimes healthcare workers are left with the hopeless feeling that they are 'working together alone'.

Recommendations

- Create guidelines for psychological safety evaluations in healthcare facilities.
- To successfully implement digital mental technology, professionals need adequate training to enhance their knowledge.
- Psychological safety has a direct influence on improving patient safety. Therefore, interventions which improve psychological safety should cultivate norms for teams to engage in functional and constructive conflict. These interventions should focus on encouraging all team members to engage in inclusive behaviours and proactive inquiry.
- Healthcare management should develop a feedback orientation approach to support positive mental health as this will produce positive outcomes on managerial and budget performance.

Take Home Messages

- Implementing Digital Mental Health can be a beginning to ensure access to cost-effective mental health care.
- Sharing workplace meals can contribute to better work relationships, better functioning teams, support the exchange of professional experiences, facilitate critical discussion on patients' needs thus enhancing patient care.
- To evolve home care nurses' roles training and collaboration is of utmost importance to ensure task distribution is successfully implemented between professionals.

Person-centred care

Speakers: **Dr Francesca Donofrio,** University of Bari Aldo Moro, Italy; **Ms Isabel Farina,** Management Engineering Department, Politecnico di Milano, Italy; **Ms Bronagh McGuckin,** Newcastle University, United Kingdom, **MSc Cristina Mendes-Santos,** Linköping University, Sweden; NOVA National School of Public Health, Portugal; Fraunhofer Portugal AICOS, Portugal.

Moderator: **Prof Sónia Dias,** Escola Nacional de Saude Publica, Portugal.

Summary

This session focused on person-centred care (PCC) which is presented as an essential part of transforming the healthcare system and adopting a viable and holistic approach towards patient's care. PCC puts the patient at the centre, involves the patient in the decision-making and the planning, developing, and monitoring of their care to ensure that their needs are met. The speakers presented multiple ways through which PCC can be achieved in different settings and the session adopted an international perspective as the speakers described initiatives and studies performed in Italy, the United Kingdom and Portugal.

Dr Francesca Donofrio mentioned that European health systems deal with challenges related to the sustainability of healthcare, and to be sustainable, need to adopt a wide understanding of sustainability considering economic, environmental, and social aspects. Dr Donofrio presented the results of her study performed to explore how gender impacts social sustainability in healthcare. A systematic literature review (SLR) was conducted to explore how gender can be a driver of healthcare sustainability and emphasise the importance of encouraging prevention, education, and information programmes to achieve the sustainability goal. The SLR included a seven-step evaluation process and 20 articles were included. This SLR is the first to draw connections between gender medicine and health system sustainability. However, the trend of literature on the subject is increasing. Dr Donofrio argued that sustainable healthcare combines three key factors: provision of appropriate and adequate care to patients, cost coverage, and the environmental impact of healthcare professionals' work. Finally, Dr Donofrio highlighted that gender medicine puts the patient at the centre of care and distinguishes the difference between genders not only pathologically but also culturally. Therefore, the issue of gender should be central in clinical services. This new perspective requires a shift in the cultural paradigm as well as in the organisation of clinical services in the different healthcare systems.

Ms Bronagh McGuckin focused on dentistry services in the UK and specifically on how public preferences can be incorporated into resource allocation decisions in NHS dentistry. Ms McGuckin explained that NHS dental care is publicly funded and is subsidised by taxpayers. 3.5% of the total NHS budget is dedicated to dentistry. In publicly funded healthcare systems, there is an increasing focus on involving those who subsidise the system in decision-making. However, this can be a challenge especially when public opinion conflicts with the opinion of decision-makers. In that case, one may ask, what should decision-makers do? Ms McGuckin's RAINDROP study proposed a way to include public preferences in resource allocation decisions. A panel was formed including commissioners, dentists, and patient representatives responsible for tasks such as defining the current spend criteria, potential investments, and disinvestments areas, and selecting and defining evaluation criteria. Moreover, a survey was performed aiming to capture the societal preferences on the willingness to pay for different dental interventions. Later, interviews were conducted with the people forming the panel, and focus groups were created. Ms McGuckin described the results of the study according to which the public should be involved in decision-making but not have the final say. Moreover, including public opinion was seen as positive but needs to be done with caution. A concluding remark of the research was that there is a need to assure that the public is informed before taking any decisions.

Ms Cristina Mendes-Santos raised the issue of breast cancer as one of the most diagnosed cancers worldwide since 2020. Further, she highlighted that due to improvements in cancer management, early detection, and innovative treatments, survival rates have increased. However, health-related quality of life for breast cancer survivors is characterised by difficulties associated with the light effects of treatment and various psychosocial problems such as anxiety and depression. This appears to be the case in many treatment settings due to a psychosocial treatment gap for breast cancer patients. Virtual models of care can be promising to deal with these issues and Digital Mental Health is a promising approach for breast cancer survivors. According to Ms Mendes-Santos little is known about adoption predictors and the attitudes about the acceptance of patients towards Digital Mental Health particularly in Portugal. Therefore, her cross-sectional study was conducted by recruiting patients from five different hospitals in Porto in which several clinical and socio-demographic aspects were assessed. The study had 336 participants with a median age of 53 years. Moreover, most participants had access to the internet and had no support to navigate online. On average, attitudes toward digital mental health were neutral. In addition, positive attitudes were statistically significant of patients who were associated with increasing depressive symptoms and poorer emotional, cognitive, and physical functioning. However, all these associations between attitude and their socio-demographic were weak and not significant. Moreover, no significant associations were found between the attitude of patients and their socio-demographic variables. Finally, Ms Mendes-

Santos explained that patients seem to accept Digital Mental Health but their knowledge about such interventions should be increased. This could positively affect their acceptability.

Ms Isabel Farina raised the issue of youth mental health which has been challenging healthcare systems for the past 20 years and became an emerging issue during the COVID-19 pandemic. Ms Farina mentioned that 30% of people aged between 16 and 24 years old are suffering most from loneliness and social isolation. Moreover, this age group experience a higher impact of health inequalities as they have access to fewer resources. The access of youth to mental health services is very low. A promising approach to this challenge is Social Prescribing, which is a non-clinical intervention, connecting different sectors while recognising the individual and promoting health and wellbeing. Ms Farina presented the results from her study review aiming to compare Social Prescribing to other existing community-based interventions. A systematic search with keywords was performed to target specific diseases. The study results showed that one of the biggest differences between Social Prescribing and other models was the focus and the aim of each model. This is the case because other interventions have a specific focus and are part of statutory services in the psychiatric health sector. Instead, Social Prescribing is not only interested in positioning in the psychiatric field, rather it aims to tackle the social determinants of health. The study's outcomes also showed that Social Prescribing can be seen in three different ways: as a new alternative model that shifts the focus on social determinants but also as an extended model meaning it can be part of the early and preventive system by integrating the causes younger populations encounter and as an integrative model with existing services. Finally, Ms Farina highlighted that there is need for further research on Social Prescribing mental health services for young people such as further exploration of methods and tools for youth participation.

During question and comments Dr Donofrio explained that a managerial approach to gender medicine is related to the sustainability of healthcare in terms of effective management of healthcare spending. She highlighted that only through this gender approach is it possible to ensure the centrality of the patients and consequently healthcare spending to be based on criteria of equity, transparency, and effectiveness. Ms McGuckin elaborated on the prevention of dental care. She mentioned that dental care is the most preventable disease and a shift from treatment to prevention would save millions of pounds from the NHS. However, dentists do not have the incentives to spend time with patients, for example, to explain how to properly wash their teeth and no money is being spent on prevention at present. Finally, Ms Farina explained that Social Prescribing can be implemented in non-anglophone countries lagging in implementing a social model of illness and she gave the example of Portugal. Moreover, since Social Prescribing is a bottom-up system, every country can find ways to connect different sectors that currently don't communicate.

This session focused on person-centred care as an essential part of transforming the healthcare system into a more sustainable entity. Person-centred care can be achieved in many ways and different settings. Healthcare systems worldwide should consider employing initiatives towards more person-centred care to achieve the delivery of better quality of care and better health outcomes. Moreover, a person-centred approach can be cost-effective and help systems to be more sustainable.

Take Home Messages

- To be sustainable healthcare systems should adopt a wide understanding of sustainability that encompasses economic, environmental and social aspects.
- Sustainable healthcare requires the combination of three factors: provision of appropriate and adequate care to patients, institutions' ability to cover all costs, and all professionals to consider the environmental impact of their work.
- Gender medicine puts the patient at the centre of care and distinguishes the difference between genders not only pathologically but also culturally.
- Social Prescribing is not only interested in positioning in the psychiatric field, and aims to tackle the social determinants of health.

Health management and COVID-19

Speakers: **Dr Giovanni Gaetti**, Sovraintendenza Sanitaria, Gruppo San Donato, Italy; **Dr Anne Girault**, EHESP, France; **Prof Damian Greaves**, Professor at the Department of Humanities and Social Sciences at St. George's University; **MA, BA Lukas Kerschbaumer**, Management Center Innsbruck, The Entrepreneurial School, Austria; **Dr Jessica Lubin**, Researcher, Good Governance Institute; **Dr Abigail Menke**, Saint Louis University – Heartland Center for Population Health and Community Systems Development; **MSc Joana Seringa**, Centro Hospitalar Universitário de Lisboa Central, E.P.E., Portugal; NOVA National School of Public Health, Universidade NOVA Lisboa, Portugal; **Dr Sofie Van Steendam**, Master student Healthcare Management and Policy, KU Leuven.

Moderator: **Prof Julian Perelman**, Escola Nacional de Sude Publica, Portugal.

Summary

This session discussed some of the challenges encountered in health management during the COVID-19 pandemic. In particular, the session highlighted that during global shocks such as pandemics, health systems share similar challenges even if the specific context might differ.

Dr Joana Seringa shared the analysis she carried out to evaluate the impact of costs of COVID-19 patients' hospital admissions on the Portuguese healthcare system. Health systems and institutions had to adapt to respond to the specific needs of COVID-19 patients, while ensuring the diagnosis and treatment of non-COVID patients. The analysis evaluated the costs of therapeutic and diagnostic procedures as well as medication consumptions for each episode. In addition, the costs of clinical consumables, personal expenses and indirect costs were estimated by dividing the total cost by the number of episodes, giving a weight based upon the length of stay. The analysis showed an average length of stay of 13 days and a cost of admission of around 8,000 euros with a high variability among cases. 21 patients had a cost of admission greater than 20,000 euros, which accounted for 44% of the total costs. COVID-19 admissions represented a considerable financial burden for the Portuguese financial system. Moreover, the analysis estimated that, considering 55,000 to 67,000 patients were admitted in 2020, the health system could have treated 187,231 non-COVID patients with the same expenses. This confirms that there is a need for financial reinforcement.

While dealing with the COVID-19 pandemic, as with any other aggressive infectious disease, it is important to consider the time interval before the hospital admission of the patient and focus on preventive measures. During the winter season one of the major factors impacting the spreading of the virus has been tourism. The research of Dr Lukas Kerschbaumer focused on the management of the pandemic by community leaders during winter tourism season in Austria. He evaluated how community leaders aligned personal and companies' interests to the collective interest of mitigating the spreading of SARS-CoV-2. He used literature review and focus groups to develop a survey administered to selected participants coming from various areas of the winter tourism sector. The results confirmed that the high competition in this sector prevented stakeholders to act in favour of possible solutions to mitigate the spreading of the virus because they feared it could compromise their capacity to offer a competitive service and make profits. The respondents wanted to have a clear structure of regulations and, during the pandemic, without a strong legislation they considered economics interest rather than collective interests. Ultimately, these stakeholders were not proactive and did not fully acknowledge their crucial role in leading a way out of the pandemic and waited for clear regulations that never came to light. Since stakeholders tend to act in their own economic interests due to competition and economic pressure, it is favourable to enact rules and laws that must be complied with.

Facing a pandemic, health management needs to face many challenges and find the best way to solve unprecedented problems. Dr Anne Girault illustrated the factors that determined the success of patient inter-regional transfers during COVID-19 in France. The high number of hospitalisations and the saturation of ICUs needed a rapid answer. The French healthcare system managed to do more than 660 evacuations in 2020. The research aimed to identify the factors contributing to the success of this massive action in response to pandemic. The results showed that three factors allowed the system to work:

- the specific context of the transfers: since there were no economic barriers or constraints, procedures were lightened, and healthcare professionals were collaborative and driven by shared goals.
- the experience, both at an individual and an organisational level, since experts were mobilised, and people were well trained prior to overseeing the processes.
- the collaboration both within organisations and among stakeholders.

These principles must guide any future crisis response in order to have a fast, well-organised and prompt response to overcome any obstacles to patients' care.

The COVID-19 pandemic also had a severe impact on the integration of health and social care and worldwide. A great variety of examples of partnership working in these fields during the pandemic may had both benefits and harms. A multinational analysis conducted by Dr Jessica Lubin, Dr Abigail Menke and Dr Sofie Van Steendam investigated the landscape of health and social care integration in three different regions: the US, the UK, and Belgium, and the impact of the COVID-19 pandemic in partnership-working between health and social care organisations. The participants were healthcare and social care organisation leaders. Through a qualitative analysis they showed that the pandemic had an impact across groups, but identified three main groups of results, depending on the level of transversality of the themes: common, divergent and independent themes.

While almost every stakeholder was sure that most of the changes in organisations and collaborations can be considered permanent and that the most profitable partnership-working were project-based, they also had different experiences that brought up both divergent and independent themes. In the UK, the pace of work appears to have been increased more than in the other two countries, and unlike in the other two areas, competition between organisations increased rather than decrease during the pandemic. In Belgium, doubts on the longevity on COVID-19-oriented partnerships were stronger since there was a significant increase in project-based partnership working which tends to be short in duration and outlook. Moreover, the lack of leadership was a resistor of effective partnership working, while in the other areas it was not the case. In the USA partnerships are often informal and rely on individuals' connections; therefore, the loss of institutional knowledge strongly undermines partnerships. Furthermore, partnership working in the USA, differently from UK and Belgium, was driven by pressure from local politics, so political will, political opportunity, and political regulations pursued partnerships between organisations. In general, the main driver for developing integration is a sense of urgency, and the COVID-19 pandemic created momentum. Another important driver is the existence of previous partnerships that lead the way and helped new partnerships to be created.

One of the main challenges that healthcare management had to face in the last year was the organisation of a massive COVID-19 vaccination campaign. Dr Giovanni Gaetti was involved in the planning of a vaccination centre in Novegro (Milan, Italy) and shared the pillars that drove their work: safety, efficiency, comfort and, hospitality. The vaccination centre was developed as follows:

- to guarantee a safe environment, a senior doctor was always present to offer support and second opinions to junior colleagues, as well as an anaesthesiologist and an ICU nurse. Furthermore, specific shock rooms were created for treating emergencies.
- to keep efficiency, clear protocols and procedures were developed, giving a clear line of command and identifying potential threats to process fluidity. By doing a bottleneck analysis, a multiple modules design was adopted, so if a problem in one module occurred, the others could be used.
- to offer a comfortable environment enough waiting areas and seats were ensured, and volunteers from various associations provided hospitality and help.

The model worked smoothly and performed more than 300,000 vaccinations without major concerns and a high customer satisfaction rate with around 190,000 answers (98% positive).

Prof Damian Greaves focused on how the COVID-19 pandemic is a great occasion to rethink health management and leadership, since it exposed most of the vulnerabilities and distortions masked by the system itself. In fact, health systems are dynamic, complex and unpredictable, because they are uncertain environments impacted by both internal and external elements. There are a few challenges that the system must face as well as problems that undermine the opportunity to achieve better leadership and management of healthcare. The system needs to answer inadequate capacities and financial constraints, rethink the deployment of the healthcare workforce after the COVID-19 pandemic and redefine service delivery models. To meet these needs, these problems must be solved:

- Lack of effective leadership and coordination.
- The decision-making strategy, that is basically intuitive and rely on experience, assumptions and associations of ideas instead of evidence-based reasoning.
- Resource shortages.
- Legislation, regulations and policy that are mostly outdated.
- Lack of integration across agencies.
- Structural inequities and inequal allocation of power and resources.

What the COVID-19 pandemic brought to light is that healthcare systems need relatively broad guidelines and substantial autonomy to respond to change. The systems rely on leaders and followers that must change in a timely and coordinated manner, since they live in complex systems built for adaptation, flexibility and learning. These parameters must be considered to give a prompt and full response to problems. Therefore, leadership and management in healthcare must consider variability, the need for balance between standardisation and innovation, and the need to move towards a more agile and resilient structure.

Recommendations

- During a pandemic, introducing rules and laws can push stakeholders to act in the collective interest of the population rather than in their own financial interest.
- To be more resistant healthcare systems should be built around the principles of adaptation, flexibility and continuous learning.

Take Home Messages

- Every single experience count, and every health system needs to face the fact that often many challenges are shared independently from the specific context.
- There is a need for financial reinforcement and support, as COVID-19 has had a significant financial impact on healthcare systems.
- Health systems are dynamic, complex, and unpredictable because they are an uncertain environment impacted by both internal and external elements.
- The COVID-19 pandemic underlined pre-existing vulnerabilities of healthcare systems such as the lack of leadership, resources, integration, and evidence-based reasoning amongst other.
- The system needs to answer inadequate capacities and financial constraints, rethink the deployment of the healthcare workforce after the COVID-19 pandemic and redefine service delivery models.
- Successful collaboration and cross-borders transfer of COVID-19 patients can happen when there are no economic barriers or constraints, when procedures are lightened, and when healthcare professionals are motivated by shared goals.
- The COVID-19 pandemic created momentum for several partnerships between health and social care to emerge.
- Providing a safe, efficient, and comfortable experience in COVID-19 vaccination centres leads to a high rate of satisfaction amongst visitors.

PHD Session

Speakers: **Ms Rachel Gifford**, University of Groningen, The Netherlands; **Mr Olli Halminen**, HEMA Institute, Department of Industrial Engineering and Management, Aalto University, Finland; **Dr Carol Hilliard**, Children's Health Ireland at Crumlin, Ireland; **Mr Simone Laratro**, Università Cattolica del Sacro Cuore, Italy; **Dr Lisa Rogers,** University College Dublin Centre for Interdisciplinary Research, Education, and Innovation in Health Systems (UCD IRIS), University College Dublin School of Nursing, Midwifery and Health Systems, Ireland; **Mr Wouter van der Schors**, Erasmus University Rotterdam, The Netherlands.

Moderator: **Dr Pamela Mazzoccato**, Associate Professor of Medical Management at Karolinska Institute, Sweden & Director of Research & Development, Education and Innovation at Södertälje Hospital, Sweden.

Summary

In this session, six candidates were shortlisted to compete for the *Karolinska Medical Management Centre (MMC) & EHMA Research Award,* an annual award for the best contribution associated with a doctoral thesis related to health management.

The paper entitled '*It's always about the child': exploring the moral actions of Irish pediatric nurses and doctors in response to moral conflicts in their practice - a Critical Incident Technique study*' was presented by Dr Carol Hilliard. Dr Hillard explained that modern paediatric care is characterised by a complex environment with many actors, medical and technological advances, limited resources, and competing expectations. This can create moral conflicts for healthcare professionals, described as "a clash of values which gives rise to conflicting duties". Dr Hilliard aimed to explore the moral actions taken by paediatric nurses and doctors in response to moral conflicts in their practice, using a qualitative approach with the integration of the Critical Incident Technique (CIT). In-depth semi-structured interviews were held with 13 nurses and 6 doctors working in an Irish tertiary paediatric hospital. In total, 67 stand-alone critical incidents were identified from which three themes emerged that captured participants' moral actions. The first action is related to questioning and challenging decisions, opinions, or assumptions. Second is to explore alternative approaches, other options, and consult colleagues. The third action was to advocate for the child and family promoting patient-centred decision making. These actions reflect methods facilitating negotiation and consensus between the healthcare team and parents preventing conflict and achieving mutually acceptable outcomes. Moral conflicts cannot be avoided, especially in increasingly complex healthcare environment. Healthcare organisations must establish structures and resources that nurture healthcare professionals' moral agency enabling them to constructively engage with moral issues and develop moral resilience. Shared learning opportunities must be created, and active role modelling of ethical leadership must be encouraged. This will support junior staff to learn how to manage moral issues from senior staff. Finally, there is a need for objective ethics advice to ensure that decisions are informed by an ethical perspective.

Co-production is recognised as a critical driver to redesigning healthcare. Co-production facilitates improving the quality of care while also cutting costs explained Mr Simone Laratro. Co-production remains an emerging paradigm with low scientific maturity, but with high potential and as a solution for problems confronted by health care systems. Coproduction allows the inclusion of the patient's voice in the redesign of health systems. Therefore, the objective of the study '*Impact of co-production on satisfaction in the health care sector: an analysis from the patients' perspective*' was to analyse the effect of patient involvement on different dimensions of outpatient settings in epilepsy care. This simultaneously explains which dimensions of the healthcare delivery model influences patient satisfaction the most. Patient experiences represent the sum of all interactions across the full cycle of care affecting patients' perceptions of care provision. Patient satisfaction is an emotional response representing the degree of alignment between expectations and accomplishments. Four main determinants of patient satisfaction are: 1. Level of involvement in care; 2. Quality of care received; 3. Integration of primary and social care; 4. Treatment. A quantitative analysis based on Partial Least Square Structural Equation Modelling was used to evaluate the conceptual model and test eight hypotheses built around patient satisfaction and its four determinants. Data was collected through an electronic questionnaire. Results indicate that patient involvement does not directly affect satisfaction. Nevertheless, it positively and strongly influences drug therapy and care quality, which in turn positively affects satisfaction. This reveals that patient involvement is a key variable to the enhancement of satisfaction levels and, thus, of value for patients. Co-production can be considered an extensive driver in the improvement of patient satisfaction. The findings of this study can be appropriate for hospital managers to redefine priorities and to guide professionals in the continuous enhancement of patient-centred care and the aim for personalised co-production.

Ms Rachel Gifford stated that healthcare system redesign is often portrayed as an intervention to sustain costs while also improving the quality of care. Of particular interest are new models of financing and redesigning the process of care. An open empirical, question that remains difficult to answer is how to best organise and incentivise healthcare professionals to achieve health system goals? Even in theorising potential solutions, contestation remains. It continues to be difficult to measure the effects of [re]organisation given the complexity of healthcare system design. This study, '*Through the physician's lens. A micro-level perspective on the structural adaptation of professional work*' aimed to better understand the mechanisms behind physicians' responses to reorganisation and reform efforts. Many reforms intend to shift or influence physician's behaviour as physicians play a key, and influential, role in the healthcare system and have a high impact. Previous research indicated that despite reform efforts, professionals often continue to work in historical and established ways.

In this study three empirical cases of structural adaptations in the organisation of physicians' work resulting from pressures for physicians to move away from fee-for-service payment (and into salaried employment) and towards more integrated care delivery were examined. A mixed-method approach was used, comprising in-depth qualitative interviews with key stakeholders in healthcare and document analysis. Potentially negative, and unintended, effects of these structural adaptations resulting from a lack of attention to the micro-level dynamics at play, such as sensemaking processes were identified (e.g. expression of professional values, intergroup relations, and maintenance of intra-professional boundaries). This study highlighted the need for more attention to relational and cultural dynamics when considering the organisation of work. While structural adaptations may serve as an initial catalyst for further progress, in and of itself, structural adaptation fails to address the need for real behavioural change.

Dr Lisa Rogers presented her paper *'Implementing change within healthcare teams: a qualitative study exploring the influence of context on implementation success'*. Dr Rogers said that healthcare organisations are characterised as complex and subject to both social and political influences. Context is key to successfully implement change in an organisation and must be considered. The context is recognised as an important element but remains poorly understood. There is a lack of consensus on how context should be operationalised and accounted for in research. To bridge this gap in the evidence, this study aimed to develop a broad definition of context, develop a method to document and study context and lastly apply this method to evaluate how context influenced the implementation of change within healthcare teams.

First, a systematic review was conducted to develop the definition of context. This review highlighted significant variability in how context is defined, assessed and analysed. It also revealed that context is a concept that is multi-dimensional and dynamic. Secondly, the findings of this review informed the development of a practical approach for measuring the construct. The context coding framework provides a practical method that generates actionable and detailed findings. It also provides change agents with a method of weighing the possible influences of various factors before implementation and monitors their effect over time. The coding framework allows identification of variation in context across settings, enabling change agents to tailor their strategies to improve their fit with the context of interest. Third, to understand how context influences implementation, a multiple case study design was adopted, employing a triangulation of qualitative research methods. Two heterogeneous healthcare teams implementing a collective leadership intervention were used as case studies. Two overarching themes emerged. Firstly, rather than context having a unidirectional influence on implementation, context and implementation dynamically interact, respond, and mutually evolve. The second finding is that implementation is an inherently political process influenced by prevailing power structures. To conclude, the systematic review provides researchers with the opportunity to appropriately account for context in future research. The context mapping method developed through this research translated the dynamism of context into a practical method of assessing its influence on implementation. By advancing the understanding of power structures in healthcare teams, change agents can develop appropriate implementation strategies to account for micropolitics, creating contexts more receptive to change.

According to Mr Wouter van der Schors, many developed countries face similar challenges when it comes to the provision of healthcare and countries adopt similar solutions to tackle these challenges (shrinking workforce, changing demographics, and budget constraints). One of the solutions is inter-organisational collaboration (IOC). Inter-organisational relationships (IORs) between healthcare providers have become an indispensable part of contemporary healthcare provision in market-based systems. Two main types of relationships can be distinguished, i.e. mergers and collaborations. Inter-organisational collaboration is being increasingly stimulated in health policy, while mergers are being discouraged. Using multiple data sources, the study *'Getting married or living-apart-together? Healthcare executives' perspectives on the pros and cons of mergers and collaborations'* aimed to evaluate how inter-organisational collaboration between healthcare providers relates to the setting of regulated competition. The reasons, possible trade-offs, and effects of collaborations were investigated. When evaluating why healthcare executives choose between a merger, insights into barriers and various considerations are vital for future policy design. Improving or broadening healthcare provision is seen as the foremost motive for both mergers and collaborations. Collaboration-specific motives include improving quality, satisfying quality and volume standards, and implementation of evidence-based practices. Merger-specific motives include taking over financially distressed healthcare organisations, strengthening the bargaining position, exploring and opening new geographical markets or patient groups. Using patient registry data and by applying multilevel logistic regression, the effect of collaboration on the outcome in a population who had undergone breast cancer surgery was investigated. When examining the quality of care (i.e. surgical margins and re-excision rates) no effect for hospital volume and competition was found. Hospitals with high volume are associated with improved survival. From a healthcare management perspective, governance issues experienced by healthcare executives deserve attention, especially regarding managing multiple vertical and mixed agreements. Support in the form of inter-professional exchange of best practices, leadership development, or focusing on network governance in executive training, may thus be beneficial. Future studies are required to further establish the potential for substitution between mergers and collaborations.

Health systems globally are faced with an ageing population, bringing with it challenges of cost-containment while preserving the quality of life and ensuring healthy ageing in this population said Mr Olli Halminen. Yet, evaluating the cost-effectiveness of long-term care for elder people is not self-evident. Long-term care is complex by nature and interactions with multiple care providers may disturb the cost-effectiveness measures of one provider. *'A systems theory approach on analysing the cost-effectiveness of public care provision systems'* approaches analytical challenge from a systems theory perspective. It aimed to evaluate if a systems theory approach can be used to create an analytical framework for public care systems. A comprehensive data registry was used providing a full population sample of over 316,000 Finnish citizens older than 75 years. Using an inductive reasoning model was presented for long-term care as well as three managerial implications. The model for long-term care comprises five main building blocks: (1) An evaluation of the condition of the individual when entering long-term care. (2) The long-term state of the individual, mainly related to living conditions. (3) The use of short-term services; is this speculative, unplanned etc. This impacts the use of resources. (4,5) The last two elements are related to the output condition (i.e., cured or deceased). The following three practical managerial implications were identified:

1. If only hospital cost is focused upon, other parts of the care system may get overlooked distorting the long-term prediction of care resource use. This is referred to as a myopic view.
2. Policy makers need to acknowledge the preventive value of long-term care. While the efficiency of long-term care is often not producing an instant change in health status, it is preventing the stochastic need for the use of short-term services while balancing care. Moreover, it prevents the transition to more dire level-of-care models, such as nursing home admissions.
3. Decision makers need to avoid system “spill over” and ineffective allocation. The population need for care services is constant at a given time and is independent of the services offered. Care service system structure that fails to meet population needs will result in suboptimal use of long- and short-term services, unnecessary queues and capacity problems.

In conclusion, when considering the generalisability of the proposed framework, similar dyadic structures of long- and short-term services can be found in foster care and mental health services; the same structural approach could work as a viable sensemaking tool in these areas.

Recommendations

- To constructively engage junior health staff with moral issues and to develop moral resilience, healthcare organisations must establish structures and resources that nurture healthcare professionals’ moral agency.
- There is a need for objective ethics advice to ensure that junior staff learn how to manage moral issues from an informed ethical perspective.
- Governance issues which have been experienced by healthcare executives deserve attention regarding managing multiple vertical and mixed agreements. Therefore, executive training in inter-professional exchange of best practices, leadership development or network governance is beneficial.

Take Home Messages

- Co-production can be considered an extensive driver in the improvement of patient satisfaction. Patient involvement can enhance the patient's satisfaction and therefore also value.
- By advancing the understanding of power structures in healthcare teams, change agents can develop appropriate implementation strategies adapted to context which makes the strategies more receptive.

Value-based healthcare

Speakers: **Ms Grazia Dicuonzo,** Senior Lecturer of Business Administration, University of Bari Aldo Moro, Italy; **Dr Mandar Dabhilkar,** Associate Professor of Operations Management, Stockholm Business School, Stockholm University; **Ms Dorine van Staalduinen,** PhD candidate Leiden University & Leiden University Medical Center, The Netherlands.

Moderator: **Prof Tiago Rua,** Escola Nacional de Saude Publica, Portugal.

Summary

In recent years, health systems have shifted towards Value-Based Health Care (VBHC) in a move away from volume-Driven care. Value-based healthcare focuses primarily on improving patient health outcomes, thus creating more value for patients. In addition, value-based healthcare controls the costs of care by discouraging overtreatment and waste of resources. This session discussed what is meant by 'value', how can value-based care initiatives be implemented and concluded with a discussion on how to maximise value.

Ms Dorine van Staalduinen shared that the concept of value-based healthcare emerged in 2006 and presented six mutually reinforcing components that should be implemented to establish value-based healthcare. However, this abstract 'The Implementation of Value-based Health Care: A scoping review' found that minimal guidance exists on how to implement the reinforcing elements, especially regarding which implementation strategies are most suitable and effective. Earlier research indicates that differences may exist in the conceptualisation and implementation of VBHC. Differences can exist between countries, within countries, and between hospitals. This research aimed to create an overview of how VBHC is conceptualised, implemented and which strategies are used to implement VBHC.

A scoping review, searching multiple online databases focused on articles that used the full term of VBHC or value-based care with a clear reference to Porter and Teisberg were included in the study. Empirical and non-empirical research was included with a total of 62 articles. Results showed that 14 articles reported a complete conceptualisation of VBHC, others only conceptualised the value or goals of the concept or did not conceptualise the concept. This shows that VBHC is often not conceptualised or when it is, only in reference to one of its components. Concept clarity is needed to conduct proper research on VBHC. Next, the review investigated what is implemented as VBHC. The most frequently implemented VBHC components were measuring outcomes and costs for every patient and organised care into integrated practice units. This suggested that hospitals do not implement value-based healthcare as an integrated management strategy. Therefore, VBHC runs the risk of becoming a 'management fad' from which managers pick and choose components that best fit management strategies. This could lead to the fragmentation of VBHC and undermine its effectiveness as an integrative strategy.

Lastly, an overview of implementation strategies used to implement VBHC components was compiled. Less than one-third of the articles provided descriptions of implementation strategies. Education and the creation of interprofessional teams were the most described. Other studies described the use of external consultants. 11% of studies describing implementation strategies evaluated the implementation strategy used. Limited attention to implementation strategies is unfortunate, as the process of change can explain VBHC's success or failure. VBHC has high interpretative variability and is translated differently in local hospital settings. Most hospitals stick closely to the original concept by implementing outcome instruments, cost measurements, and integrated practice units, but VBHC may not be embraced as an integrative strategy. Implementation strategies are rarely described and evaluated even less. This suggest there is a lack of attention to the managerial aspects of value-based healthcare implementation.

Ms Grazia Dicuonzo focused on the relationship between clinical costing and VBHC. Principles of VBHC suggest that healthcare is organised around patients' medical conditions, the full care cycle and uses measurements of medical outcomes to improve care. Therefore, the concept of VBHC is relevant to clinical costing as it is orientated to the relationship between clinical outcomes and costs that facilitate the full care cycle. Value in healthcare measures improvement in patients' health outcomes against the cost spent to achieve improvements. According to Porter, healthcare competition must be transformed into value-based competition based on results driving sustained improvements in quality and efficiency. Focus should be based on value for patients, not just reducing costs. Competition must be based on results centred on patients' medical conditions over the full cycle of care. Value is about patient satisfaction, e.g., satisfactory surveys ask patients about their wellbeing, however value and patient satisfaction are commonly confused.

Elizabeth Teisberg established a clear framework for value-based transformation. This strategic framework is composed of elements including:

1. Understanding shared patient health units,
2. Design a comprehensive solution to improve health outcomes,
3. Integrate learnings,

4. Measure health outcomes and costs
5. Expand partnerships.

Clinical costing was defined by Ms Dicuonzo as an activity-based cost estimation method which studies resource input based on clinical activities or services using that resource. The discipline of costings includes both direct and indirect costs. The result is a unified service for making clinical and management decisions. The activity-based costing method is used to calculate an additional level of patient costs. Clinical costing can be considered a method through which VBHC can be implemented. The review shows a benchmarking system among healthcare organisations that leads to a continuous improvement of outcomes and cost ratios. Results further indicated that with clinical costing it is possible to estimate the costs of the resources used by the activities composing the care cycle in order to compare them with patient outcomes. This method appears to be in line with Porter's theoretical model of VBHC and the model outlined by the European Commission Expert Panel Report on Value Based Health. Estimation of cost component must be done through a method that fits well with the valued-based healthcare theoretical model and its purpose. To ensure a correlation between resource-activities and patients, standard costs and actual costs should be defined according to a homogenous logic using clinical costing. Findings from the paper suggested that the clinical costing method is relevant to the valued-based healthcare approach.

The point of departure for Dr Mandar Dabhilkar's research was the value agenda framework developed by Porter and Lee. The framework is a high-level strategy for providers aiming to implement VBHC. The centre of attention for this paper was provider level operations strategy. That is: how to design an operations strategy corresponding to the value agenda? This research focused on the design of VBHC, not its adoption or implementation. The research addressed two questions:

1. In what key decision areas must managers in provider organisations make decisions when devising an operations strategy that, fully or partially, corresponds to the value agenda?
2. How are these decisions shaped by and adapted to contextual framework?

The methodology consisted of a single case study, Karolinska Hospital, using qualitative and quantitative analysis and complemented additional minor case studies. Research began in 2015 when pilots of VBHC were tested and the design of the new operating model took place in Karolinska Hospital. However, roots of VHBC transformations in Karolinska Hospital could be traced back to 2011. Therefore, part of the data collected was retrospective and part in real-time. Minor case studies were used as it was expected to find similar design practices given the hypothesis that VBHC design is universally applicable. Design similarities were found, however wide variations existed and were context dependent.

Findings identified nine decision areas in devising an operations strategy corresponding to the Value Agenda. Decision areas included design principles and practices. To identify decisions shaped and defined by contextual variables a framework of VBHC design alternatives was created. This framework consists of descriptive structural factors needed to identify each design alternative. Six structural factors related to provider type and four structural factors related to managerial choice that characterise organisations implementing VBHC. With this framework, two main approaches to executing medical focus were identified: integrated practice units and integrated practice communities.

Community and trust are increasingly significant forms of organisation and coordination. Porter's approach to executing medical condition focus is based on the market (market price access) and hierarchy (high bill creation) striving to achieve authority targeted medical conditions. For contextual reasons, this approach is not always appropriate. An alternative approach encompassing community and trust supports communities centred around targeted medical conditions (e.g. arthritis). Dr Dabhilkar asked how can providers and managers know then which approach is more appropriate?

Based on the VBHC framework, the researchers developed a set of variables helping to determine which approach to executing medical condition focus is more appropriate. Dr Dabhilkar showed the audience a table to aid operational decision-making to make this decision. Decision areas remain intact, however decisions within these areas need adaptation depending on which approach is chosen to execute medical condition focus. It was concluded that devising an operation strategy corresponding to the value agenda is a five-step iterative cyclical and a continuous process. Initiatives at community or healthcare trust levels are increasingly significant forms of organisational co-ordination.

The discussion reflected on the challenge of implementing VBHC where systems are not aligned while care silos continue to exist. While Porter provided the model there is a challenge of how to measure outcomes where multiple morbidities and multiple health care teams exist. Furthermore, systems that lack definitions of value, and difficulties in measuring its application to patients who don't have standard conditions present several challenges to VBHC's implementation. Whose value is being measured: the patients, the professionals, the system, or different sectors within a healthcare system?

Why do hospitals struggle with VBHC? Hospitals want to start the process too soon failing to obtain employee support while focusing more on outcomes than process. Support from all stakeholders is critical to implementing value-based healthcare. How can patient value be defined and maximised in the context of rising comorbidities? In practice value is defined from different perspectives. Taking the example of children with chronic illness, the clinical outcome is their survival. Patient outcomes focus on their quality of life while they are alive, their conditions after 1, 2 years, etc and family involvement. Outcome measures need to be specific due to the existence of different clinical conditions. The biggest challenge to implementing VBHC at international level is defining the concept and ensuring consistency in implementation, so it is application is coherent to prove that VBHC is effective.

A lack of clarity and standardisation in the definitions and framework of valued-based healthcare at academic level remains. This may because the topic in practice is quite 'political' and therefore different practices seek to give an interpretation and perspective aligning with their objective. This has become status quo with limited willingness and motivation to change it. The value of value-based healthcare is through implementation in practice. However, most studies are practice-based, rather than controlled studies which can determine efficacy of VBHC's implementation.

Recommendations

- The concept of valued-based healthcare requires clarification. This will enhance research of value-based healthcare.
- To avoid fragmented value-based healthcare implementation healthcare providers and management should not pick and choose what components of the model to implement.

Take Home Messages

- If academic researchers in the field maintain the status quo without advancing VBHC, they will continue to be guided by case studies rather than implementation strategies determining the success or failure of VBHC.
- The implementation of Porter and Lee's Value Agenda framework and definitions differs widely between different practices with little standardisation between settings.
- Value-based healthcare is practice-based and highly dependent on the context and the environment where it is conducted.
- Studies and reviews show that there is lack of attention to the managerial aspects of valued-based healthcare since implementation strategies are rarely described and evaluated.
- Hospitals often do not implement value-based healthcare as an integrated management strategy but choose only a few components of VBHC which leads to a fragmented system.
- An operational strategy for the implementation of the value agenda is an iterative cyclical and involves the following steps: definition of key terms; decisions about design, principles, and practices; contextual factors, an approach to execute medical condition focus due to context, and adaptation of practices due to approach to execute medical condition focus

Continuity of hospital care

Speakers: **Prof Maria de Guadalupe Comparada Almeida,** Instituto Politécnico de Beja, Portugal; **Dr Alexandre Lourenço,** Nova School of Business & Economics, Universidade NOVA de Lisboa, Portugal; Centro Hospitalar e Universitário de Coimbra, Portugal; National School of Public Health, Universidade NOVA de Lisboa, Portugal; **Dr Fabrizio Ruffini,** Azienda Ospedaliera di Perugia, Italy; **Dr Miranda Rute,** Clinical Pharmacist.

Moderator: **Prof Paulo Boto**, Escola Nacional de Saude Publica, Portugal.

Summary

Continuity of care is achieved through the coordination and integration of care across sectors, healthcare settings, care providers and patients. Continuity has shown to enhance treatment adherence and outcomes, resulting in higher patient's and provider's satisfaction. Continuity of care can also improve patients' quality of life. The COVID-19 pandemic seriously hampered continuity of care due to closure of primary care practices, postponed appointments, shortages of medicine, and disruption of patient-provider interactions.

The session looked at continuity of care through four abstracts: Dr Alexandre Lourenço presented data from a Portuguese study on the determinants of delayed hospital discharges; Dr Miranda Rute presented the results of a surgical patients' home hospitalisation study. Dr Fabrizio Ruffini spoke about the importance of establishing a hospital-territory computer network for the management and care of patients in paediatric palliative care in the Umbria region; and Prof Maria de Guadalupe Comparada Almeida summarised the protocol and rationale of the discharge support intervention program involving occupation therapy's expertise in multi-disciplinary actions.

The abstract by Dr Alexandre Lourenço discussed the topic of delayed hospital discharges. According to Dr Lourenço, delayed hospital discharges are a cross-country phenomenon resulting in high social and economic costs. Delayed hospital discharges have negative effects on patients' health status and health system's functioning. Dr Lourenço study aimed to define the determinants that are linked to delayed discharges, in the Portuguese National Health Service (NHS). Data was collected via a survey shared in NHS hospitals over four years (2017–2020). The sample collected contained information from 30–35 public hospitals and covered over 70% of the population. The analysis focused on the differences between regions and hospitals. Overall results showed that the four-year average on delayed discharges was 6,3%, summing up to a total of 303,180 avoidable hospitalisation days. The average length of stay per delayed discharge was 77,5 days. Comparing the differences between groups in delayed discharges, there are approximately 20% delayed discharges in low complexity hospitals, when in more complex hospitals it is less than 10%. Hospitals with over 600 beds have a higher average Length Of Stay (LOS) of delayed discharges (4-year average of 99 days) than smaller hospitals (4-year average of 25–57 days). Patients hospitalised at age 80 or older are more likely to experience delayed discharge. Furthermore, where there are more Long-Term Care beds available in the region, there is a reduction in the percentage of delayed discharges and on average LOS of delayed discharges. Lower complexity hospitals with 200–300 beds perform better than others with fewer delayed discharges. Lower complexity hospitals are usually very close to the community. This suggests the way services are delivered has an impact on long term care and social support and coordination between hospitals.

Dr Miranda Rute presented on home hospitalisation and the challenges in surgical conditions. Home hospitalisation is an alternative care model to conventional hospitalisation. It focuses on the acute phase of the disease or the worsening of a chronic disease. Home hospitalisation suits patients that meet a set of clinical, social and geographical criteria and occurs only with patient and family agreement. The home hospitalisation project that Dr Rute presented began at the end of 2019. Data was obtained from hospital registers and through a questionnaire. The objectives of the study were to show and to characterise the population covered by this project, including their pathologies, discharge destination, impact on the patient and caregiver, and the financial impact. The study achieved a sample of 179 patients. Results from the study showed that the most prevalent reasons for surgical admissions and consequent home hospitalisation were intestinal, gastric, bile duct surgeries; abscess drainage; diabetic foot (including amputation); acute cholecystitis; and acute diverticulitis. The average length of stay achieved were 9,3 days (in 2020) and 10,1 days (in 2021). The overall satisfaction was 92,3% for the caregiver and 95,8% for the patient. When analysing the direct costs associated with the home hospitalisation model and the reimbursement obtained by hospitals, a positive balance of 284,031€ in savings was achieved. The project showed high levels of patient and caregiver satisfaction and clear economic advantages compared to conventional hospitalisation, but also the need to increase and improve the integration with primary care.

Dr Fabrizio Ruffini presented a plan for establishing a hospital-territory computer network for the management and care of patients in paediatric palliative care in the Umbria region. The network, built among paediatric hospitals and local facilities, aims to guarantee a path of diagnosis and care for the children in the palliative care pathway. In the Umbria region there are approximately 800,000 inhabitants and 2 major hospitals: the Hospital of Perugia and the Hospital of Terni. The paediatric population in the region is estimated to be around 129,700 (14,9% of the total population) with patients affected by chronic pathologies. The overall goal of the hospital-territory computer network developed by the region Umbria was to significantly improve the quality of life of patients and their families by reducing hospitalisation and providing home care, increasing coordination among care facilities and care providers, and increasing the level of precision care. Currently the hospital-territory computer network has developed a digital form for the census of patients belonging to the category of palliative care and allows for pediatric palliative care visits of patients admitted to hospital to be monitored in near real time. The network database is integrated with data inputs from both hospital specialists and family doctors. It is an information system to create strategies to improve local services. The computer network and the information contained therein is accessible through a web-data system and provides information on admitted patients on therapy, radiological and laboratory examinations, surgical interventions and vital parameters. Quality of life and highly specialised care are essential in the pediatric palliative field. There is therefore a need for deep collaboration and sharing of information among the hospital, which provides specialised care, and local facilities, which provide primary or basic care, as well as work to improve the patient quality of life.

Prof Maria de Guadalupe Comparada Almeida presented on the importance of occupational therapists in discharge planning. The aim of the intervention was to maximise patients' ability to be independent; minimise injuries; reduce periods of disability and hospitalisation. This can lead to reduced organisational costs and increased wellbeing of patients' and their families. Discharge planning is defined as a complex process that requires effective communication between team members, the community which provides necessary care and services to the patient and their family. Discharge planning is a multidisciplinary process of coordination and procedures in which the patient's needs are identified. The aim is to facilitate continuity of care in the transition from the hospital environment to home. The role of the multidisciplinary team is fundamental in discharge planning. One of the professionals in the team is the occupational therapist (OT). The OT is the only health professional with the necessary skills to assess the patient's functionality, limitations and disabilities. The OT can plan and implement interventions with the aim of optimising and/or re-educating motor, sensory, cognitive, and intellectual functions. An OT can help ensure the safety and accessibility of patients' home environment and support patients to adapt to their new life conditions. Well-planned discharge aims to support the patient to return to their previous environment as independently as possible. It should identify and anticipate any difficulties a patient may experience. It should acknowledge patients' occupational performance and activities that are significant and meaningful to them. It is important to promote a space and time where families can express themselves and share their experiences with others in a similar situation to demystify disabilities they live with.

On the question on what hospital or health managers can do to avoid delayed hospital discharges, Dr Lourenço said that the number of available long-term care beds has an impact, differently from the number of acute beds. This is quite relevant for care planning; therefore decision-makers should invest in long-term care services and home-care services. The structure of hospitals also has an impact: hospitals with over 600 acute beds performed worse. These hospitals are less integrated with the community and lack coordination with social and long-term services. This implies that when developing hospitals, big complex structures should be avoided. The preferred structure would be a capillary network close to the community.

Commenting on whether building expensive inpatient facilities is in contradiction with promoting home hospitalisation, Dr Lourenço argued that there will be a change in service delivery due to the aging population. With the help of digital tools, to some extent there will be a shift from hospital care to home-based care. This will be an interesting trade off in the future as to whether to invest more in the usual expensive new hospital facilities or in concepts like home hospitalisation.

Dr Rute argued that patient safety in home hospitalisation is as safe if not safer than in-patient care due to fewer post-operative infections. When physicians intend to send the patient to a home hospital, it is important to make the decision in a multidisciplinary team and to consider all potential complications a patient might have. By shifting care to the patient's home expenses (care products, nutrition, electricity, personnel) are simultaneously shifted to the families. On this point, Dr Lourenço argued that the focus is the patient wellbeing and them feeling better in their own homes. Dr Rute reminded that patients will be admitted to home hospitals only if the patients meet appropriate social criteria, which include having a caregiver.

Presenters argued that by having better continuity of care, the adverse effects linked to delayed hospital discharges could be reduced. Delayed hospital discharges are connected to high social and economic costs with negative effects on patients' health status and overall health systems' functioning. Home hospitalisation is a good example of how hospital care can transition smoothly to a more patient-centred approach while simultaneously reducing healthcare expenditures. Therefore, it is very important to have an interconnection among hospitals and local facilities.

Recommendations

- Decision-makers should invest in long-term care services and home care services. Additionally, when developing new hospitals, big and complex structures should be avoided as they are usually less integrated with the community and lack coordination with social and long-term services. Decision-makers should prefer hospitals with capillary networks and close to their communities.

- Well-planned discharge from hospital should identify and anticipate any difficulties a patient may experience and acknowledge patients' occupational performance and activities that are significant and meaningful to them.
- To improve the quality of life of palliative paediatric patients and their families, there is a need for interconnection, deep collaboration and sharing of information among hospitals, which provide specialised care, and local facilities, which provide primary or basic care and work to improve overall patients' quality of life.

Take Home Messages

- Delayed hospital discharges have negative effects on patients' health status, health systems' functioning and health care expenditures. Hospitals that are less integrated into the community and lack coordination with social and long-term services have more delayed discharges.
- Home hospitalisation is an alternative care model to conventional hospitalisation. It is recommended to patients that meet a set of clinical, social and geographical criteria and can happen only with the agreement of the patient and their family.
- In the future there will be an interesting trade-off as to whether to invest more in the usual expensive new hospital facilities or in concepts like home hospitalisation.
- Ensuring continuity of care does not depend on a single professional. The role of multidisciplinary teams is fundamental in discharge planning.
- Systems that facilitate the sharing of information about patients among hospitals and local facilities are pivotal to ensure high-quality care and patients' quality of life.

Sustainability of health services

Speakers: **Dr Estelle Baures**, EHESP, France; **Dr Andrea Brambilla**, Politecnico di Milano, Department ABC, Design & Health Lab, Italy; **Dr Marija Jevtic**, MD PhD, full professor Faculty of Medicine University of Novi Sad, EUPHA ENV, Climate Pact Ambassador; **Dr Milica Paut Kusturica**, Research Associate at Faculty of Medicine, PhD, Pharmacoeconomics Specialist, University of Novi Sad, Serbia.

Moderator: **Prof Susana Viegas**, Escola Nacional de Saude Publica.

Summary

This session discussed the theme of environmental sustainability in the healthcare sector from various perspectives. It showed how strong interactions between healthcare and the environment inevitably affects the system's ability to generate health for the population.

Dr Andrea Brambilla introduced a new tool for the evaluation of healthcare facilities, called SustHealthv2. This tool helps identify sustainable high-quality environments in which services can be delivered safely and efficiently. The research team who developed the SustHealthv2 tool conducted an analysis of Italian healthcare facilities. They found that 70% of buildings were older than 50 years, thus obsolete. Improving the quality of these buildings is crucial and yields numerous benefits such as the reduction of negative outcomes, greater efficiency, effectiveness, and savings in the final cost of maintenance and organisation. The tool has been developed by involving experts from various sectors, who identified three levels that must be evaluated: social, environmental, and organisational. Each level has several criteria to be considered and a different weight is assigned to each criterion; the tool uses a binary system weighted with multicriteria methodology. For now, the tool has been tested comparing two different hospital facilities, and, independently from the comparison. The main outcome is that it can be used to strongly support decision-making processes and identify those aspects that must be primarily addressed. This research enables the evaluation of the building's environment. Benefits are primarily for the organisation but also for all patients who enter an environment projected to match their specific needs. The tool is being used in other European countries, but the topic is common all over the world, therefore its application can extend to other European countries.

The healthcare sector’s impact on climate accounts for around 4.4% of global net emissions, and the first assumption to act in favour of mitigation and adaptation on climate change is that only well-trained healthcare professionals can successfully do that. Dr Estelle Baures underlined the need to amplify the training for healthcare professionals, especially for those involved in the management of these problems. In 2020, EHESP developed a new skill set to train healthcare professionals. Dr Baures and her colleagues promoted a training course for future managers which was developed around two key objectives:

- Mitigation, identify actions to reduce carbon footprint of the healthcare sector.
- Resilience, preparing future leaders for the impact of extreme weather and the shifting of burden of diseases.

The programme, was delivered live and through e-learning, focused on transdisciplinary skills and was designed to meet the current and future needs of healthcare organisations to carry out an ecological transition. The new set of professional skills covered three main areas: analysis, integration strategies and advocacy.

When referring to the impact of health systems on the environment, one immediately thinks about the direct carbon footprint of CO_2 emissions of healthcare facilities and industries. However, all related activities of the system must be considered. An important example is the management of pharmaceutical waste. Dr Milica Paut Kusturica analysed the practices and the perception of drug disposal in Serbia. Her research showed that many factors influence both the perception of the population and the usual practices for drug disposal. The main objective of her research was to explore the current methods of drug disposal from households, the willingness of the residents to participate and bear the costs of collection programs and define factors contributing to the willingness to participate and pay for the collection program. Most of the participants kept unused medications at home and were convinced that it is correct for the drugs to be returned to the pharmacies who will take care of their disposal. More than 90% of the sample did not receive any instruction on disposal and, while most were willing to participate to implement the project, only 50% were willing to contribute to collection expenses. This research underlined that the improper drug disposal is still prevalent in Serbia and that most of the sample analysed wants to participate in a collection program, but some actions must be made in order to actualise the program. There is a need to analyse the life cycle of the medications in order to implement preventive actions, such as delivering correct and complete information to the customers when prescribing or selling the medications, organise effective and easily accessible programs and educate and raise awareness.

Education and sensibilisation are necessary actions to raise awareness of all stakeholders, given that their commitment is the *conditio sine qua non* to start the change. Dr Marija Jevtic is a Climate Pact Ambassador and her role in the healthcare community is that of a dealer of knowledge and awareness. From this point of view, an ambassador knows that the contribution to change and mitigation comes from different stakeholders and there must be commitment from all of them to the cause. The role of the European Climate Pact Ambassador is to motivate and contribute to the understanding of the need for actions aimed to mitigate and adapt to climate change. The health sector should focus on energy efficiency, low carbon-based transport, and initiatives for the green environment (medical waste management, recycling of PPE), also digital health can place a role in reducing healthcare impact on the environment.

Policy makers and healthcare managers should grow together in developing climate change mitigation and adaptation actions, since climate change has also been seen as climate challenge for the whole healthcare sector. It is fundamental to remember that sustainability also refers to the food sector, which is an important aspect of public health. Healthcare should promote healthy products, traditional products and do preventive actions to guarantee a no food waste policy, both at the individual, organisational and macro level.

Healthcare professionals' roles in achieving sustainability is evident. At the same time, professionals need a broad education covering all aspects of the healthcare sector, including the impact of climate change on population health. Education is a priority and healthcare professionals and managers need to be aware of the importance of transformation of the healthcare sector. New governance strategies and policies must be built around these new circumstances.

Recommendations

- Education of healthcare professionals must consider new sets of skills to prepare them to analyse complex environments and propose new strategic solutions to current and future problems.
- Empowerment of the population and engagement of all stakeholders is essential in implementing mitigation actions.

Take Home Messages

- Interprofessional collaboration is the key to address climate change challenges.
- When evaluating the impact of the healthcare sector on climate change, it is important to consider not just the carbon footprint of healthcare facilities, but all the related activities of the system.
- The evaluation of healthcare facilities is needed to make strategic intervention and promote good and sustainable healthcare. Improving the quality of healthcare buildings yields various benefits including the reduction of negative outcomes, greater efficiency and effectiveness and saving in the final cost of maintenance and organisation.
- Delivering correct and complete information to the customers when prescribing or selling medications, organising easily accessible programs and educate and raise awareness on drug disposal are crucial actions when it comes to effective management of pharmaceutical waste.
- Digital health can play a role in reducing the healthcare impact on the environment.

Integration of care for community-living patients

Speakers: **Dr Anam Ahmed,** Panaxea, The Netherlands; Radboud University Medical Centre, The Netherlands; **Ms Annika Bengts,** HEMA Institute, Department of Industrial Engineering and Management; Aalto University School of Science, Finland; **Ms Riikka Riihimies,** Clinical Instructor, Tampere University, Tampere, Finland; Valkeakoski Health Center, Valkeakoski, Finland; **Prof Mieke Rijken,** Nivel, The Netherlands; University of Eastern Finland, Finland; **Ms Katerina Tarasova,** Health Assessment Europe, Belgium; Accreditation Canada, Canada; **Ms Anu Vehkamäki,** Aalto University, Finland.

Moderator: **Prof Adalberto C. Fernandes,** Escola Nacional de Saude Publica, Portugal.

Summary

This session focused on new models of care characterised by integrated care and person-centred care that aim to deal with fragmented care models currently delivered worldwide. These attempts aim to provide a better quality of care, improve health outcomes and financial efficiency. In this session, six studies were presented outlining several integrated interventions such as initiatives that concern the discontinuity of care among patients with chronic and multiple needs, and the care provided to older people living with Parkinson's disease.

Dr Anam Ahmed described that older people develop needs in multiple domains such as physical, mental, and social domains at some point in their life. Integrated care is seen as the solution for this growing demand for care for patients with multiple needs. The WHO has established a framework on integrated people centred services describing the complex nature of care for those with multiple needs. However, despite the existence of this international framework European healthcare systems face multiple challenges such as lack of coordination, interprofessional collaboration, and insufficient resources. The existing literature on the effectiveness of integrated care programs for frail elderly people shows heterogeneity in their outcomes and information is lacking concerning for whom and why these programs work. Therefore, there is a need for a detailed understanding of the interrelatedness that influences the effectiveness of integrated care programs for older people. The review was conducted to gain insight into the relationships between the context, the mechanisms, and the outcomes of integrated care for community-dwelling frail older people by establishing a programme theory. The program theory aimed to describe how, why and for whom the complex intervention is expected to work and under what circumstances. The results of the study are five configurations representing mechanisms that get triggered within a specific context leading to outcomes. The configurations involve the role of older people and their informal caregivers, the importance of establishing multidisciplinary teams of competent healthcare providers, the need for effective communication between multiple stakeholders and others. Finally, Dr Ahmed concluded that the program theory should be considered as the first step towards a more comprehensive theory, and additional realist research is needed to establish this.

Ms Anu Vehkamäki stated that although the life expectancy is rising by 2 years from the age of 60, quality of life is not rising accordingly. Moreover, the number of chronic diseases which increase after the age of 65 in combination with the provision of inadequate healthcare highlights the need for a better quality of chronic care. As a result, the study aimed to explore the reasons for care discontinuity related to chronic patients and the process that could help to mitigate the issue. The study was conducted performing exploratory research and grounded theory was used for data analysis. The results of the study showed that the reasons for discontinuity of care are patient-related such as situational challenges, internal psychological challenges, and challenges related to the healthcare system. These challenges are organisational, such as challenges amongst caregivers, process challenges regarding fragmented care due to specialisation, and technological challenges such as legislation that can hinder health technology development. Ms Vehkamäki explained that chronic patients do not follow standard care pathways. Their care needs to be monitored in the long term and their care plan may need to be recreated. The study suggests that there is a need to follow a care plan, to build systems to monitor care continuously especially for chronic patients providing a channel back to care when patients need it.

Ms Annika Bengts described several causes leading to care fragmentation such as the high specialisation of care providers and the division of care between them. A socio-technical solution could be the Virtual Care Operator (VCO) platform. The platform supports the collection of patient's data, facilitates care plans, and simplifies information supporting decision-making. The study focused on Parkinson's disease. It aimed to discover the reasons why fragmentation occurs in Parkinson's disease care and explore the capabilities that VCO could mitigate existing fragmentation. To understand the patient's journey, the research team made use of Finnish care guidelines and conducted interviews. Later, the role of the patient was mapped, and all tasks performed during their care were identified. As soon as the tasks where fragmentation of care occurred were identified, focus groups were created and interviews performed. The study's results showed that fragmentation occurs mainly in the care plan and no single care plan exists as care plans are not followed. The results identified that locating information in complex IT systems as a difficult task because most work was done manually, and relevant information was lost. Finally, VCO should facilitate care plans and make them actionable to the parties involved in the care and the patient's record would be complemented with simplified and classified patient information.

Prof Mieke Rijken raised the issue of managing multimorbidity due to a growing population living with chronic conditions. She described that in the Netherlands more people live with two or more conditions than individuals living with one condition. This has consequences on the organisation of care. In the past reforms in primary care concerned chronic patients but these did not address multi-morbidities. As a result, this patient group experience fragmented care. Therefore, there is a need to shift towards a person-centred and integrated care model. As a solution, a model on multimorbidity care was developed that can guide the redesign of services for people with multimorbidity and shows what good care consists of for them as a result. Prof Rijken explored which components of this model are priority for the patient population and what preferences they have regarding the practical implementation of these prioritised components. To achieve that, a mix-method study was conducted. The most frequently prioritised element was shared electronic health records which underline the value of the continuity of care. Furthermore, 70% of the participants wanted to receive support from their GP or their primary care doctor and only 18% wished to receive support from a nurse. The study recommends that providers at local level should regularly explore the care preferences of their patient populations with multiple chronic conditions.

Ms Katerina Tarasova presented some of the healthcare challenges highlighted during the pandemic. Specifically, she mentioned that these challenges represent a very fragmented care model and underlined the need for a restructured model of care. A way to support the healthcare systems in addressing some of these challenges is to adopt an integrated model of care. In the last years this was achieved in Europe and Canada by developing healthcare standards for health facilities. These healthcare standards were developed based on ten design principles for integrated care aiming to assess the system, find existing gaps and achieve integration within the system. These ten elements formulate integrated people-centred health systems standards (IPCHS). Moreover, through research Ms Tarasova identified five levels of integrated care: co-exist, fragmented, co-operative, collaborative, and integrated. She described that many of today's systems will likely fall into the fragmented space and there remains a long way to go to achieve a fully integrated healthcare system. Further, to achieve integrated care a different level of preparedness for each healthcare system is system is required.

Ms Riikka Riihimies described that people appear to have multiple needs due to comorbidities, ageing and differences in socioeconomic situations and individual ability to function in daily life. Therefore, one care pathway is not suitable or adequate for all patients-clients. A way to respond to differences in individual needs appears to be the navigator-service. This is a non-profit service developed in Finland that creates a method recognising clients' values and individual resources in addition to medical care needs. Part of the service is profiling patients. This means distinguishing patients with similar care needs while assisting care professionals to utilise the most appropriate services for them. The navigator's profile is based on dimensions. The vertical dimension represents the client's values which are collected from interviews with patients. The horizontal dimension represents professionals' evaluations of patients' medical complexity of care which is surveyed with questions towards care professionals. As a result, the navigator proposes a care pathway for the client. The patient's care pathway does not guide the client's medical care or medical treatment, rather it guides the services. Finally, the expected outcomes of using the navigator service are that the client's values and opinions will be heard, resources and services are targeted correctly, and that the whole organisation will change towards more person-centred care.

Fragmented care and discontinuity of care especially for patients with multiple and complex health needs have appeared mainly due to the specialisation of healthcare professionals and lack of communication between them. As a result, the conventional care pathway is not responsive for this population and there is a need for a paradigm shift. A viable solution is the adoption of integrated and person-centred care models which recognise and identify the needs, preferences, and values of every individual. Digital health services can be a powerful tool to achieve this. However, as most health systems today are dealing with fragmented care models there is still a long way to go to achieve a fully integrated healthcare system.

Take Home Messages

- Integrated care is the solution for the growing demand of care for patients with multiple needs.
- Fragmented care is caused mainly because of high specialisation of care providers and the division of care between them.
- To optimise integrated care programs, the comprehensives of the international WHO framework on integrated people-centred services and the interaction between all different factors such as the role of older people and their informal caregiver and the establishment of multidisciplinary teams should be considered from a system level, organisational level, healthcare provider level, and patient-level perspective.

Responding to healthcare crisis

Speakers: **Dr Lucrezia Ferrario**, Health Care Datascience Lab, Centre for Health Economics, Social and Health Care Management, Carlo Cattaneo – LIUC University, Italy; **Ms Raquel Chantre**, Centro Hospitalar Universitário Lisboa Central, Portugal; **Ass Prof Vassiliki Costarelli**, Harokopio University, Department of Economics & Sustainable Development, Greece; **Dr Rui Dang**, Westminster International University in Tashkent, Uzbekistan; **Mr João Victor Rocha**, Researcher at National School of Public Health (Portugal); PhD Candidate at NOVA University of Lisbon and Linköping University.

Moderator: **Prof Dr Kim Putters**, Director, Social and Cultural Planning Office, The Netherlands.

Summary

Since its onset, the COVID-19 pandemic has had far-reaching impacts on the delivery of care, access to care, management of patients, and overall healthcare systems. In this abstract session, speakers presented some of the responses that were implemented to face the COVID-19 pandemic and other crises to mitigate impacts.

Abstracts touched upon the innovative drugs economic impact in the management of COVID-19 hospitalised patients; a hospital outpatient pharmacy proximity program in a teaching hospital in Lisbon; the adherence to COVID-19 prevention measures and willingness to vaccinate in adults and the role of health literacy; gender disparities in access to healthcare during the pandemic; and what happens to hospitalisations due to Ambulatory Care Sensitive Conditions before and after a crisis.

The COVID-19 pandemic has required countries to make huge investments in health care systems. New drugs were tried to treat COVID-19 patients, aiming to shorten the length of stay in hospital, but their adoption was not standardised. Dr Lucrezia Ferrario presented her study to assess the impact of these new drugs during the first two waves of the pandemic (between February and December 2020) in six public hospitals in Italy. Using time-driven activity-based costing, the costs with inpatient stays were calculated and an economic evaluation was performed. Patients could go down eighth different pathways, according to hospital complexity and the need for rehabilitation after discharge. In six of the eight pathways considered, the use of new drugs seemed to reduce length of stay (thus releasing beds for other patients) and costs by around 30% (despite the fact drugs themselves were more costly); the use of new drugs also reduced oxygen therapy days up to 38%.

The pandemic also required innovation in terms of hospital pharmacy departments functioning, namely access barriers during lockdown. Concerns included ensuring access to medicines, continuity of care and monitoring of adherence and patient safety. Ms Raquel Chantre presented the Hospital Outpatient Pharmacy Proximity (HOPP) Program, a project started at Centro Hospitalar Universitário Lisboa Central (CHULC) in March 2020 to promote access to hospital drugs in local pharmacies - national regulations require that specific therapies are dispensed only at hospitals.

Following previous small-scale pilot projects, the hospital devised an 'external drug delivery system' to ship medication to local pharmacies all over the country. The project required a protocol with the National Pharmacies Association and the Pharmaceutical Distributors Association, some changes to regulations and additional human resources. Currently, the project has a team of ten, mostly pharmacists. The project involved setting up a call centre and an app; patient enrolment was voluntary, and patients had the option of choosing the local of delivery. Over 13 months, the project involved more than 10,000 patients (with AIDS/HIV infection, transplants, chronic renal failure or cancer) and more than 1,600 pharmacies covering the whole country. Savings are expected in the future, namely through avoiding travel costs and work absenteeism.

Prof Vassiliki Costarelli presented a cross sectional study on the role of health literacy in the adherence of Greek adult population to COVID-19 preventive measures and their willingness to vaccinate. Vaccine hesitancy has been considered by the WHO one of the top ten threats to global health and health literacy can be 'a lifesaving determinant', especially if it avoids people trusting incorrect information. The study involved approximately 2,000 patients in early 2021 (using a snowball methodology to identify respondents); the sample was not representative, with a predominance of young, literate people. Overall, higher health literacy levels were associated with higher reported adherence to COVID-19 preventive measures but not with increased willingness to vaccinate.

Dr Rui Dang presented a study on gender disparities in access to care in Europe during the pandemic. Gender gaps in access to and use of healthcare services existed before the pandemic. The Sustainable Development Goals want to reduce these inequalities. Focusing on the 50+ year-old population and using the 2020 SHARE Corona survey, the study covered 26 countries and more than 57,000 respondents. Assessing if individuals forewent treatments, postponed or were denied medical appointments, preliminary results show that females tend to systematically do worse and be more affected in accessing care. Differences vary among countries, there is some heterogeneity, but results are broadly similar.

Finally, Mr João Victor Rocha analysed the effect of a crisis (the economic crisis of 2011-2014) on hospitalisations due to Ambulatory Care Sensitive Conditions (ACSC) in Portugal. Three periods were considered: before, during and after the crisis. Overall, between 2007 and 2016, hospitalisations due to ACSC represented 11% of inpatient stays, with hospitalisations due to pneumonia representing 37% of these. The number increased from 2007 to 2016, with the Northern and Central inland regions of the country being the most affected. However, results varied across the conditions considered (which included heart failure, urinary tract infections, COPD, diabetes, and hypertension) and no correlation was found with socioeconomic status.

Answering questions from the audience, Dr Ferrario said that her study is replicable in other countries. On the topic of literacy, Prof Vassiliki defended that the less literate are more susceptible to fake news. As to why health literacy did not seem to improve willingness to vaccinate, a more thorough investigation is necessary. Identifying the less literate is essential, as is the education of health professionals and countries need to invest more on vulnerable groups. Reducing hospitalisations due to ACSC in the future depends on better integration of services, increased access, especially to vulnerable groups, and quality primary care. Finally, regarding gender differences, Dr Dang highlighted that Europe is heterogeneous, in terms of culture and geography. Europe will need to promote solidarity, supporting countries with weaker systems, and overall institute policies to promote gender equality.

Prof Dr Kim Putters summarised the session suggesting there were inputs on three levels. Firstly, what can be learnt from earlier crises; secondly, several possible explanations for why policies work or do not work were put forward (differences between and within countries, cultural differences, differences in the resources available, the gender gap); finally, an instrumental level regarding the role of economic evaluation and that of health literacy. He concluded with a personal take on the importance of good communication, of giving people information they can trust, and how that influences policies and empowers people, stating this to be a common issue in policy and research.

Crises, like the pandemic, can lead countries to develop new strategies, like new drugs or different ways of providing services that are more efficient and/or resourceful ways of circumventing problems. Health literacy is an important asset, although not necessarily the solution for all our problems. Pre-existing difficulties, like gender disparities or unnecessary hospitalisations can be compounded. Quoting a statement by the Portuguese Association of Hemophilia on World Hemophilia Day: "*We have to maintain this proximity access to therapy. It is critical for people to adhere to the treatment they need … We have to find something that we can learn from this pandemic. Or else, it will have been just devastating. If something good also happened, we have to learn from these positive experiences*".

Recommendations

- Before and during crises (public health or others), countries should systematically assess the cost-effectiveness of new interventions, being pharmacological or organisational; promote health literacy; and address issues like gender disparities and unnecessary care.

Take Home Messages

- The employment of new drugs can reduce length of stay, costs associated with hospitalisation and facilitate the availability of hospital beds.
- During crises, hospitals and/or departments may need to re-think their organisation to adapt to new circumstances. Proximity programs can be a solution to ensure continuity of care between hospitals and local and community providers.
- Health literacy can lead to informed decisions and better health choices. It should thus be promoted and invested on.
- Pre-existing problems, like gender disparities and unnecessary care, can be exacerbated during crises.

Inter-organisational collaboration

Speakers: **Dr Justin Aunger,** University of Birmingham, United Kingdom; **MSc Robin Peeters**, Department of Health Services Research, Maastricht University, The Netherlands**; Prof Tania Gaspar,** Lisbon Lusiada University/CLISSIS/COMEGI; ISAMB/Lisbon University, Portugal; **Dr Tiina Tuononen,** University of Eastern Finland, Finland.

Moderator: **Prof Ann Mahon,** Professor of Health Leadership and Head of the Health Management Group at the University of Manchester.

Summary

Inter-organisational collaboration has been a theme throughout the conference and is increasingly important as health systems respond to external megatrends which this session refers to. Inter-organisational collaboration implies different health and care providers working across organisations or sector boundaries towards a common goal. Inter-organisational collaboration is essential to address ‘wicked health problems’ and improve quality of service provision through resource sharing. The effectiveness of these collaborations is unknown and under-research. This session shed some light on the impact of interorganisational collaborations within the healthcare sector. Abstracts in this session illustrated the several inter-organisational collaborations within the sector and how these collaborations can be improved.

Dr Aunger explained that collaboration is often a method touted to improve performance in healthcare systems, but the ways in how it does this are nebulous and contested. Literature shows disagreement on which type of inter-organisational collaboration is best. England has a complex history and background of favouring different types of competition, including market systems, and reverting to integrated care systems bringing together various providers to deliver health, social care, and other functions. Dr Aunger’s research adopted a realist understanding examining the mechanisms and outcomes for how collaboration might work and when. A literature component and 36 interviews were conducted across hospitals, alliances, mergers, policy bodies, patient representatives, and integrated care systems. NVivo and a retroductive analysis type were applied to examine the data gathered. A middle-range theory framework developed by Dickinson & Sullivan was adopted to interpret performance findings. This framework proposes three main domains of collaborative performance: cultural efficacy, organisational efficiency, and technological effectiveness. This paper extended technological effectiveness to include access to new types of knowledge. Mechanisms were identified and coded into these three domains. Dr Aunger said that the research focused on collaborative performance which is seen as the end stage of how collaborations work. A partnerships synergy theory by Lasker was adopted to this understanding. This argues that first collaboration must function to produce organisational collaborative behaviour enabling collaborative performance. Most collaboratives become stuck in the first stage (functioning) which prevents them from achieving the final stage (performance). Findings showed that traditional ways examining collaborative performance have underestimated the significance of the socio-cultural aspects of performance. Moreover, interconnected aspects of cultural efficacy, changes in organisational culture, leadership, and enhanced communication within the system drive a range of benefits including better coordination, enhanced sustainability, and service coordination. In conclusion, most performance improvements can occur from changes to cultural efficacy particularly in relation to improved communication and awareness of the local health system. However, how these elements tie into care outcomes and care quality remains unclear and requires further research.

Ms Robin Peeters shared that many ‘wicked problems’, such as increasing demand and healthcare costs, exist challenging the sustainability of health systems requiring action from multiple stakeholders. Collaborations often occur through new organisation forms such as networks. While many different types of networks exist Ms Peeter’s study focused on networks that consist of three or more autonomous organisations working together deliberately, and specifically, to achieve a common goal. As inter-organisational, goal-directed, networks are seen as one of the solutions to address ‘wicked problems’ it is crucial that they are effective. However, the concept of network effectiveness is heavily theorised and elusive. Network effectiveness has multiple dimensions. Firstly, it can be measured as an outcome measure e.g., increase in quality of care. Secondly, it can be measured as a process measure, e.g., levels of trust amongst network members, and lastly, it can be measured at multiple levels, e.g., entire community level or individual organisation level. This study aimed to answer the research question ‘When do internal and external stakeholders consider goal-directed networks effective’. A distinction was made between internal and external environments. The internal environment was defined as the stakeholders who participate in the networks, and the external environment consisted of stakeholders from institutional environments such as governmental and regulatory agencies. Methods employed included document analysis and interviews. Results showed some overlap between the internal and external environment and some differences in perspectives. Firstly, while results were considered important, they are rarely measured. Next, perceptions of network effectiveness were based on the quality of network collaborations. Then, networks are seen as the norm, with normative, cognitive, and social pressures to participate in, and continue, network participation. Finally, some institutionalisation of networks has emerged in practice which lacks evidence of the networks ability to address wicked problems. Networks are urged to critically reflect on who benefits from network activities and whether results address wicked problems. Stakeholders should clearly define how, and when, what type of results, and define network effectiveness by employing key performance indicators.

Dr Tiina Tuononen explained that the career anchor concept was developed to support people in difficult career choice situations. The concept helps to identify personal, professional self-image; how personal values relate to career choice. Work and life experience are needed to help recognise individual talents, motives, values and to gain knowledge about things which are important to them. When an individual finds themselves in a difficult situation or forced to make difficult choices, they find things in their life that they are not willing to give up. These are considered anchors. Edgar Schein (2006) found eight career anchors. The theory posits that everyone has one main or important, career anchor with the others being stable with changes over time. In Dr Tuononen's study 145 specialised physicians were recruited, with a mean age of 50 years and with 22 years of mean working experience. A career anchor questionnaire was administered to participants to analyse career anchors by mean scores and identify the most important career anchors. Results showed that highest mean score amongst all participants, regardless of gender, was lifestyle, followed by technical and functional competence. The highest leadership career anchor was general managerial competence with scores for this anchor highest amongst younger participants and those with less work experience. Examining the most important career individual anchors, showed again that the most important was lifestyle with the general managerial competence anchor considered important amongst 10% of participants. Career anchors important to physician leaders were lifestyle, technical functional competence, and dedication to a cause. Lifestyle anchored employees wish to reconcile their work with family and personal life and was found to be an important goal amongst younger leaders. Knowledge of individuals' most important career anchors is important to individuals and organisations. Awareness of professional self-image can support career planning, job choice, and providing, and asking, for working conditions enabling individuals to deliver their best performance to an organisation. This way the best match between an organisation and an individual can be found.

Prof Tania Gaspar presented a pilot study which was developed in three hospitals that collaborate with the health ministries. The study aims to help organisations to face increasing internal and external challenges reforms, behaviour, social and economic changes. The study started before the COVID-19 pandemic whereby the challenges became greater, for example internal disorganisation difficulties resulting from weak decision-making in terms of management with consequences for job satisfaction. The main objective of the study was to collect contributions for public health management experts to propose a comprehensive integrated multi-dimension assessment model of health organisations that include the several variables.

The researchers gathered three main conclusions:

1. The organisational culture has a strong impact on the quality of life and professional work risk factors. In order to improve results and the process of health organisations it is important to focus on organisational culture.
2. The relation between professionals' quality of life, work performance and second social risk is important. If the risks are managed well, the quality of life in the performance will improve.
3. There is a strong relation between economic results and patient satisfaction.

The results can be organised into different levels. On the political level experts agree on the need for governance-transparency regulation, long term strategic planning, adequate funding of the Portuguese NHS, increased financial autonomy from the NHS and greater management autonomy related to central in political power. On the management level experts identified the need for long term strategic planning considering the optimisation of services, improvement in the level of internal communication between the different levels of hierarchy and regular monitoring of management in clinical practise. In order to improve the quality of health organisations should adopt an ecological perspective including the members of the management administration, clinical directors, health professionals of all categories patients and other stakeholders. The information and recommendations are important contributes related to assess and monitor the global quality of health organisations.

During the discussion the question of what is needed to demonstrate the relationship between interorganisational collaboration and healthcare performance arose. Dr Aunger answered that the method re-adopted is about establishing how people perceive performance that could be improved in their collaborations. It is about building theories and testing in a definitive way. This, however, is difficult as in reality collaboration in health systems cannot be easily compared. Two similar health systems would be required, one working in newly collaboration and the other not, to make changes evident. However, it is difficult to assess a complex system that ties collaboration to performance where there are also many parallel improvement strategies occurring simultaneously. Prof Gaspar on the other hand explained that her research team struggled to make the connection of the network and the effects due to the dynamic environment.

In terms of the type of education that could contribute to difference in the context of an interorganisational collaboration, Ms Peeter´s opinion was that it is very important for professionals to start as early on as possible to become familiar with collaborating and organisational intersectoral collaborations. Some things that hampered this collaboration is more institutional like financial streams that divide different professions. This keeps professionals from collaborating for the benefits of the patient because they have different incentives, and it is not as easy to reimburse collaborative efforts. In addition, Dr Aunger revealed that researchers who did the interviews during COVID-19 found it very difficult to recruit any frontline workers able to shed light on how collaboration had impacted them and how they felt they were contributing to the collaborations.

Recommendations

- Interorganisational stakeholders should clearly define how, and when, what type of results, and define network effectiveness by employing key performance indicators.
- Career anchors can support career planning, job choice, and provides for better working conditions enabling individuals to deliver their best performance for an organisation.

Take Home Messages

- Performance improvements can occur from changes to cultural efficacy particularly in relation to improved communication and awareness of the local health system. Interconnected aspects of cultural efficacy include changes in organisational culture, leadership, and enhanced communication.
- The concept of interorganisational network effectiveness is heavily theorised and elusive. This refers to networks where three or more autonomous organisations are working together deliberately and want to achieve a common goal.
- The career anchor concept helps to identify how personal values relate to career choice. Knowledge of individuals’ most important career anchors is important to individuals and organisations.

Operations management, logistics and procurement

Speakers: **Dr Bart Noort**, Postdoctoral Researcher, University of Groningen; **Dr Maria Maia,** Institute for Technology Assessment and System Analysis (ITAS), Karlsruhe Institute of Technology (KIT), Germany; Interdisciplinary Centre of Social Sciences (CICS.NOVA), NOVA School of Science and Technology (FCT NOVA), Portugal; **Dr Chiara Morlotti**, Research fellow at the department of Management, Information, and Production Engineering, University of Bergamo; **Dr Oskar Roemeling**, Assistant Professor, University of Groningen.

Moderator: **Ms Hayley Welsh**, Director, Optimat; EcoQUIP Plus Project Coordinator.

Summary

Effective operations management, logistics and procurement are key to reducing time and resources waste, mitigate the inflation of healthcare costs, and ensure the availability of supplies. This session explored the benefits of joint purchasing, the implementation of lean management, the decision-making processes behind procurement, and the introduction of appointment systems.

Dr Bart Noort discussed how technological evolutions led to more types of medicine which have become rapidly available. However, some technological solutions are very expensive. Consumption of expensive medications has increased consistently over time and has a negative impact on the healthcare budgets globally. Strategies to contain increasing expenditures and safeguard equitable access to medication are needed. A potential solution to this problem is adopting a strategy of 'joint purchasing'.

Joint purchasing by both healthcare providers and health insurers can lead to increased purchasing power and thereby reduce the financial burden. Using a stakeholder theory perspective Dr Noort aimed to better understand the relationship between the purchaser and the provider in the joint purchase of expensive drugs. Dr Noort aimed to understand the influence of the pharmaceutical industry on this relationship in the joint purchase of expensive drugs. Results indicate that health insurers experience high legitimacy and a sense of urgency to control healthcare budgets but have limited power to do so. Hospitals (i.e. physicians) on the other hand demonstrate limited legitimacy to control healthcare costs and are mainly focused on maintaining and safeguarding their professional autonomy. The insurer-hospital relationship is contingent-incompatible due to different financial goals and weak concurrency. Pharmaceutical companies can easily interfere in this relationship because of their powerful position and reduce, for example, trust between hospitals and insurers by preventing transparency on medicine prices through non-disclosure agreements. Both providers and purchasers need to collaborate closely to reach optimal value in relation to expenditures. Incentives that create both urgency and align legitimacy of both parties are required, as well as more transparency to facilitate stronger relationships. Both elements are prerequisites in order to effectively adopt a strategy of joint purchasing. Hospitals and governments need to find ways to reduce their dependence on pharmaceutical companies.

Dr Chiara Morlotti discussed the results of her study on a flexible outpatient appointment system. Both quality and efficiency are fundamental characteristics in the healthcare industry. Long waiting times are a major problem in outpatient health services, as they often affect the satisfaction and the impression of the quality of the service. To counteract this, the Italian government introduced a maximum waiting time for medical service provision (MTTS). In the study presented, the appointment system was found to have inefficiencies. Through their developed flexible system, the research group aimed to reduce the number of unallocated appointments and increase the number of patients treated. In the four groups that determined the number of days a patient required treatment, two groups were found to have low patient treatment rates prior to the introduction of MTTS. By introducing flexibility and re-allocation of used, free and missing slots, the researchers observed a treatment rate above 95% in all groups. This is especially an improvement in middle-class priorities. The study concluded that the previous rigid appointment system did not account for varying daily arrivals and that the flexible appointment system avoids forcing procedures and increases the overall number of patients treated within fixed days.

Dr Oskar Roemeling introduced a study on the barriers and facilitators of lean management sustainability. Lean management has a positive impact on care process performance but is still difficult to sustain over the long term. Dr Roemeling's team is studying a healthcare provider who has implemented the lean management program. From the ongoing study, it can be reported that factors such as communication, education and leadership serve as facilitators for lean management. On the other hand, factors such as limited resources (time, space), resistance to change and risk aversion, or fear act as barriers.

Within the healthcare context, certain facilitator activities can improve lean management. In the communication factor, it is important that lean management is a recurring agenda item so that the discussion within a provider is ongoing and persistent. In addition, through increased awareness, building a mindset, and forming a structure, facilitator education is strengthened. Finally, facilitator leadership is reinforced through stimulating and motivating employees and coaching and facilitating. Within the healthcare context, certain facilitator activities can improve lean management. In the communication factor, it is important that lean management is a recurring agenda item so that the discussion within a provider is ongoing and persistent. In addition, through increased awareness, building a mindset, and forming a structure, facilitator education is strengthened. Finally, facilitator leadership is reinforced through stimulating and motivating employees, coaching and facilitating. The final comments are that lean management is not a perfect system, but it helps to understand what is happening in the health care providers environment and helps to deliver better health care.

During the discussion Dr Morlotti shared her thoughts regarding whether physicians feel their autonomy had been compromised during her study. Oskar Roemeling was asked whether there could be a hierarchy among facilitators. In response he advised that this is quite possible. Another question related to the transferability of the observations made through the frameworks presented in the study of Dr Noort. Dr Noort shared that there is a level of transferability, but we need to consider that the study was a pilot study in a Dutch setting, therefore other outcomes may be observed in systems that are organised differently. Next, the audience wondered if hospitals and doctors need to be seen as two distinct sets of stakeholders considering in the Netherlands they often operate independently. This is of interest due to the power and influence doctors might have on hospitals and how this may disturb synergies or the relationship between actors in the larger framework.

Health systems face challenges on various levels. In a globalised environment, logistic operations and procurement are vital elements of effective health systems who are faced with increased expenditures. Adopting lean management can positively impact effectiveness of various processes and aid in the containment of expenditures whilst not compromising quality and value. Procurement of medical material has – in the light of the recent COVID-19 pandemic – proven to be crucial in effective health systems. This is not only true for medical material but also for medicine. Effective procurement of medicine, in particular expensive medicines, is key in order to constrain health expenditures and safeguard access to vital medicine for the whole population. This session focused on increasing effectiveness of various logistical and procurement processes, helping to contain and control healthcare costs while increasing value.

Recommendations

- Hospitals and governments are advised to reduce their dependency from the pharmaceutical sector in order to effectively adopt strategies of joint purchasing.

Take Home Messages

- Lean Management is not the perfect system, but it still helps to understand what is happening in a health care providers environment and helps to deliver better healthcare.
- Flexibility is key for tackling health care delivery issues and to enhance resilience of healthcare systems.
- Fair medicine pricing and creating transparency in global medical supply chains is crucial to lowering healthcare expenditure related to medicine.

Improving healthcare outcomes

Speakers: **Dr Jacopo Fagherazzi,** Università degli Studi di Verona, Italy; **Dr Joana Faro**, Centro Hospitalar Tondela Viseu, EPE, Portugal; **Mr Alexander Micallef**, University of Malta, Malta; **Ms Andrea Schweiger**, Karl Landsteiner Institute for Hospital Organization, Vienna, Austria; **Dr Kinga Zdunek**, Public Health Department, Medical University of Lublin, Poland.

Moderator: **George Valiotis**, Executive Director, EHMA.

Summary

A core theme of health management is the improvement of healthcare outcomes. This session explored the different ways healthcare outcomes can be ameliorated through efficiency improvement, quality development, organisational management, home hospitalisation, and reduce in-hospital stays amongst other.

Ms Andrea Schweiger discussed the role of multidisciplinary team meetings in oncological care. Every year 40,000 individuals are diagnosed with cancer in Austria. This figure is anticipated to double by 2040. To meet future challenges in oncological care, effective cancer services are a crucial factor. Multi-disciplinary teams (MDT) are central to this ambition. MDTs provide treatment recommendations based on available information about the patient and are involved in collective decision making for the patients’ care. MDTs aim to improve communication and decision making between healthcare professionals. They have become a standard of patient care in Austria; however, patients’ outcomes are average compared to other European countries. Additionally, evidence of their effectiveness is lacking with potential for improvement. This project assessed the work of tumour boards, an MDT, in Austria. An analysis of tumour boards structures, processes and outcomes was undertaken to identify effective teamwork processes associated with decision making and patient-centred care.

The impact of treatment by tumour boards was assessed with a view on how they will impact future cancer treatment. Literature on the Austrian context is sparse as studies of tumour boards are conducted in the UK and the US. Therefore, there is a lack of awareness of effective processes and the impact on patient outcomes in Austria. A systematic literature review was conducted focusing on tumour boards, MDTs and quality assessment. Additionally, semi-structured interviews were conducted with six MDTs. The study aimed to develop a self-assessment instrument on MDT effectiveness. Results showed that it is necessary to enhance the quality of information presented at tumour boards, to structure discussions about case complexity, and investigate the role of board participants. Consideration of patient perspectives should be investigated by tumour boards as there is a lack of information on patient outcomes. The project indicated the critical function of MDTs in improving effectiveness, encouraging patient-centred care, and quality improvements in multidisciplinary decision making. The self-assessment tool developed by the project supports the assessment of efficient teamwork and includes patient decision making in cancer treatment.

The aim of the scoping review by Mr Alexander Micallef was to explore the impact of delayed hospital discharge in acute hospital settings. The study’s four objectives included providing an operational and conceptual definition of delayed discharge, investigate delayed discharges vis-a-vis the hospital setting, identify causes and effects of delayed discharge in acute hospitals, and identify how hospitals counteract the causes and effects of delayed discharges. Literature search was conducted between 2017 to 2020 on literature published between 1990 – 2019. Only articles on medical and surgical adult wards and hospital settings were included. The review allowed the research team to conceptualise a definition of delayed discharge as a “medically fit patient that is needlessly kept in hospital due to organisational factors”, however an operational definition did not emerge. No link was observed between delayed discharge and specific ward settings (public vs private). A cause-and-effect delay discharge model was built. This divides discharge into inpatient and post-discharge patient phases. Causes for delayed discharge included poor management, inadequate discharge planning, patient age, and transfer of care problems (e.g., inadequate social services, lack of nursing home space, etc.). Extensive bed blocking, overcrowding in emergency department with resulting financial implications were some of the effects of delayed discharges. Interventions to reduce delayed discharges were hospital based rather than country based with no consistent national approach to managing delayed discharge identified.

Dr Joana Faro spoke about hospital and home care in patients with influenza and pneumonia. Up to 650,000 deaths annually are associated with respiratory illness caused by seasonal influenza. Portugal has one of the highest death rates from pneumonia amongst European countries. Dr Faro explained that home hospitalisation units emerged in Portugal in 2015 in response to low hospital bed availability and is an example of innovation in the health system. Hospital at home (HH) provides intensive hospital level care for acute conditions, that would normally require an acute hospital bed, in a patient's home via MDTs. The main objective of the programme is to avoid conventional hospitalisation, reduce hospital stays, and increase humanisation within healthcare. The importance of HH during the COVID pandemic ensured an increase in hospital capacity.

This study aimed to compare the probability of death between patients, with a main diagnosis of influenza and pneumonia, treated in hospital at home and traditional hospitals. An observational, retrospective, and cross-sectional study was developed for all patients admitted to HH and traditional hospitals over a two-year period. Illness severity was higher amongst patients in traditional hospitals than in home hospitals. Results showed a lower rate of drug-related adverse events at home versus traditional hospital care, shorter hospital stays and lower mortality rates: patients in HH had a lower probability of death than traditional hospital patients. HH can be an effective alternative to traditional hospital admission for a specific group of patients. HH appears to have better patient outcomes, allows for the maintenance and optimisation of traditional hospital bed capacity while providing a better alternative for the growing number of increasingly complex health-related conditions.

Dr Jacopo Fagherazzi presented a study on preoperative checklist in the protocol ‘femoral neck fracture in patients over 65 years’. 120,000 cases of femoral fracture occur in Italy annually; over half occur in patients aged over 65 and 75% of cases occur in female patients. Almost one-third of patients with femoral fractures will live with a life-long disability. Early treatment intervention, of less than 48 hours, has been shown to reduce mortality rates and reduces the risk of major complications. To improve the efficiency of the Orthopaedics department at the University Hospital of Verona a preoperative patient checklist was created reducing time to surgery access without decreasing patient safety. The checklist included patient risk indicators for operating room treatment. The checklist is completed by an anaesthesiologist when a patient over 65 years is diagnosed with a femoral neck fracture.

Prospective recruitment of patients treated under the new intervention started from December 2020 (patients aged 65+) and were compared to episodes in 2019. Results from data collection showed improvements in waiting times and an increase in the number of surgeries between 2019 and 2020. In 2020, operations that occurred within 48 increased from 74% to 78%. The relationship between checklist completion time and preoperative time and checklist completion and adherence to surgical timelines was also studied. Results showed that patients operated on within the 48 hours pre-operating waiting time were similar whether the checklist was completed or not. However, on patients operated on after 48 hours where checklists were completed the average waiting time was significantly lower than amongst patients without a checklist. It was hypothesised that patient outcome differences may be associated with checklist investigations. Results on checklist completion and adherence to surgical time showed the checklist does not play a direct role, but results are not significant due to the small sample size in this group. The tool triggered improvements with a noticeable increase in efficiency. Similar tools could be useful in other care pathways.

Dr Kinga Zdunek discussed research on the rights of children with special needs. This study was financed by an EU-Horizon 2020 Project - Models of Child Health Appraised (MOCHA). The main aim of the project was to assess the various partners of children’s primary care in the EU and the EEC. The main fillers for the project reflected the Convention on the Rights to the Child (CORC) where the children should be at the centre of primary healthcare delivery. However, the notion of child centricity is not implicit in many healthcare systems yet is extremely important for optimal child health and health service design. This study analysed the strongest public health discussions linked with child health services in the EU and EEC. This revealed several concerns about children with disabilities. To explore this further a questionnaire designed as a semi-structured survey instrument asked respondents in 30 countries to indicate policies that appeared to have developed due to public, cultural or political pressure rather than on evidence-based research or effectiveness. From 71 case studies, 8 overarching themes emerged including children with special needs.

Data showed two main directions of societal initiatives in Europe: initiatives against unequal access to services, and initiatives against discriminatory law. These initiatives were correlated to each other. Dr Zdunek gave examples of initiatives that took place in European Union countries. For example, initiatives on unequal access to services in Austria and Lithuania, and in Croatia and Poland initiatives against discriminatory law. The study showed that societal initiatives play an important role where particular importance is given to parents and carers who frequently act as upholders of children's rights. The lack of financial support, discriminatory law, and lack of access to services can have far-reaching effects on children with disabilities' long-term health and wellbeing. The practical implications that emerged from this research were its influence and contribution to the EU Child Guarantee. This guarantee seeks to ensure free and effective access to health, education, nutrition, and housing for marginalised children, including those with disabilities.

The discussion between the presenters highlighted the strong relevance of information and communication dimensions. Indeed, the effectiveness of the innovative interventions proposed in these studies may depend on effective information and communication strategies. For example, a key facilitator for MDT is the existence of information about health outcomes shared by all specialists. Involving patients in cancer care may signify an excess pressure on patients while ensuring they are informed requires good physician-patient communication. Hospitalisation at home requires a good communication plan with the hospital to verify if living conditions are acceptable. A major conclusion was that digitalisation may be an essential management tool to improve patient centrality and involvement.

Improving health outcomes is the central objective of health system. Innovative approaches in hospital care may contribute to this goal, which rely on adequate communication practices and information systems. This session highlighted such strategies, such as the multidisciplinary teams for cancer care, the adequate planning of hospitalisations to avoid delayed discharges, the hospital at home practice, the preliminary checklists for surgery, or the societal initiatives to defend the rights of children with special needs.

Recommendations

- There is a lack of evidence on the effectiveness of multi-disciplinary teams. Further research and studies are needed to address this gap in different country settings.
- To reduce delayed patient discharge interventions a national country strategy is called for as there is much heterogeneity in discharge practices between hospitals within countries settings.

Take Home Messages

- Multi-disciplinary teams improve effectiveness, improve the quality of professional decision making and enhance patient-centred care.
- Causes for delayed patient discharge in hospitals include poor management, inadequate discharge planning, patients age, and transfer of care problems such as inadequate social service provisions.
- Home hospitals can increase hospital bed capacity which is crucial during crises such as the COVID-19 pandemic. In addition, home hospitals reduce the risk of adverse advents and lower the probability of death.
- Introducing a preoperative checklist to protocols for patients over 65 with a diagnosis of femoral neck fracture can improve patient outcome and increase efficiency in orthopaedic hospital departments.
- Limited financial supports, discriminatory laws and a lack of access to services can have long term effects on the health of children with disabilities. Societal initiatives are important to ensure free and effective access to health, education, nutrition and housing for children with disabilities.

EHMA 2021

EHMA PIE SESSIONS

GOVERNANCE AND LEADERSHIP

PERSON-CENTREDNESS AND CARE INTEGRATION

MANAGING THE DIGITAL TRANSFORMATION

IMPROVING HEALTHCARE ACCESS AND OUTCOMES

ENVIRONMENTAL SUSTAINABILITY OF HEALTH SERVICES

HEALTH WORKFORCE

Improving healthcare access and outcomes

Speakers: **Mr João Frutuoso**, Hospital Vila Franca de Xira, Clinical practice (M.D.) and Union Delegate; **Dr Ioannis Sarafis**, Postdoctoral Researcher, Aristotle University of Thessaloniki.

Moderator: **Dr Elly Breedveld**, Director, Stichting Perspekt, and Board Member, EHMA.

Summary

This first EHMA PIE in this session was presented by João Frutuoso who dived into the impact of healthcare funding on patient outcomes. Investment in healthcare is essential to promote economic and social development. However, in a world with scarce resources, it is necessary to identify and analyse trade-offs between costs and benefits in order to optimise the choice of funding and healthcare value.

Health spending represents a high proportion of OECD countries' GDP and increased in the past two years, mostly due to the COVID-19 response. Since health care spending is under the radar, there is an increasing need to know where the spending is going and find better ways to use our resources. It is thus important to assess the value emerging from health spending, and have mechanisms in place to measure value. Quantifying value would ultimately help make choices about funding allocation during annual budgeting processes. João Frutuoso and colleagues have thus analysed the relationship between healthcare expenditure as a share of GDP and avoidable mortality, using the latest data published in the OECD health report (2019). Both costs (health expenditure as a share of GDP and in absolute terms) and value (avoidable mortality) indicators were used as proxies. Using Spearman correlation and linear regression, the researchers quantified the impact of healthcare funding on the mortality of preventable and treatable illnesses. The researchers also estimated the overall mortality *expected* based on healthcare spending in all OECD countries. The difference between observed mortality and expected mortality was particularly high in North America and Eastern Europe, and relatively low in Western Europe. Results also show that the percentage of healthcare funding is proportionally inverse to treatable deaths and preventable deaths per 100,000 inhabitants. Future research should link these results with patient experience and satisfaction, using Patient Reported Outcome Measures (PROMs) as proxies.

Dr Ionnis Sarafis from the University of Thessaloniki talked about *Moving beyond RCTs by Tapping the potential of Real-World Data for advancing clinical research and improving post-treatment in breast cancer.* Using real-world data to advance clinical research is the vision of the REBECCA project. REBECCA stands for REsearch on BrEast Cancer induced chronic conditions supported by Causal Analysis of multi-source data and is a new 4-year project funded under the European Union's Horizon 2020 research and innovation programme. Its aim is to improve the quality of life of breast cancer patients or cancer survivors. The project is built around two axes: 1) clinical research by analysing data to better understand how treatment affects quality of life, and 2) patient management to improve interventions or care choices at the individual level. Cancer has several associated comorbidities and disabilities, and patients can suffer from more than one comorbid condition. REBECCA focuses on three conditions: breast cancer treatment-induced peripheral neuropathy, breast cancer-related fatigue, and adjuvant treatment-induced osteopenia/osteoporosis. Currently randomised controlled trials (RCT) are the goal standard in clinical research. However, there are several limitations of using RCTs for complex chronic conditions as patients may suffer from different conditions that are influenced by various variables. Moreover, RCTs usually only include a small population sample and researchers do not have control over the independent variables. REBECCA aims to move beyond RCTs by using real-world, observational data. Real-world data (RWD) may already exist in large volumes (e.g. patient diagnoses, prescriptions, visit records, etc.), can cover large population samples, and can include population samples with various characteristics. Real-World Data in REBECCA is collected through sensor and log data retrieved via mobile apps, electronic health records, and wearable devices such as smartwatches or fitness bands. Patients' real-life behaviour can be monitored, including their physical activity, eating habits, sleep, local environment and information related to their online interaction. Once collected, the real-world data is then processed to extract indicators (e.g prescriptions can give information into symptoms, web search queries into emotional status, and smartwatch accelerometer into exercise sessions). The most important goal of REBECCA is to use the indicators to infer causal relationships with PROMS and complex chronic conditions. The causal modelling then indicates causalities and sheds light on confounders. Causal modelling will enable health managers and practitioners to measure the safety and effectiveness of breast cancer treatments and measure their impact on the quality of life after breast cancer treatment, to improve clinical outcomes and PROMs, and to help develop personalised recommendations and treatments based on the data collected by each patient, thus increasing the value for patients. Some existing challenges that can arise when using RWD are data heterogeneity from using different measurement sources, incomplete values, and errors in the estimation of indicators.

In the second part of the session, the discussion revolved around the importance of measuring value for patients. João Frutuoso pointed out that the need for measuring value arises from the limited resources available, and that we must therefore demonstrate value for money. He also underlined how the concept of value differs from one stakeholder to the other. Ioannis Sarafis stressed that the available real-world data can also be used to assess whether our healthcare systems are efficient. The speakers then talked about how the use of PROMS can be better embedded in healthcare. One way to do so would be if more evidence was found on how PROMS are linked to treatments.

Lastly, the ethical dimension of monitoring in the REBECCA project were discussed, especially with regards to personal liberty and privacy. Ioannis Sarafis stressed that participants of REBECCA join the project on a voluntary basis and can choose to not get monitored on certain aspects. He nevertheless mentioned that cancer patients appreciate being monitored closely, as they usually feel isolated after being discharged from the hospital. An added value for the patient is thus that health professionals can directly spot if something is wrong with their health or treatment and provide adequate support.

Take Home Messages

- In a world with scarce resources, it is necessary to identify and analyse trade-offs between costs and benefits in order to optimise the choice of funding and healthcare value.
- Measuring value of healthcare spending can help make choice for funding allocation during annual budgeting processes.
- The percentage of healthcare funding is proportionally inverse to treatable deaths and preventable deaths per 100,000 inhabitants.
- The REBECCA project aims to move beyond RCTs by tapping the potential of real-world data for advancing clinical research and improving post-treatment in breast cancer.
- Using RCTs is not ideal when studying complex chronic conditions as patients may suffer from different conditions that are influenced by different variables.
- By using real world data, the REBECCA project can gather large volumes of existing data, cover large population samples, and include population samples with various characteristics and comorbidities.
- Mobile apps, electronic health records, and smartwatches can give insight into patients’ real-life behaviour, which can then be processed to define indicators and use these indicators to infer causal relationships with PROMS and complex chronic conditions.
- Causal modelling enables health professionals to measure the effectiveness of breast cancer treatments, improve clinical outcomes and PROMS, and help develop personalised care.

Governance and leadership

Speakers: **Sharmi Haque**, Maastricht University; **Nabil Jamshed**, Head of Corporate Governance, Guy's and St Thomas' NHS Foundation Trust.

Moderator: **George Valiotis**, Executive Director, EHMA.

Summary

This EHMA PIE session saw two presentations: the first on pandemic preparedness, policy surveillance and the preparations needed for future pandemics, and a second on applied governance and development.

On the topic of pandemic preparedness, Ms Sharmi Haque discussed the role of policy surveillance and legal epidemiology in legislative provisions for future public health pandemics. During pandemics, good governance is imperative as it can facilitate the provision of well-informed decisions and can prevent the failure of respecting human rights. The WHO had developed international regulations, but each Member State was required to develop national plans. In this process, good governance and legal frameworks were advocated for by both the WHO and the European Union. The COVID-19 pandemic saw an inconsistent response across EU Member States, particularly in the absence of solidarity.

Ms Haque started from the problem statement: "What position do the methods in policy surveillance and legal epidemiology have in the legislation provision for future public health pandemics?". Methods in policy surveillance and legal epidemiology can help direct the provision of adequate legislation in the future. Qualitative tools include policy surveillance - allowing one to compare different countries; doctrinal legal scholarship - to understand the context in social, cultural and political terms; and legal country reports - from legal atlases such as 'Lex-Atlas: COVID-19'. Policies should be analysed in the context of the universal human rights framework – "a set of moral, legal, and political principles" to guide governments. With the pandemic, EU Member States had to launch measures that restricted rights and freedom. This was necessary to contain the pandemic but should be proportionate. The pandemic inevitably affected individuals, as proposed in Sen's capabilities framework. Ms Haque stated that preparedness depends on the implementation of different governance mechanisms. The effectiveness of policies and laws should be studied to ensure a more effective intervention in future crises.

Mr Nabil Jamshed started by referring us to the Nolan principles for good governance: Objectivity, Openness, Honesty, Leadership, Integrity, Selflessness and Accountability (OOHLISA). Good governance includes performing effectively, promoting values, being transparent in decision making, building capacity and engaging stakeholders. The work of Prof Mervyn King at the Good Governance Institute highlights the importance of stewardship as a dimension of governance. For stewardship, organisations need to invest in staff development and do intelligent analysis of data to obtain sustainable outcomes. Different models have been used to manage organisations. The traditional model has a single board overseeing several sites, but multiple leadership and management teams, which makes for a heavy structure. In mid-era models, a regional level was added but some duplication still made them expensive. Modern models use group structures (of hospitals, for instance), with devolved governance, as franchises; this reduces the layer of leadership. The centre defines policies and leads, but group management is clinically centered and led. Management teams are multidisciplinary triumvirates: a clinician, a nurse, and a manager. Human resources and finances are centralised for several groups, leading to efficiency savings. To achieve this, it is important to develop a framework, make the most of synergies, have good internal communication (a 'golden thread'), and implement co-production with management. Mr Jamshed is currently implementing the AARE framework, with accountability, assurance, responsibilities, and escalation as essential governance domains. These can be linked to the pillars of patient safety, clinical effectiveness, patient experience, risk, compliance, and shared best practices, which support quality governance and ensure value. Different actors in the triumvirates play different roles: the clinical director ensures accountability; the heads of professions ensure responsibility; and the management centres ensure management functions. Being agile and efficient, these arrangements add value to organisations.

Ms Haque commented on how human rights tend to be forgotten, even if morally sound decisions are needed. Asked if pandemic measures were morally sound, Ms Haque said that countries had to act quickly as that was more important. In the future, a more coordinated response is desirable. She added that good leadership is necessary for good governance.

Mr Nabil Jamshed did not see much connection between human rights and governance but reported on some examples like the mental health and incapacity acts in the UK. The connections tend to be more visible at a government level, but not necessarily locally. There are different approaches internationally, namely because treaties can be interpreted differently. Looking at what has worked in the past and what we can be used in the future, COVID-19 led to restrictions on basic human rights, and in the future measures should be proportionate and rational. In terms of policy recommendations for better pandemic preparedness, Dr Jamshed argued that the use of the human rights framework could and should be extended from other areas where it is already common, like research. He gave the example of access to vaccines, defending rules should be defined at a policy level but then the delivery must be equitable.

In terms of management, it was asked if lean management and efficient triumvirates could reduce the need for managers or displace some; and if the market is shrinking or just changing. Mr Jamshed suggested that people are still needed, and roles can always be repurposed. For example, a model can have two boards composed of different people, one with an advisory role and one focused on delivery. Asked about the relationship between clinicians and managers, Mr Jamshed clarified that in clinical leadership models, the design of the services is mission-critical; management manages but clinicians deliver, and knowledge is essential. Ms Haque said that clinicians should learn management and acquire additional management skills.

The new collaborative legislation in England is a new construct. In terms of its impact on organisations, it needs synergies between key partners, who need to share a single vision. Similarly, to the WHO model, the new collaborative legislation needs to approach needs in a holistic way: not just the need for care, but also all the determinants before. It is important to move away from current performance measures to outcome measures; but it is hard when there is no uniform definition of value for patients, for instance. In fact, populations are different and so are their needs.

The two presentations addressed very diverse levels of governance: the highest and a more operational, organisational level. The session suggested that policies are not evaluated, and management approaches are not re-thought as often as they should. Additionally, innovative and encouraging ideas were put forward to change this state of affairs.

Recommendations

- EU Member States should implement mechanisms to ensure that human rights are respected in the event of future pandemics. Restrictive measures in these circumstances should be proportionate and rational. The effectiveness of policies and laws should be studied to ensure a more effective intervention in future crises.
- Governance should try to observe the seven Nolan principles of Objectivity, Openness, Honesty, Leadership, Integrity, Selflessness and Accountability.
- Organisations should invest in stewardship, namely through staff development, and intelligent data analysis, to obtain sustainable outcomes. Additionally, organisations could benefit from a devolved governance model.
- Management teams should be multidisciplinary triumvirates, including healthcare professionals and managers, while other functions can be centralised, allowing some efficiency savings.

Take Home Messages

- Preparedness depends on the implementation of different governance mechanisms. EU Member States are diverse and so were their responses to the pandemic, which had an impact on basic human rights. Therefore, coherent governance mechanisms are needed to ensure human rights are respected in case of future pandemics. Different methods can be used for this purpose, policy surveillance being one of them.
- Governance should not be seen as bureaucracy. Organisations have diverse leaders, with different backgrounds and opinions, and should be as inclusive as possible. Having multidisciplinary teams and removing management burden can add value.

Person-centeredness and care integration

Speakers: **Ms Cláudia Teresa Nelas Dias De Almeida**; **Dr Axel Kaehne**, Reader Health Services Research, Medical School, Edge Hill University; **Prof Mieke Rijken,** Netherlands Institute for Health Services Research; **Dr Anneli Hujala,** University of Eastern Finland.

Moderator: **Dr Axel Kaehne**, Reader Health Services Research, Medical School, Edge Hill University.

Summary

In this EHMA PIE session the focus was on person centeredness and care integration.

According to Ms Dias De Almeida, care integration is motivated by an increased number of people living with chronic diseases, increased life expectancy and a growing need for healthcare and associated social care. All care needs should be addressed simultaneously, and people should be seen as a *psychophysical and social whole*. This asks for active cooperation from all stakeholders involved. Only structured, patient-centred thinking can contribute to improvements in patient experience and reach goals of efficiency, effectiveness, and quality for the patient. Ms Dias De Almeida explained that the concept of integration of care is diverse; however common points include coordination among multidisciplinary team members; consideration of patient, family, and carer's needs; improving the care experience; and reducing costs.

Ms Dias De Almeida explained the differences between 'transitional care' and 'transition of care'. Transitional care is seen as a simple transfer of the patient from the care of one professional to another. Transition of care is a more holistic approach which includes the social component. The focus is on the patient, their views, experiences and needs. Risks associated with transitions, and failed transitions in patients' care pathways include increased morbidity; additional emergency department visits; duplication or loss of tests or treatments; and above all emotional and physical harm for patients and families. The final outcomes are that the patients' quality of life is at risk and expenses are generated for organisations and care systems.

Effective mechanisms to enable safe transitions were provided and include some key universal components. For example, early discharge planning; multidisciplinary teams; links with community support and partnerships with social institutions; collaborative culture between professionals; and resources to innovate and improve services. Transition of care consultation emerges from patients' and the family's individual needs. The objective is to empower and support the patient and the caregiver in the process of transition and adaptation back to the home. As this may take place after a long period of hospitalisation it can result in a profound change in patients' and families' lives. Therefore, it is necessary to plan, prepare and to adapt.

The second part of the session discussed Patient Journey Maps with Dr Axel Kaehne, Prof Rijken and Dr Hujala. Patient journey maps (PJM) are becoming very popular amongst other patient tools. Patient journey maps contain all the patient's contact points through a service. The map can be a simple, chronological sketch by a clinician or service manager. More advanced versions can map various services together including, for example, patients' emotional journeys. The PJM can also consider different alternatives and different forks in the patients care pathways. Two broad areas in which PJMs can make a difference are:

- Identify gaps in services which present barriers to access or smooth transition between services for patients and users by pulling together the various knowledge and information available.
- Help managers to understand the patient perspective broadening the discussion beyond budgets and outcomes and supporting managers to witness the patients' journey and the delays and glitches encountered.

Prof Rijken discussed the limitations of patient journey mapping for patients with chronic illnesses and provided recommendations for improvements to the tool. In the case of chronic illnesses, the goals for care and treatment are much more ambiguous. PJMs might simplify the patient journey too much. To capture the full patient experience, mapping should start before the person contacts the care facility. Maps should include a person's beliefs, attitudes, expectations, and emotions. Secondly, mapping tools reflect a traditional view of care that is delivered by professionals in a care facility. This ignores the key role of self-management of health and care. In chronic conditions, a major part of care is delivered by people themselves in their daily lives. Thus, mapping needs to start from the most important care setting – the home. Finally, the average patient does not exist and people with chronic conditions are a heterogeneous group. A chronic illness can significantly affect how much a person can contribute to their care and what they are willing to do in that respect. Therefore, patient segmentation needs to be included in patient journey mapping.

The speakers stated that if resources are invested to support better transitions of care, it will add direct costs but those would be offset by gains in the patient's quality of life. Patient mapping can result in significant cost reductions due to increased effectiveness of care. If transitions are not well managed, the patient returns to the hospital with the possibility of losing gains that were achieved. In conclusion, sometimes the importance of focusing resources on transitions of care must be introduced to managers and administrative decision-makers with quantitative evidence demonstrating the benefits to be gained from these tools.

Recommendations

- Effective mechanisms to enable safe transitions of care can be achieved with key components: early discharge planning; involve multidisciplinary teams; links with community support; partnerships with social institutions; a culture of collaboration between professionals from different areas and organisations; professional autonomy; and resources to innovate and improve services.
- Structured, patient-centred thinking can allow to improve the patient experience and reach the goals of efficiency, effectiveness and quality for the patient.
- Standardised processes and communication between health professionals support better coordination of care.

Take Home Messages

- Integration of care is motivated by increasing numbers of people living with chronic diseases, increased average life expectancy and a growing need for healthcare and associated social care.
- Transitions of care are elementary in care integration. Transition of care consultation emerges from patients' and the family's individual needs, with the objective to empower and support the patient and the caregiver during the transition to returning to their homes.
- The strengths of patient journey mapping are the knowledge and information that patient journey maps provides and the shift from organisational logic to the patient's perspective.

Managing the Digital Transformation

Speakers: **Ms Laura Cigolot,** Head of Secretariat, European Alliance for Access to Safe Medicines (EAASM); **Dr Rui Dang**, Senior Lecturer in Health Economics at Westminster International University in Tashkent and Visiting Professor in Demographic Economics at Gdansk University of Technology.

Moderator: **Ass Prof Dr Eva Turk**, University of Oslo, Norway; University of Maribor, Slovenia.

Summary

In this EHMA PIE Session, Ms Cigolot highlighted the pertinence of her presentation '*The European Collaborative Action on Medication Errors and Traceability (ECAMET)'* on World Patient Safety Day and, Dr Dang spoke on *'Linking Blockchain and Environmental Sustainability in Healthcare Management'*.

Ms Cigolot outlined that EAASM champions patient safety initiatives and embarked on a patient safety project on medication errors last year. Medication errors are a common cause of harm to patients, especially in acute care settings. Adverse events associated with medication errors contributed to prolonged hospital admissions, increased morbidity and mortality. The annual cost of medication errors is estimated to be $42 billion; almost all errors are preventable. In Europe, there is a lack of harmonisation of data. Additional data variability across the 27 members of the European Union is high regarding the risk of suffering one medication error in acute care settings. The main risk areas are those that combine high-risk patients with high-risk medications, such as intensive care units and oncology departments. The primary victims of medication errors are patients and their relatives, however healthcare workers, who make the error, are secondary victims and left traumatised by the adverse event.

EAASM created the 'The European Collaborative Action on Medication Errors and Traceability' (ECAMET), a European patient safety initiative with scientific organisations and healthcare professionals. ECAMET aims to tackle medication errors through the implementation of a Pan-European survey. Survey results will catalyse the identification, and sharing, of best practices and stimulate innovation at the hospital level across Europe via digital processes and internal dynamic behavioural changes. The ECAMET survey is an ongoing study conducted in hospitals in 12 European countries.

Preliminary findings show that almost all hospitals do not make their medication error data publicly available. It was identified that there is a lack of digitalisation and automation in European hospitals on medication management processes (preparing, delivery, and administration), and processes include many manual-based processes. This makes it difficult to estimate the number of medication errors. To improve medication safety performance most hospitals set targets to measure and monitor medication errors, yet in a significant proportion of hospitals trained healthcare professionals to detect errors do not exist. Most hospitals prescribing systems or drug dispensing systems are not available for all patients and are not always integrated with primary care. Such prescribing systems are often limited to oncology wards or ICUs. In the future further effective implementations of prescribing, or drug dispensing, systems are needed for surveillance and reduction of medication errors. However, the ECAMET survey identified funding, human resources, and untrained staff as the main obstacles to the implementation of innovative technologies to enhance medication management.

Dr Dang's topic of *'Linking Blockchain and Environmental Sustainability in Healthcare Management'* was inspired by discussions with information technologists prior to COVID-19. Dr Dang's talk explored how blockchain can support European healthcare systems to transition digitally to more environmentally sustainable systems, policy priorities for the Union. Technical advances, such as Blockchain, have the potential to help solve some sustainability questions. Blockchain is an immutable distributed database, a log of blocks, which are linked and replicated on full nodes. A block is a digital container that can be used for individuals' electronic records, insurance payments, and claims. Transactions are secured using public-key encryption. The code of each new block is built on that of the preceding block. This implies that cost reduces as the number of blocks increase. Blockchain guarantees that the block cannot be tampered with, and users are pseudonymised. Some trials with public blockchain have been undertaken in Estonia.

Dr Dang explained the difference between a public blockchain, where participants can join and leave freely, and private blockchain which connects private clinics and providers to patients. The characteristics and benefits of private blockchains were underlined for promoting a one-to-one relationship between the institution and user and facilitating sharing of e-records. Blockchain models may be particularly beneficial to patients with multiple morbidities, and long-term chronic diseases. Blockchain applications could be applied by health managers to supply chain monitoring and tracking, safe and effective medical data storage and transmission. Advantages of blockchain for health managers include full information traceability, decentralised information sharing systems and increased security. A 2020 Blockchain Policy report by the OECD highlighted how blockchain applications supported the combat against the COVID-19 pandemic and how its use in other parts of the health system. A European Commission recommendation on European Electronic Health Records in February 2019 advocated that Member States share electronic records to reduce the overdiagnosis and treatment of patients moving across borders. There is a potential for blockchain to facilitate the implementation of this recommendation.

Considering the environmentally sustainable impact of the implementation of blockchain in healthcare management several advantages including increased efficiency in healthcare delivery, reduced workloads, increased patient value and better patient outcomes are possible. Remodelling healthcare delivery arising from blockchain implementation would have a knock-on effect on reducing physical waste and energy consumption. The application of blockchain is compatible with the Sustainable Development Goals (SDGs), allowing managers, to monitor their compliance and progress on the SDGs. As an illustration of good practices, Prof Dang gave the examples of Care Chain and Disease Chain where blockchain has been implementation in primary care and to support holistic, health system communications.

Nevertheless, Prof Dang highlighted the difficulties of applying theory to practice, recognising the immaturity of the technology, and the ethical issues that derivate from a lack of legislation for Blockchain. The novelty that blockchain brings raises questions regarding healthcare professional shortages, familiarity with blockchain technology and, on the other hand, technology professionals who understand health system issues. Prof Dang concluded by highlighting the need to recognise the opportunities blockchain can provide in the creation of more equitable, efficient, and environmentally friendly healthcare services.

During the question and comment session Dr Eva Turk highlighted the concerns associated with data mining and blockchain and whether issues associated with bitcoin are transferable to the use of these technologies in healthcare. Dr Dang recognised that there are similarities between bitcoin and blockchain, however, blockchain is neutral compared to the rising controversiality of bitcoin. Blockchain when applied to healthcare sectors has high potential such as its application in diabetes care, with significant advantages for patient care, monitoring. disease management and personalised healthcare. In response to a question on how better performance in Medication Errors can impact healthcare staff motivation, improve psychological safety and be a starting point for culture transformation, Ms Cigolot reinforced the clear objective of ECAMET to address some of these issues calling on European institutions and Member States to promote regulations and guidelines on medication traceability to prevent medication errors.

Recommendations

- To address challenges from medication errors, health management should promote the introduction of traceability systems in hospitals.
- Enhance the European Commission Recommendation on a European Electronic Health Record exchange format (C (2019)800) of 6 February 2019, allowing Member States to share patient electronic records thus reducing the overdiagnosis and treatment of patients moving across borders.
- Prescribing systems or drug dispensing systems must expand to disciplinaries beyond oncology and ICU settings. Prescribing, and drug dispensing systems must be integrated into primary healthcare allowing professionals to measure and monitor medication errors in order to improve medication safety performance.
- Promoting regulations and guidelines on medication traceability will support effective implementation of prescribing, or drug dispensing, systems which are needed for surveillance and medication error reduction.
- Blockchain technology is still not ready to be implemented into practice, therefore, further research and innovation is needed to develop blockchain technology in healthcare.

Take Home Messages

- Most hospitals do not make their medication error data available to the public. Moreover, a lack of digitalisation and automation in European hospitals medication management (preparing, delivery and administration) processes exists. These processes include manual based processes contributing to difficulties estimating the number of medication errors.
- The implementation of blockchain at organisational level may enhance the patient-provider relationship, while supporting the rebalancing of health professionals' tasks.
- It is important to recognise the opportunities of blockchain technologies may have to create more equitable, efficient, and environmental-friendly healthcare services.