Using Evidence in Healthcare Management

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Contents

Dear Colleagues,

We are very glad to welcome you all today.

As you know, the HOPE Exchange Programme was interrupted for two years. This was the first time in 40 years we had to stop it.

And of course, we have not been able to organise the traditional Agora that closes it.

I would then like to thank you: the HOPE Exchange Programme participants. Most of you were candidates already in 2020. You had the patience to wait, this shows your commitment!

A second thank goes to your hosts. Some of them are in the room. We hope to get many more next year.

I would also like to thank National Coordinators for their commitment to the HOPE Exchange Programme. Without them, there would be no Programme.

The topic of the Agora this year was the topic planned for 2020: "Using Evidence in Healthcare Management".

It directly follows and builds on the HOPE Agora 2019 which topic was "Evidence-Informed Decision-making in Healthcare Management".

This approach means that policy-making and managerial decisions should be based on best available evidence and not on beliefs and long-established practices.

We had started this work already in 2018 with an Agora in 2019 Ljubljana. We are glad that our partners who were with us in 2019 accepted to continue the work:

- *Niek Klazinga who is working at the OECD and at the Amsterdam University Medical Centre and of HealthPros;*

- *Damir Ivanković, part of the same Amsterdam UMC and of HealthPros.*

They are joined today by Sofia Carvalho, part of the same Amsterdam UMC and HealthPros.

For this day and a half, we organised the programme in four parts.

We will start with Niek and his team for an Academic session: presentations followed by a Round-table.

We will then start with the feedback of HOPE Exchange Programme participants by country of destination.

Tomorrow morning, we will start with other feedbacks, interrupted by the World Café.

There will be the last round of presentations and then we will conclude by meetings of participants with their National Coordinators by country of origin.

Dr Urmas Sule, HOPE President and Chairman of the Board of the Estonian Hospitals Association.

Introduction

On 3 and 4 June 2022, HOPE Agora 2022 took place in Brussels focusing on the theme "Using Evidence in Healthcare Management". For more than 30 years, HOPE is organising at the end of its annual Exchange Programme an evaluation meeting renamed more recently Agora.

Participants spend four weeks in a European country to learn about how similar healthcare issues are tackled differently. About 150 participants were present at the Agora this year to share good practices related to evidence in healthcare management that they had identified during their stay in the host country. It directly followed and built on the HOPE Agora 2019 which topic was "Evidence-Informed Decision-making in Healthcare Management".

The approach of "evidence-based medicine" was understood as meaning that policy-making and managerial decisions should be based on best available evidence and not on beliefs and long-established practices. In increasingly complex health systems, the ability to use all types of available evidence to improve decision-making in healthcare is crucial to ensure that citizens are offered the best care possible.

On 3 June, the HOPE Agora was chaired by HOPE President Urmas Sule. The first part of the day was dedicated to presentations from the Amsterdam University Medical Centre / University of Amsterdam. Niek Klazinga, also working at the OECD, presented six parameters which drive hospitals for the better during the COVID-19 period. Damir Ivanković, member of the HealthPros network, made a presentation of the "Beyond hospital data" Project related to changes in governance and the use of data during COVID-19. His colleague Sofia Carvalho reviewed the impact of COVID-19 on clinical pathways for acute myocardial infarction, cancer, and acute care.

Then, a 50-minute panel discussion went on the theme "Sustainability of changes for the better", chaired by Niek Klazinga. Damir Ivanković and Sofia Carvalho were joined by three other panellists: Helle Kruuse-Andersen, Danish HOPE Exchange participant in the Netherlands; Bill O'Reilly, Irish HOPE Exchange participant in Germany; and Antoine Malone, HOPE French National Coordinator. The panel was followed by the first presentations of HOPE Exchange Programme participants who stayed in Austria, Switzerland, Germany, Denmark, and Estonia.

On 4 June, the Agora was chaired by HOPE Vice-President Eamonn Fitzgerald. This second day was dedicated to other HOPE Exchange Programme participants' presentations regarding good practices identified in their host country: Finland, France, Greece, Ireland, Italy, Latvia, Netherlands, Poland, Portugal, Serbia, Spain, United Kingdom. Over the course of the day, a World Café was also organised to allow participants to share their experiences and ideas around different topics. The Agora ended with the meetings of participants by country of origins.

Conference

After the opening speech of HOPE President Urmas Sule, three academics from the Amsterdam University Medical Centre (UMC) / University of Amsterdam gave presentations on different topics:

- The first presentation made by Niek Klazinga was about "Hospitals during COVID-19: Changes for the better?";
- Damir Ivanković's presentation dealt with "Beyond Hospital Data: Changes in governance and data use during COVID-19?";
- The last presentation given by Sofia Carvalho focused on the "Impact of COVID-19 on clinical pathways for AMI, cancer, and acute care".

Afterwards, a Round-table went on "Sustainability for the future — a panel of discussion" chaired by Niek Klazinga, OECD, Amsterdam UMC / University of Amsterdam and member of HealthPros. The panel was composed of Sofia Carvalho, Amsterdam UMC / University of Amsterdam, HealthPros; Damir Ivanković, Amsterdam UMC / University of Amsterdam, HealthPros; Helle Kruuse-Andersen, Danish HOPE Exchange Programme participant in the Netherlands; Antoine Malone, French National Coordinator; and Bill O'Reilly, Irish HOPE Exchange Programme participant in Germany.

Presentation 1 — Hospitals during COVID-19: Changes for the better?

Niek Klazinga, OECD, Amsterdam UMC / University of Amsterdam, HealthPros

Niek Klazinga started his speech with a global question: what does "changes" mean and above all, what does it mean *"changes for the better"*? On this premise, he first presented six parameters/drivers which have led to the construction of hospitals:

- **Knowledge and technology:** how do hospitals develop new knowledge and technologies? New knowledge and technologies create new specialities, guidance, and tests. While they had been developed during the 20th century, the dynamic started to shrink during the 21st century.
- **Professionalisation of the workforce:** how do professions develop themselves? The process of professionalisation emerged in the 1990s-2000s where, for instance, the nursing profession specialised in different branches.
- **Organisation of activities of the professionals:** how do we organise the activities of these professionals when they use new knowledge and technologies? There was a big shift of organising from the acute care to organising from the chronic care. Besides, a balance emerged between clinical departments and the outpatients' part with a focus on patients.
- **Patients and citizens:** what do patients think and expect from hospitals? When do patients/citizens/consumers use care? These questions involve considering mobility patterns as well as the population and examining how to translate the demands.
- **Ownership:** who owns hospitals? Are they public or private? There are ownership differences in the way hospitals have historically been established (church, private initiatives, public sector).
- **Financing:** are hospitals public or private? Are they profitable or not?

Niek Klazinga then discussed the impact of the COVID-19 on these six parameters and whether the pandemic has resulted in positive changes in hospitals.

Concerning the first parameter — new knowledge and technology — the positive change induced by the pandemic has been the quick digitalisation of the healthcare with the spread of teleconsultation. This phenomenon has compensated the difficulty to go to hospitals as they were overloaded with the COVID-19 patients.

On the second parameter — professionalisation of the workforce — healthcare professionals had been already under pressure before the pandemic due to the high workload, tiredness, and depression. One positive change was the appreciations of healthcare workers in many countries who were perceived as heroes by the citizens. Yet, what does it mean in terms of further professionalisation? Niek Klazinga highlighted the problem of the rigidity of training programmes and the necessity to implement more flexibility, competences, and knowledge.

To face future pandemics and crises, he recommended redesigning our healthcare systems with a new organisation of professions by considering welfare and the patient safety culture.

Concerning the third parameter — organisation of activities of the professionals — hospitals realised that they had to work together to ensure the COVID-19 patients' continuity of care. Indeed, one positive change was the intensification of the collaboration between primary, secondary, and long-term cares. Moreover, there was a shift from hospitals services to integrated delivery models by considering the broader population.

Regarding the fourth parameter — patients and citizens —the pandemic has led to the drop of the demand combined with a disruption of care due to the critical focus on COVID-19 care. This disruption has impacted the hospitals capacities and increased patients' waiting times. What happened in the demand and the needs? Do people still trust in healthcare? Indeed, one important layer mentioned was trust. For instance, on the issue of vaccination, citizens' opinions were polarised.

On the fifth parameter — ownership — the pandemic has led governments to push quickly for a central coordination also in the private systems, to manage scarcity and capacities as well as to transfer COVID-19 patients from regions to another. The relationship between the private and public sectors has thus shifted to public services involving state control to deal with shortages and distribution problems.

Finally, on the sixth parameter — financing — the pandemic highlighted the need of new fundings for the healthcare sector and hospitals. As such, new arrangements were adopted to financially support hospitals to continue their work.

Presentation 2 — Beyond Hospital Data: Changes in governance and data use during COVID-19?

Damir Ivanković, Amsterdam UMC / University of Amsterdam, HealthPros

In his presentation of the "Beyond Hospital Data" Project, Damir Ivanković described the long history of HOPE in building and maintaining a community of healthcare professionals with managerial responsibilities around Europe, mostly affiliated to hospitals. Since the outbreak of the COVID-19 pandemic, the HOPE community has been on the frontlines of fighting the crisis. For this reason, HOPE members were highly relevant partners in exploring the impact of the COVID-19 pandemic on data-driven collaboration between hospitals and healthcare organisations in Europe during 2021. HOPE members were also relevant partners in keeping in touch with each other and exchanging experiences, even during the 2020-2021 Exchange Programme hiatus.

In 2021, the "Beyond Hospital Data" Project consisted in a rapid survey (January - February 2021), interviews to collect country case studies (April - June 2021), two webinars (February and June 2021) and a scientific paper (submission planned for June 2022). Damir Ivanković presented the results of the Project though the question: "How has the COVID-19 influenced data-driven collaboration around Europe?". The results showed that collaboration between healthcare organisations during the COVID-19 pandemic has increased. Indeed, public health institutions have increased their volume of data exchange, followed by hospitals, long-term care institutions, and finally primary care providers.

The data-driven collaboration during the pandemic has had positive effects in terms of more (online) collaboration and interaction; testing, treatment, and vaccination as a test for data systems (infrastructure and/or governance); improvements in semantic and technical aspects of data exchange; improved links to other care levels and organisations and improved links within the

organisation itself. The negative effects identified were the siloed data systems and governance; the one directional sharing of data; and the unorganised data production.

Damir Ivanković highlighted three priority areas of data-driven collaboration — partnership, care provisions and data infrastructures — illustrated by several positive examples. As a matter of fact, Belgium history shows that public hospitals have been distant from private hospitals. However, when the crisis started, an existing network of five Brussels hospitals, including two of the largest private hospitals, was implemented to discuss the COVID-19 patients and exchange real-time data.

At the peak of the pandemic, weekly meetings were held between medical directors of all seven hospitals, public and private, to identify the specific needs. Dashboards were developed which included data from all seven hospitals. The discussion to add private hospitals to the network started pre-COVID-19 but when the pandemic struck, the decision was made in two days.

In Ireland, agreements between the government and the private hospitals enabled provision of surge capacity care in private hospitals during the peaks of the pandemic. Prior to the pandemic, public and private hospitals in Ireland shared little to no data between each other. During the pandemic, the Health Service Executive initiated "safety net" agreements with multiple private hospitals. This enabled provision of surge capacity care to patients in private hospitals during the peaks of the pandemic and dealing with backlog in diagnostic and therapeutic procedures, following peaks.

To be able to link data across organisations, a nation-wide temporary unique patient identifier was introduced. Administrators in the public hospital would first assign this number to a patient and then communicate it to the private hospital. Private hospitals then logged everything under this code. This worked well but was very manual (Input, print, scan, email etc.).

In France, while impossible in the past, collaboration and communication between public and private hospitals have become a reality with the onset of the pandemic. Indeed, if the two sectors have traditionally been in competition, in April / May 2020, November 2020 and, most recently, in March 2021, during peak waves of the pandemic, both Ministry of Health and Regional Health Authorities, invited public and private sectors to the same table to share information and coordinate provision of care.

In the Netherlands, a new IT system connecting and integrating geriatric hospital departments and long-term care homes in Amsterdam (and beyond) hospitals in the Netherlands was set up. While hospitals were usually competing with each other because of volume-based contracting agreements, the pandemic sped the development and the implementation of several IT systems that connect hospitals and long-term care institutions in Amsterdam (and later in the whole NoordHolland province). This enabled to transparently see and manage hospitals and long-term care bed capacity, the exchange of doctors and nurses' letters and later full patients' electronic health records among organisations. Nowadays, because of the COVID-19, everybody knows a lot more about each other.

Despite these positive developments, Damir Ivanković was in the end sceptical regarding the sustainability of these improvements as the rate of progress is already slowing down. He argued that emergency thinking should stop. While some longer lasting improvements will remain, new challenges are to emerge, such as the financial sustainability of the system, which was largely ignored during COVID-19, as well as catching up on delayed care and returning patients to hospitals.

Presentation 3 – Impact of COVID-19 on clinical pathways for AMI, cancer, and acute care

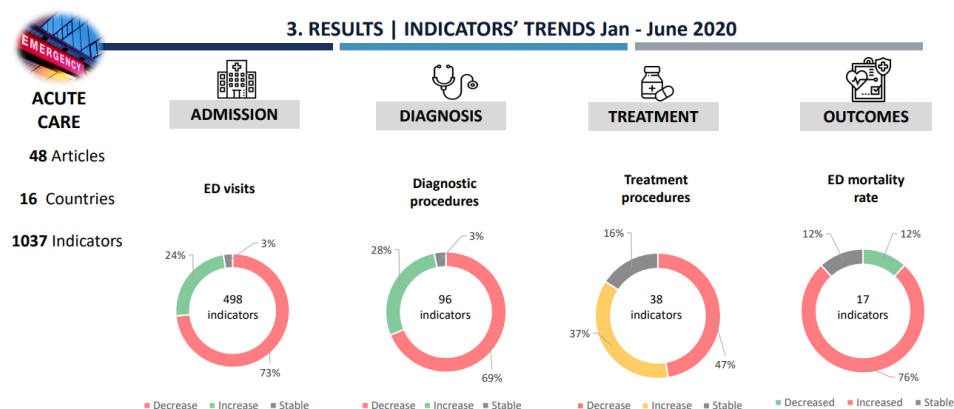*Sofia Carvalho, Amsterdam UMC / University of Amsterdam, HealthPros*

Sofia Carvalho presented the survey dealing with the impact of the COVID-19 on clinical pathways for AMI/cardiac, cancer, and acute care. She emphasised the relevance and the challenges of monitoring the impact of the pandemic on regular care. Indeed, the COVID-19 has led to the disruption of essential health services and to an excessive mortality.
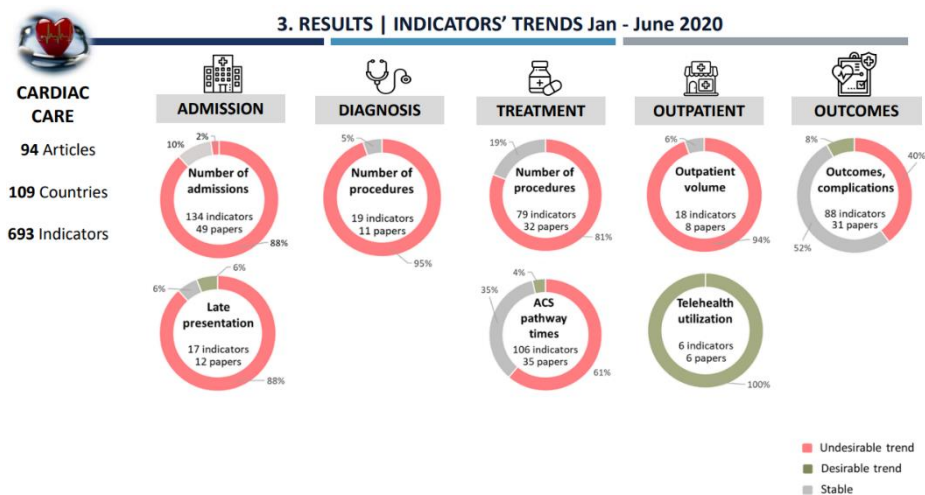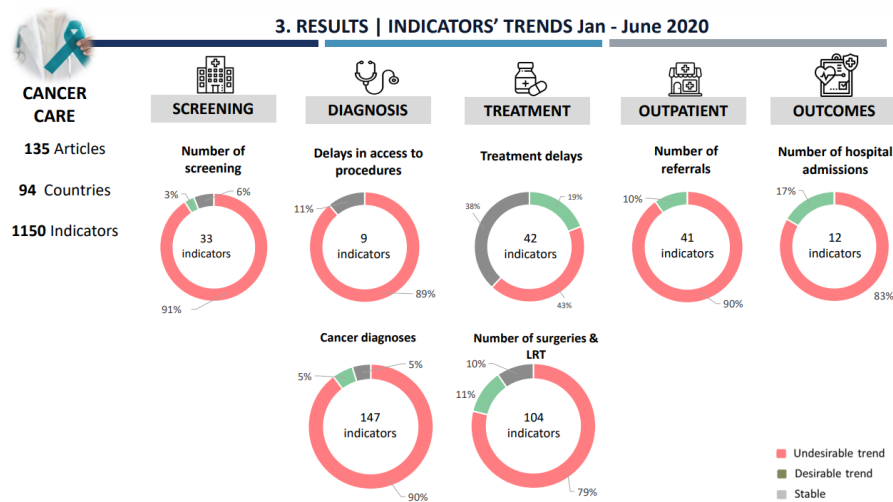

Challenges included the lack of strong national health information systems with national dataset linkages, the fact that only a few countries have sufficiently recent data for decision-making, and the need for international comparisons to be based on standardised definitions and common data models.

Her survey was elaborated based on the analysis of many studies produced throughout the world. 6277 studies were first screened, then 838 studies were included for full-text review, and 277 studies were in the end included in the review. As a result, for AMI/cardiac care, 94 studies and 693 indicators were identified; regarding the cancer care, 135 studies and 1150 indicators were used; and the category of acute care comprises 48 studies and 1037 indicators.

Sofia Carvalho gave an overview of the results of the impact of the COVID-19 pandemic on AMI/cardiac, cancer, and acute care in terms of admission, diagnosis, treatment, outpatient visits and outcomes between January and June 2020.

CANCER CARE

135 Articles

94 Countries

1150 Indicators

SCREENING	DIAGNOSIS	TREATMENT	OUTPATIENT	OUTCOMES

SCREENING

Number of screening

3% 6%

33 indicators

91%

DIAGNOSIS

Delays in access to procedures

11%

9 indicators

89%

Cancer diagnoses

5% 5%

147 indicators

90%

TREATMENT

Treatment delays

38% 19%

42 indicators

43%

Number of surgeries & LRT

10%

11%

104 indicators

79%

OUTPATIENT

Number of referrals

10%

41 indicators

90%

OUTCOMES

Number of hospital admissions

17%

12 indicators

83%

Legend:
- Undesirable trend
- Desirable trend
- Stable

CARDIAC CARE

94 Articles

109 Countries

693 Indicators

ADMISSION	DIAGNOSIS	TREATMENT	OUTPATIENT	OUTCOMES

ADMISSION

10% 2%

Number of admissions

134 indicators
49 papers

88%

6% 6%

Late presentation

17 indicators
12 papers

88%

DIAGNOSIS

5%

Number of procedures

19 indicators
11 papers

95%

TREATMENT

19%

Number of procedures

79 indicators
32 papers

81%

35% 4%

ACS pathway times

106 indicators
35 papers

61%

OUTPATIENT

6%

Outpatient volume

18 indicators
8 papers

94%

Telehealth utilization

6 indicators
6 papers

100%

OUTCOMES

8% 40%

Outcomes, complications

88 indicators
31 papers

52%

Legend:
- Undesirable trend
- Desirable trend
- Stable

In the three cases, data were mostly administrative. Other data sources (registry, survey, claims, prescribing and clinical sources) were also used with various degrees to analyse the three types of care.

Sofia Carvalho concluded that there have been changes in seeking care patterns, deterioration of indicators along the care pathway and adaptation and innovation in the healthcare system. She indicated a series of recommendations to fight against the deterioration of AMI/cardiac, cancer, and acute care: addressing backlog, developing indicators to monitor care pathways, improving data infrastructure and linkage, monitoring continuity of care timely and transparently in future crises.

Sustainability for the better — a panel of discussion

Chair:

Niek Klazinga, OECD, Amsterdam UMC / University of Amsterdam, HealthPros

Panellists:

Sofia Carvalho, Amsterdam UMC / University of Amsterdam, HealthPros
Damir Ivanković, Amsterdam UMC / University of Amsterdam, HealthPros
Helle Kruuse-Andersen, Danish HOPE Exchange participant in the Netherlands
Antoine Malone, French National Coordinator
Bill O'Reilly, Irish HOPE Exchange participant in Germany

Helle Kruuse-Andersen highlighted the importance of strengthening collaboration in the healthcare sector and of putting out barriers by using real-time data. She described the case of the Dutch healthcare system, which she had discovered during her exchange and where she had noticed new structures and how working together in different way, with the use of one database. Beyond data, she perceived that the relations also matter through the collaboration and generosity between health actors including healthcare professionals, primary hospitals, the Ministries etc. Hence, policymakers should reflect on a combination between data and healthcare professions to encourage collaboration.

As having been an engineer in the healthcare industry, Bill O'Reilly argued that health management should learn from the industry. He observed that while data is relevant for healthcare management, data management specialists are still missing in the healthcare system to build security systems and resilience. Indeed, cyber-attacks during the COVID-19 put down healthcare infrastructures. In addition, he considered that real-time data have been crucial during the COVID-19 to get quick information and to make decision-making happened faster. As he had visited Germany during his exchange, he also compared the German and the Irish healthcare systems and concluded that it was

important to have an integrated healthcare system, especially during the pandemic, to share services and infrastructures, resources, skills, especially IT skills.

Furthermore, Antoine Malone also developed the idea that data are critical for any healthcare organisations. In France, the COVID-19 has been an accelerator to work in an integrated manner with changes in the way data were apprehended. The use of data has also allowed hospitals to gain a central role in crisis management during the pandemic. Indeed, vaccination data led to quickly set up the delivery of vaccines. IT was run in the hospitals and people could see the benefits of data for monitoring the vaccination to know how many people were vaccinated and how many still need to be. Moreover, he highlighted the need to build a sustainable healthcare system and to implement a large-scale data infrastructure.

Regarding AMI, cancer, and acute care, Sofia Carvalho emphasised the need of data to build dashboards. She also raised the issues of time and flexibility. Damir Ivanković briefly discussed the monitoring role of hospitals with data linked to the "Beyond Hospital Data" Project previously presented.

Regarding the impact of the COVID-19 on the development of data infrastructures, Bill O'Reilly considered that further resources and better information will be necessary to plan the construction of these infrastructures in the future. Helle Kruuse-Andersen agreed with him and pointed out the lack of money while patients' access to treatments and diagnostics is still a concern.

On this issue, Antoine Malone welcomed the fast development of the use of databases during the French vaccination campaign. Nevertheless, he argued that it is unnecessary to invest in the development of complex databases. It is today easier to use infrastructures that transmit simple and clear information than ones that spread complex data. Damir Ivanković agreed with him and stressed on the necessity to receive financial support and to think about the reason and the purpose when collecting data.

The panel concluded with last reflections about sustainability and positive changes resulting from the COVID-19 pandemic. Overall, the speakers were quite optimistic regarding the future. Bill O'Reilly encouraged to strive to make our system more efficient and hoped that if a similar situation happens again, we will have learnt from the COVID-19. Helle Kruuse-Andersen and Antoine Malone recommended developing more data professions in the hospitals. Antoine Malone also highlighted the need to target people who were at risk during COVID-19, patients suffering from chronic diseases such as diabetes, or people coming from poor neighbourhood such as migrants. Finally, Sofia Carvalho emphasised some remaining challenges to consider, including the cases of long COVID.

World Café

HOPE organised for the fourth time a World Café during its Agora. Participants were invited to share the most interesting examples they had found during the HOPE Exchange Programme as well as other practices they had been aware of. Thanks to three rounds of exchanges, participants were asked for their opinions about the most valuable evidence-based healthcare management practices/innovations that they had discovered during their Exchange Programme, implemented due to the COVID-19 crisis

The World Café methodology is a simple, effective, and flexible format for group dialogue. It aims at harnessing collective wisdom and not at reaching a resolution. The process began with the first of three 20 to 30-minute rounds of conversation for the group seated around a table. At the end of the round, each group member moved to a different table. Staying behind on each table was the table host for the next round, who welcomed the following group and briefly filled them in on what happened in the previous round. Each round was prefaced with a question designed for the specific context and desired purpose of the session. Afterwards the individual group members were invited to share the insights of other results from their conversations with the rest of the large group. The World Café offered different opportunities to exchange ideas and examples as a discussion and starting point to spark new questions as participants learn about the context their colleagues work/live in and what they found.

Bearing in mind the six parameters/drivers presented by Niek Klazinga at the beginning of the Conference, the participants were invited to answer during the three rounds to the question: following on from the impact of COVID-19, what were the most valuable evidence-based healthcare management practices/innovations that you discovered during your Exchange Programme — in respect of the following key areas?

The first round was dedicated to evidence-based practices/innovations regarding the "rest" — recognising, and supporting, staff to maintain their physical and mental health and wellbeing, both during the COVID-19 pandemic and afterwards. In the second round, participants were invited to discuss evidence-based practices/innovations regarding "restore" — attraction, recruitment, and retention of staff, in the post-pandemic era, organisational culture and building the new workforce. Finally, the last round focused on the theme "recover" — re-establishing disrupted services, addressing health inequalities, rebuilding trust in patients/citizens, systems integration, structure of organisation, national policy, ways of working, building for sustainable (Net Zero) healthcare in the future etc.

Presentations by HOPE Exchange Programme participants

Every year after the four weeks abroad, the HOPE Exchange Programme participants are invited to the Agora to shortly present a maximum of three examples of good practices concerning the topic of the year — this year, examples of using evidence in healthcare management — identified in the country of destination.

HOPE Exchange Programme participants 2022 and the National Coordinators.

HOPE Exchange Programme National Coordinators 2022.

AUSTRIA

HOPE National Coordinator: Claudia SEDLMEIER

Exchange participants 2022:
>Frederieke DE BRUIJN, Netherlands
>José GARNACHO-MONTERO, Spain
>Oliver GUTJAHR, Switzerland
>Katarzyna KOCH-BRZOZOWSKA, Poland

After a brief presentation of Austria, the participants listed good practices of using evidence in healthcare management that they had discovered during their exchange which referred to **patient safety, quality of healthcare, risk management, lean management, patient information, and specialised hospitals.** The participants also focused on the **Health Technology Assessment (HTA).**

HTA was defined as a multidisciplinary process that summarises information about the medical, social, and ethical issues related to the use of a health technology in a systemic, transparent, unbiased, and robust manner. It aims to inform the formulation of safe, effective, health policies that are patient focused and seek to achieve best value.

Despite its policy goals, HTA is always firmly rooted in research and the scientific method. HTA intends to provide decision support for the health systems (health policy, providers, payers, users, developers) on resource allocation, for instance, by speeding access to effective health innovations, avoiding waste of health system resources and unexplained variations as well as ensuring equity of coverage (distributional justice).

The participants presented the example of the **ELGA System elektronische Gesundheitsakte (Electronic Health Records).** This is an information system which aims to simplify the access to health records for patients and doctors, as well as other healthcare professionals, care facilities and pharmacies. It provides e-medications, health records management, and communications between healthcare providers.

Furthermore, the participants mentioned the example the **pancreatic surgery** used by the Vinzenz Gruppe, one large private sponsors of non-profit healthcare facilities in Austria. They found that pancreatic surgery decreased perioperative mortality and increased probability of survival of patients.
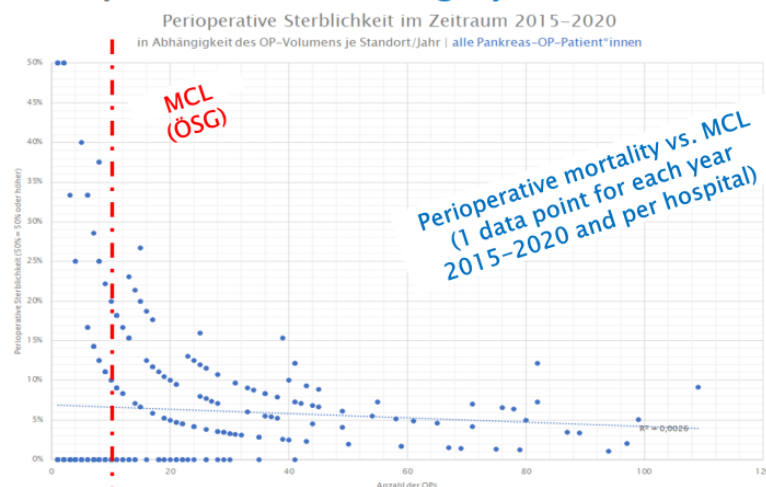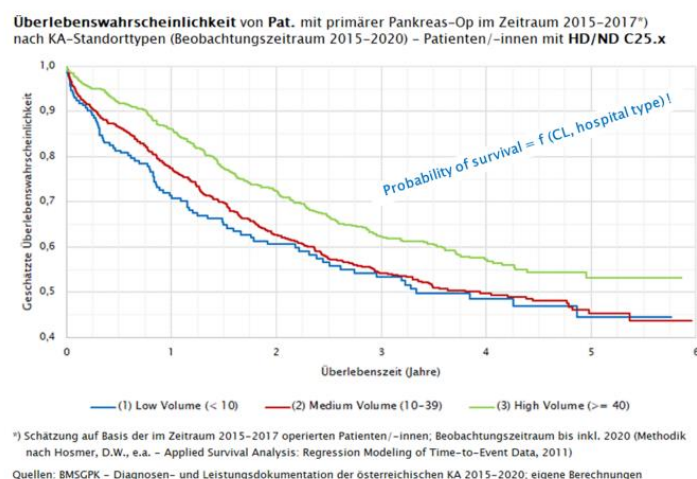
Another example of specialised management was discovered in the Vienna General Hospital. Between January 2020 and April 2021, the **extracorporeal membrane oxygenation (ECMO) treatment** administered early to COVID-19 patients increased their chance to survive. The 28-day-mortality was 25.4%, with a total of 61 patients surviving.

As a conclusion, the participants emphasised key aspects that they had learnt from this exchange: the sharing of experiences, the existence of similar challenges, the digitalised systems with ELGA, the diversity of health departments and the fact that collecting data in a good quality is the key to evidenced health management.

DENMARK

HOPE National Coordinator: Thomas ENGSIG-KARUP

Exchange participants 2022:

Dagmar BIRKNER-BINDER, Switzerland
Liz CULLEN, United Kingdom
Carissa GILBERT, United States/United Kingdom
Petra KAUPE, Austria
Joana SERINGA, Portugal

Culture was presented by the participants as the key to the Danish healthcare system through three aspects. First, **people are at the core.** This means that healthcare staff and patients work together, and policies are implemented by taking patients into account. Second, the **Danish healthcare system is constantly improving.** For instance, through databases, healthcare workers can upgrade their skills. Third, the **culture of innovation into practice** is important. Ideas and proposals are encouraged and picked up.

The HOPE Exchange Programme participants reported one evidence-based healthcare example of the radiotherapy **particle therapy** which they had discovered at the Aarhus University Hospital. Thanks to evidence-based healthcare at work, patients' treatments and experiences are improved, research and education are encouraged, international collaboration across Europe is promoted, and pioneering treatments are proposed. However, the expense is astronomical and clinical evidence is crucial to obtain funding. Particle therapy is today expanding throughout Europe to reduce morbidity. Indeed, Denmark is collaborating with other partners across Europe and is presented by the participants as the leader in gathering sufficient clinical evidence to support the expansion of the availability of particle therapy.

Another example of evidence-based healthcare good practice was **the 3D Print Centre.** Based on innovative treatment approaches, engineers, physicians, doctors, and prosthetists work together to provide customised solutions for patients by building prosthetics with a 3D print. As a result, patients receive highly specialised and personalised solutions. There is therefore an improvement in patient safety and outcomes, reducing surgical time and post-operative complication reduction. This innovation is an example of building in-house solutions.
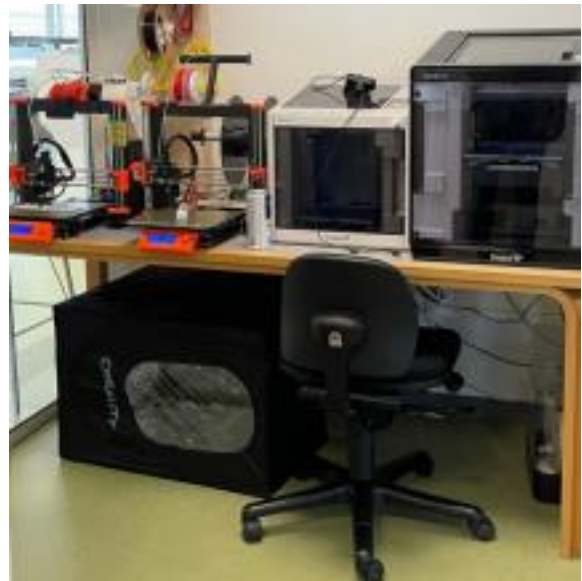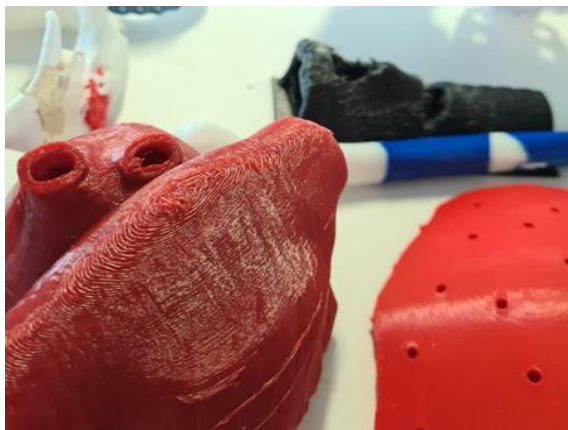
ESTONIA

HOPE National Coordinator: Hedy EERIKSOO

Exchange participants 2022:
Mette Byrgiel BACH, Denmark
Christian ELGER, Austria
Simon REKANOVIC, Slovenia

The HOPE Exchange Programme participants focused on the **digital society** in Estonia. One key element of the e-Estonia is the **X-Road Platform**, a device which implements evidence-based decision-making strategy. Set up in 2001, the X-Road Platform is a secure and interoperable open-source data exchange platform that healthcare workers and institutions can use. It saves three million working hours annually with over 3000 different services and over 2.5 billion of transactions per year.

The first good practice in using evidence in healthcare identified by the participants was the **dashboard with KPIs** from the Tartu University Hospital. It is a dashboard that aggregates the publicly patients' available data and produces a patient recommendation index with actionable metrics coming from the user of the system.

Another good practice discovered is the **Mobile Eye Clinic** at the East Tallinn Central Hospital. To estimate the prevalence and risk factors of myopia among children and young people in Estonia, ophthalmologists from the East Tallinn Central Hospital and the Tallinn University of Technology developed a data collection system for the research on the causes of myopia. They use a random sample of schools in Estonia to conduct eye examinations and myopia prevention with questionnaires, diary, and school-based criteria.

The last good practice identified is the **evidence-based outcome measures** at the Haapsalu Neurological Rehabilitation Centre. It provides a holistic view on rehabilitation treatment through a function independent method (FIM) (i.e. to regain movement), a function attentive method (FAM) (i.e. cognitive) and with specialists meeting the patient in teams. It involves BI software and local software that collect data including current bed occupancy; current, past, and future financial goals; waiting list; feedbacks from patients and employees. A system to measure patient's activity outside therapeutic treatment is under development.

The messages that participants took away were: having a system that automatically collects data opens up possibilities; by collecting data it is possible to analyse and make informed decisions; and this approach requires openness.

FINLAND

HOPE National Coordinator: Anu NEMLANDER

Exchange participants 2022:

María del Carmen CANET CORTÉS, Spain
Linda GROOL ROMBOUT, Netherlands
Lidia PASCUCCI, Italy
Hannes PREGESBAUER, Austria
Birgitte TSCHENTSCHER ESPERSEN, Denmark

By January 2023, Finland will implement the **Healthcare, Social care and Rescue service Reform** which aims at tackling healthcare challenges, similar than those encountered across Europe, such as nursing shortage, ageing population, costs of healthcare, aftercare facilities decrease etc. The priorities of the Reform are having people-centred services, the participation of residents and responsibilities of wellbeing services counties. This Reform will be trying to reorganise special healthcare, distributed between the five university-hospitals, to reduce health and social care services organisations as well as to review the fundings because the resources will not anymore come from municipalities but from the government. To benefit people, the Reform focuses on self-acting clientship-self-integration, self-care/self-management, good instructions for different kind of situations and digital technologies.
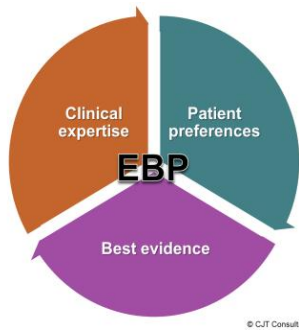
The Finnish Healthcare Reform aims to use evidence at different levels of governance: macro level (policymakers), organisational level (hospital managers), micro level (healthcare professionals). The use of evidence concerns clinical expertise, patient's preferences, and best evidence. It is not just about data, as specific cases require judgement.

At the Kupio Hospital, the HOPE Exchange Programme participants discovered the **medication management**. Accordingly, this process is a high automatisation standard without any humans being involved. It implies an automated stock-control and dispensing in the pharmacy, an automated drug dispensing systems on the ward and an RFI-based Single Lock Medication Cart. It aims at improving patient's safety by reducing errors, improving productivity of the medicine processes by saving times and reducing costs.

Another example of using evidence in healthcare management was the **e-examination for nurses.** To make sure that nurses keep their skills up to date according to best practices, nurses must take an e-exam every five years. All nurses take a computer-based examination called LOVe — the Finnish license required to administer medication to patients. The examination includes basic knowledges, specialty subjects, and a practical examination. The universities co-operate on designing the examination and the preparatory material (based on National Guidelines). The employer pays the examination fees, and a local coordinator signs up the nurses and keeps track.

FRANCE

HOPE National Coordinator: Antoine MALONE

Exchange participants 2022:

Måns BJÖRKLUND, Sweden
Jerome BONHOMME, Belgium
Michele CIRO TOTARO, Italy
Tymoteusz MANKOWSKI, Poland
Victòria OLIVÉ CRISTANY, Spain
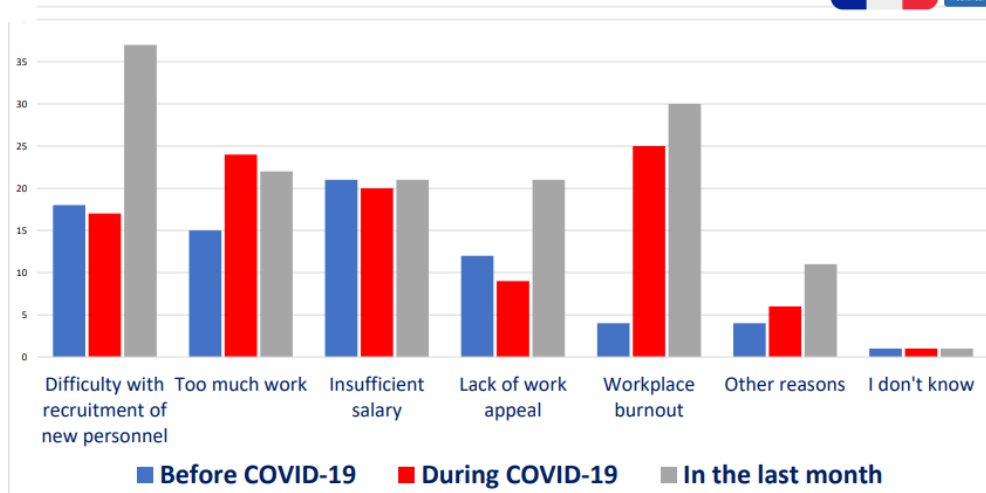Álvaro TOJINHA, Portugal

During their stay, the HOPE Exchange Programme participants in France focused on the **COVID-19** across six hospitals through observations, feedbacks by teams, and surveys. More precisely, they studied three themes: the **healthcare personnel shortages**, the **management of hospital beds** and the **lack of medical materials**. Each study consisted of a comparison before, during, and after the pandemic.
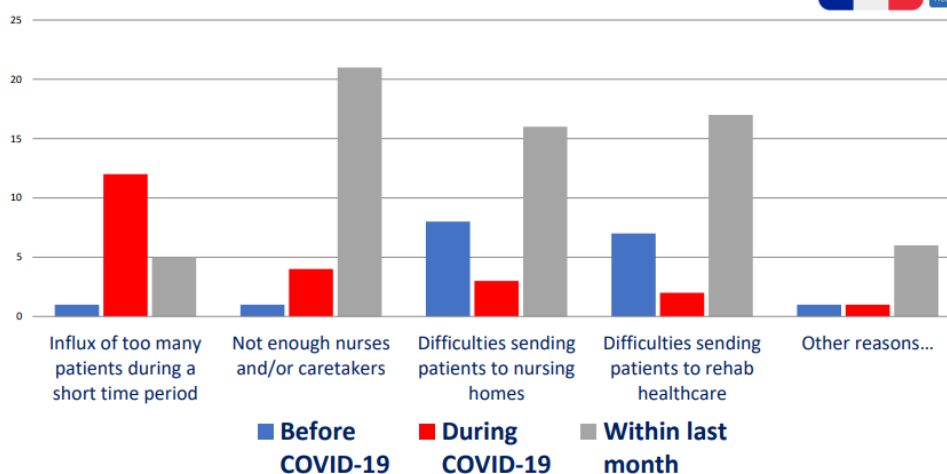
With regards to bed and medical materials shortages, they found that if there had been shortages before and during the pandemic, there was a slowly resolving. Regarding personal shortage, this had not been significant before the pandemic, and they discovered that deteriorating working conditions during the health crisis as well as recruitment problems led to a significant lack of health staff.
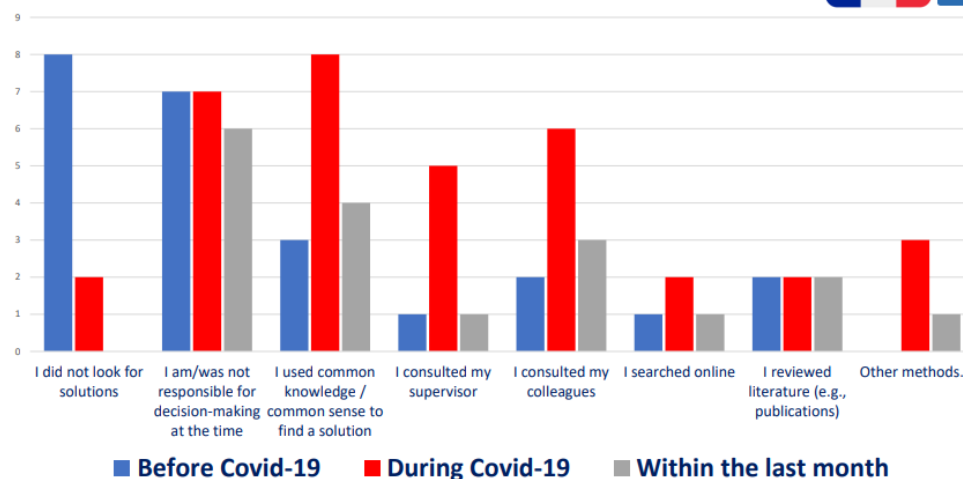
Personnel Shortage: Causes

Categories: Difficulty with recruitment of new personnel, Too much work, Insufficient salary, Lack of work appeal, Workplace burnout, Other reasons, I don't know

Legend: ■ Before COVID-19 ■ During COVID-19 ■ In the last month

Hospitals Beds: Causes

Categories: Influx of too many patients during a short time period, Not enough nurses and/or caretakers, Difficulties sending patients to nursing homes, Difficulties sending patients to rehab healthcare, Other reasons…

Legend: ■ Before COVID-19 ■ During COVID-19 ■ Within last month

Medical Materials: Finding solutions

Categories: I did not look for solutions, I am/was not responsible for decision-making at the time, I used common knowledge / common sense to find a solution, I consulted my supervisor, I consulted my colleagues, I searched online, I reviewed literature (e.g., publications), Other methods…

Legend: ■ Before Covid-19 ■ During Covid-19 ■ Within the last month

As such, the participants analysed solutions to the three main issues. First, to face the shortage of health staff, the solution was having a **lean management**. As a matter of fact, the team and management used a board where all the staff at hand were presented with their level of knowledge in terms of COVID- 19 and speciality.

Second, to tackle the shortage of beds, the Poitiers Hospital used the **Emergency Room Improvement Plan** which was expected to control the daily random entries aiming to determine the required overall bed capacity in hospital care units to accommodate these patients. The results showed a strong variation of the hospitalisation rate each day. Hence, a specialised software to determine the number of beds necessary to be reserved for emergency room patients was set up. It crossed the needs of emergency room patients with percentage of hospital occupation.
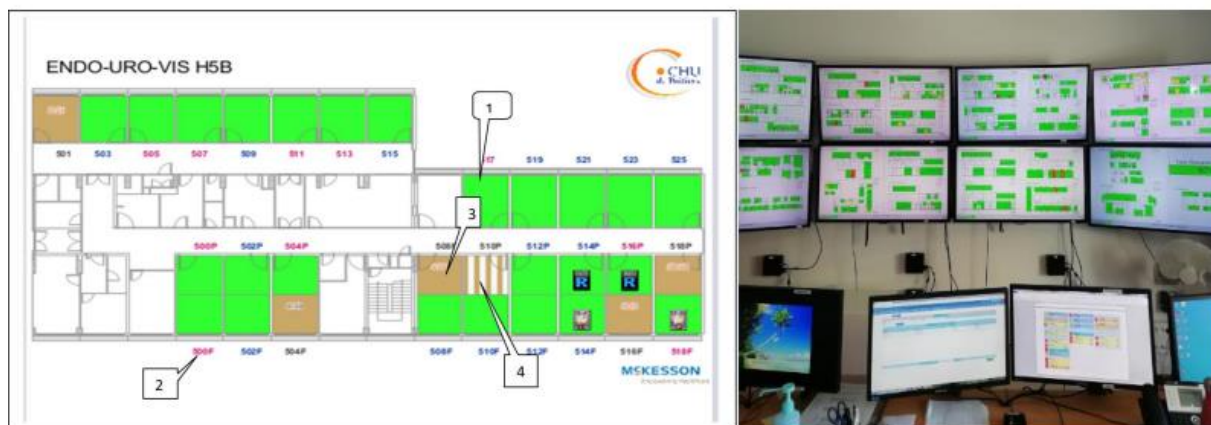
Third, to tackle the lack of medical materials, the participants presented the **supply chain of operating theatre**. It comprised an inventory, a list of materials per procedure and a schedule of procedures to detect bottlenecks, optimise inventories, and anticipate medical device needs. It also included a system of alerts of backorders and stock status as well as a dashboard which lists materials in existence, stocks, and cost calculations.
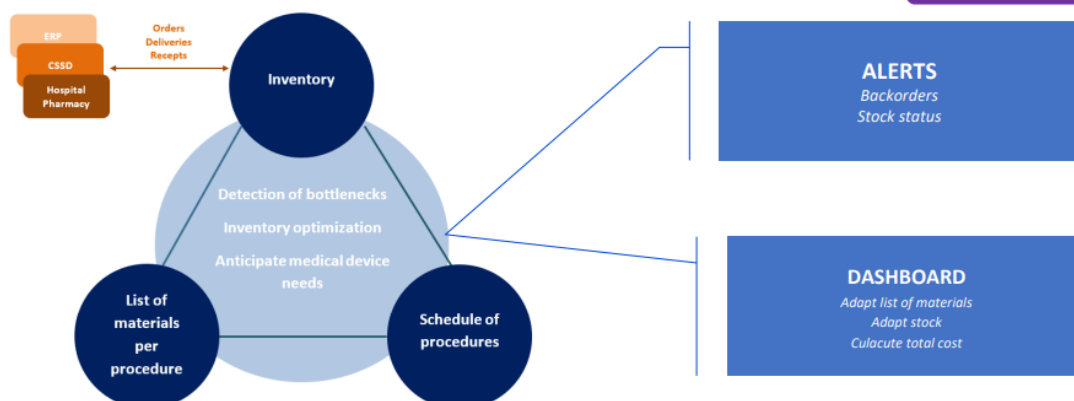
Source: Galenus BVBA

The participants concluded first that decision-making strategies during the COVID-19 related to medical materials shortage was based on common knowledge, consultation of supervisors and colleagues but without significant difference in the use of scientific literature across time. Second, they found that shortage of personnel was more important within the last month than during the peak of the COVID-19 outbreak due to the difficulty with recruitment. Third, the management of beds and medical materials was steadily returning to pre-COVID-19 levels within past month. However, the current shortage of personnel is the main factor affecting management of beds.

The COVID-19 was found therefore as a major strain on hospitals and personnel. Initial survey of French hospitals provided very valuable information. For future work, the participants recommended to undertake a survey of greater sample size, to focus on why the use of scientific literature has not increased to support decision-making during the pandemic, to explore the strategies for recruitment of new medical personnel and to raise new questions relating to the continually evolving pandemic situation.

GERMANY

HOPE National Coordinator: Doris VOIT

Exchange participants 2022:
Dorte OLESEN, Denmark
Bill O'REILLY, Ireland
Karen PIERER, Austria
David RUTHNER, Austria

The first example of the use of evidence in healthcare management presented by the HOPE Exchange Programme participants who had been in Germany was the **prevention of hospital borne infection — legionella control** at the St Elisabeth Gruppe Hospitals**.** The disease of legionnaire is an infection of the respiratory system, potentially mortal for people who are immunocompromised, elderly, diabetics, those suffering from respiratory illness or susceptibility associated with tobacco use. It naturally exists in the environment and water sources and propagates in stagnant water, airborne water droplets, and aerosols. It constitutes a big concern for hospitals especially as it linked to the global warming.

To combat the rising of this disease, the St Elisabeth Gruppe Hospitals have implemented two strategies: a whole system approach and an evidence-based approach. They first gather evidence by monitoring the water temperature every week at sentinel outlets and by continuously monitoring the water temperature of system at plant locations with a Building Management System. The water samples are taken from critical care areas monthly and evaluated for legionella bacteria. They are also taken from all areas six monthly and tested for legionella bacteria.

Afterwards, they used evidence-based management to analyse the water. The areas are selected for action where legionella bacteria are present in high counts, an investigation is conducted to determine causes of higher levels of legionella, corrective actions are taken based upon results of water sampling as well as investigation, and the system is disaffected and put back into use. Moreover, there is an on-going management of the system based upon evidence provided by temperature monitoring and water sample analysis.

The second good practice presented by the participants was the **treatment at the psychiatric hospital** as part of the St Elisabeth Gruppe Hospitals Group. Based on a strategic triad, this is an articulation between quality (the hospitals are continually improving employees' expertise, equipment, risk management and spatial opportunities for patients), profitability (guaranteeing the sustainability of the company, saving jobs for the long term, and allowing reinvestments in better quality results) and staff loyalty (employees are supposed to represent Saint Elisabeth Group as top performers).

In order to enhance the quality of our results, we are continually improving our process and structural qualities and fostering innovations through science and research
Therefore we improve
- our employees´expertise
- equipment
- risk management
- spatial opportunities
for our patients

QUALITY

PROFITABILITY

We aim to permanently increase our earning power. This is not an end in itself!

Profitability
- guarantees the sustainability of the company
- Saves jobs for the long term
- allows reinvestments in better quality results

STAFF LOYALTY

Our employees are supposed to represent our St. Elisabeth Group as top performers!

Therefore we strive for
- providing a successful company to our employees
- enhancing the attractiveness of our workplaces to enable meaningful working
- paying attractive, success-oriented wages

With this model, medical treatments, and milieu therapy, including a cognitive behavioural treatment model, are provided with all empirically validated methods. The decisions on a management level to support the treatment model involve management decisions with the employment of staff, the strategy for staff-education and the staff retention through education/training.

In addition, the treatment model involves continuous feedback from the patients and the staff. As such, the patient evaluates symptoms on a regular basis through acknowledged questionnaires, psychoeducation of the patients is done with active participation and feedback and a close cooperation secures common intervention and aims, imbedded feedback is used for intensive treatment, the treatment plan is revised continuously and there is an individual follow up after one year.

The last good practice was the **HandinHand Project in care for the elderly** organised by the Marienhaus GmbH. They started from the recognition that population is ageing and that there is a critical lack of general practitioners in rural areas while they are bound by contract to do home visits. In a nutshell, the Project consists in supporting general practitioners in their duty of home visits as well as by advanced nursing practitioners of elderly chronic ill patients.

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The Project implies training of nurses as advanced nurse practitioners as well as overall skills trainings, the recruitment of 46 general practitioners, the involvement of 700 patients, the setting up of patient documentation software as well as office for the administration and the provision of cars for home visits. The objectives are to provide example for integrated health care in primary care (overlapping sectors) and for using advanced nurse practitioners in the German context. The evaluation of evidence is being based on the assessment of the satisfaction of patients, family members and general practitioners, the reduction of the number of consultations, and the reduction of admissions to hospital. The Project is still in process and a report is foreseen for 2023.

GREECE

HOPE National Coordinator: George TSIMOPOULOS

Exchange participants 2022:

Paulina CHOCHULSKA, United Kingdom
Ewa JASIŃSKA, Poland

The HOPE Exchange Programme participants hosted in the Region of Crete visited many healthcare institutions and hospitals and met key healthcare actors such as researchers and physicians. They identified four good practices regarding the use of evidence in healthcare. First, they noticed **improvements in data management and service quality implemented during the COVID-19 pandemic** in secondary care intensive care units (ICUs), home care services, with the quality assurance framework as well as the Panacea management and infection control systems. Second, the participants identified the development of **innovative, user-friendly, and personalised digital tools** to support effective and sustainable health services for all (FORTH), including the participation in European Union health projects. Third, they mentioned the development of a **National Patient Safety System with the MERIS Pilot Project**. Fourth, the last good practice concerned **health inequalities during the pandemic.**

After providing an overview of the spread of the COVID-19 and its management by public authorities, the participants presented their experience at the General University Hospital of Heraklion (PAGNI) and the Venizeleio General Hospital in Heraklion.

They discovered that an infection monitoring system was implemented based on data, available to all healthcare providers. It allows staff to monitor drug-resistant infections and the treatment history of all patients. Each decision regarding the course of the patient's treatment contains all the elements of evidence-based medicine, patient safety and quality of healthcare. In addition, they presented the 2021 hospital operation data of the Venizeleio General Hospital which gathers various data including occupancy rate, the number of emergency room visits and internal patients.
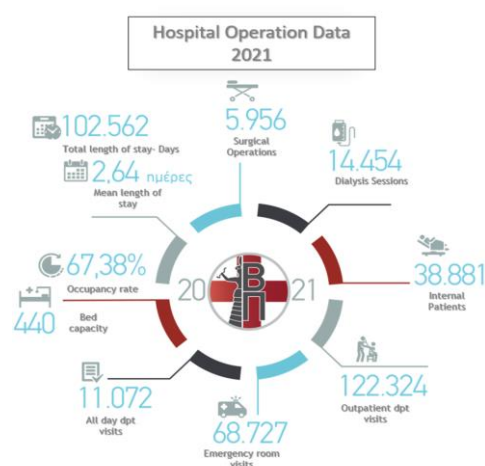
Even if the pandemic has slowed down some reforms, the **National Quality Assurance Framework** was implemented with the objective of improving the primary and secondary care services by focusing on the availability of reliable and infection control procedures, the provision of personalised care services and the monitoring of key processes. It is an evidence-based process relying on regular reporting, internal audits, ISO certification and International Patient Safety Goals.

The participants also reported the example of **FORTH (FOundation for Research and Technology — Hellas).** This is a Research Institute in Computer Science which contributes to strengthen the hospital network of Crete while developing the IT system. FORTH is involved in the development of eHealth tools for integrated care solutions and contributes to the standardisation and the development of healthy entrepreneurship. It has supported more than 50 national health system units during the past decade, implemented more than 200 projects for health units of the NHS during the past five years and has developed more than 150 eHealth tools for integrated care solutions.

Furthermore, the **Medical Error Reporting Information System (MERIS)** is a system that embodies a mandatory module which adopts the tool methodology for measuring adverse events and medical errors within ICU environment, and a voluntary one with web-based public reporting methodology. MERIS has been evaluated as a comprehensive and effective system; it has succeeded in detecting the main factors that cause adverse events and disclosed severe omissions of the Greek health system. MERIS is expected to be incorporated and run efficiently nationally, adapted to the needs and peculiarities of each hospital or clinic.

Finally, the participants mentioned their experience of the **Hellenic Mediterranean University visit to the Romani Gypsy community**.

As a conclusion, the participants listed sources of good practices: professional experience and knowledge, organisational data, stakeholders' values and concerns, focus on quality assurance, system improvements and innovation, patient safety and risk management, patient experience, staff experience. One key conclusion was the need to consider culture and people in healthcare management.

IRELAND

HOPE National Coordinator: Siobhán REGAN

Exchange participants 2022:

Sebastian BELLMANN, Germany
Jesper ERIKSEN, Denmark
Christina SCHOBER, Austria
Anna ZUK-KRASINSKA, Poland

The HOPE Exchange Programme participants presented challenges to which the Irish healthcare system is confronted. Regarding digital technology, data collection and data integration are difficult and neither digitalisation in healthcare, nor electronic health records are setting up. They noted other challenges including increasing expectations and demands in the public, increasing pressure regarding beds and staff, population ageing, the expansion of chronic diseases and inequalities in healthcare especially between the private and public sectors.

To respond to these challenges, the **Sláintecare** Reform proposes a ten-year vision to transform the Ireland's health and social care services. It intends to ensure equal access to healthcare to all citizens and to implement one universal health service for all, providing the right care, in the right place, at the right time. It focuses on four goals: improved governance, the provision of high quality accessible and safe care, addressing inequities in access to public acute hospital, modernisation of eHealth infrastructures and improving data.

The participants presented three initiatives planned in the framework of the Sláintecare Reform. First, the **Healthy Ireland Network** is a preventive Programme to support people throughout life journeys focusing on pre-natal care, parenting programmes, healthy infancy, live well and age well and improving conditions of healthcare workers. Second, there is the **Health Information and Quality Authority** which is an independent authority which aims to improve health and social care services for the people notably by inspecting nursing homes and developing safety and wellbeing standards. Third, the **specialist ambulatory care hub** offers access to specialists/multidisciplinary teams in the community for people living with complex chronic disease and/or multi-morbidity.

These examples of initiatives are based on different data collection systems. For instance, the **National Early Warning System** is a colour-based system used to monitor conditions of acute inpatients in hospitals and reallocations based on possible exacerbations.

The **National Quality Assurance and Improvement System (NQAIS)** is a clinical dataset that collects and analyses Hospital In-patient Enquiry (HIPE) data from hospitals.

The **National Inpatient Experience Survey** conveys the point of view of patients aged 16 years or older on their experience in a hospital stay of more than 24 hours. The objective is to reform some health services thanks to a bottom-up initiative.
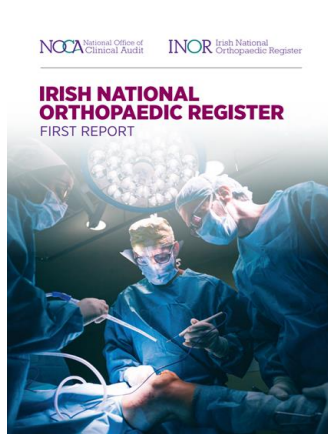
The last example is the **Irish National Orthopaedic Register.** This is a data collection that constitutes a reporting system for medical staff. Doctors can use this Register to monitor peri- and post-operative knee and hip replacements and to observe any potential exacerbations or prosthetic failures.

ITALY

HOPE National Coordinator: Marco DI MARCO

Exchange participants 2022:

Conchetta BALOSSO, France
Maria Olívia BARBOSA, Portugal
Ann BOURKE, Ireland
Jillian CONNOLLY, Ireland
Agata LISIEWICZ-KALETA, Poland
María MARTÍNEZ VÁSQUEZ, Spain
Sílvia OLIVEIRA, Portugal
Daniel PINTO, Portugal
Helena RODRIGUES, Portugal
Cristina SANTOS, Portugal

The HOPE Exchange Programme participants started their speech by presenting the Italian context with numbers (population, life expectancy, main causes of death and the percentage of individual absolute poverty incidence). The Italian healthcare system is a highly decentralised and region-based delivery system. Since 1978, Italy has had its own National Health Service to which all inhabitants are entitled, and which is mostly free of charge. In addition, the Italian Constitution established the legislative competences of the State and the Regions for health protection. The State determines the essential levels of care that must be guaranteed throughout the national territory while the 20 Regions plan and manage healthcare in full autonomy within their territorial jurisdiction.

The participants reported as first good practice in the use of evidence in healthcare the **Personalised Health Care and Patient Pathway** related to breast cancer. Indeed, the **Project E.Pic.A** was established in 2015 to analyse the patient's pathway in seven Italian centres and to aggregate data in a software

defining a Key Performance Indicator (KPI). The objectives were to reduce unnecessary costs and reinterventions as well as to improve access to therapy for different patients.
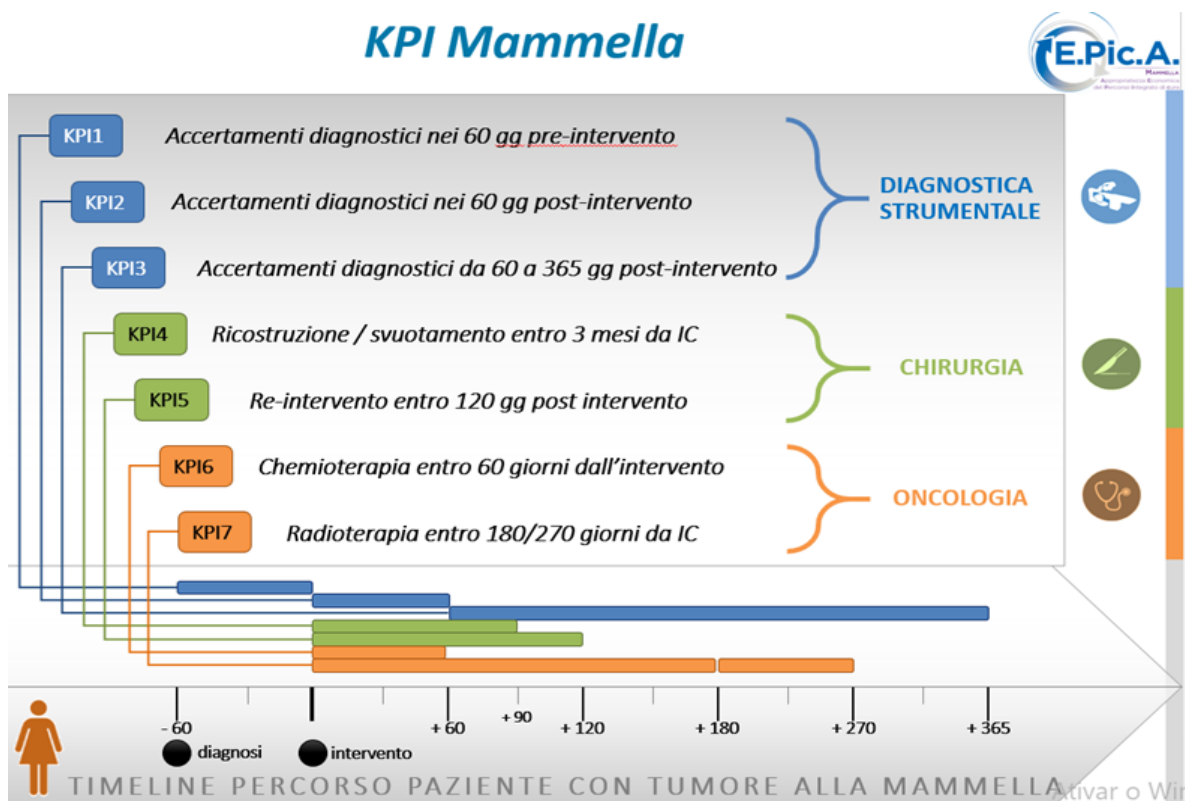
Furthermore, the participants discovered the **Hospital to Community Continuity Agency — the ACOT Project.** This system was established in each district across Toscana in response to the National Chronicity Plan (MoH 2016) to strengthen transition processes and integrated care pathways between hospital and community. The ACOT team is a muti-professional community of doctors, nurses, social workers, physiotherapists, and others as required (e.g. physiatrists, geriatrician specialists).

It is coordinated/directed by a manager appointed by the district director who is responsible for activating resources, evaluating, and monitoring results as well as driving system improvement

actions. The team plays a role in monitoring governance of available resources and of clinical safety in transition between hospital and community services. It also acts as a referral point from community services where intermediate residential care may be required and connects with district of origin for non-resident patients hospitalised in the area.

With 13 ACOTs in place, Toscana Sud Est set up the Centrale di Cronicitá as a hub to oversee discharge planning activities of its hospitals and all ACOTs. More specifically, it facilitates dialogue between services across the organisation by driving multi-professional collaboration. It aims at collecting and classifying individual need, coordinating appropriate community pathways/healthcare responses for difficult cases to ensure a safe transition from one place of care to another. The hub also facilitates dialogue between services across the organisation by driving multi-professional collaboration. Finally, the hub promotes the use of standardised tools in discharge phase, enhance communication and optimise patient safety.

The last example referred to the **family and community nursing Project.** In the Veneto Region, a
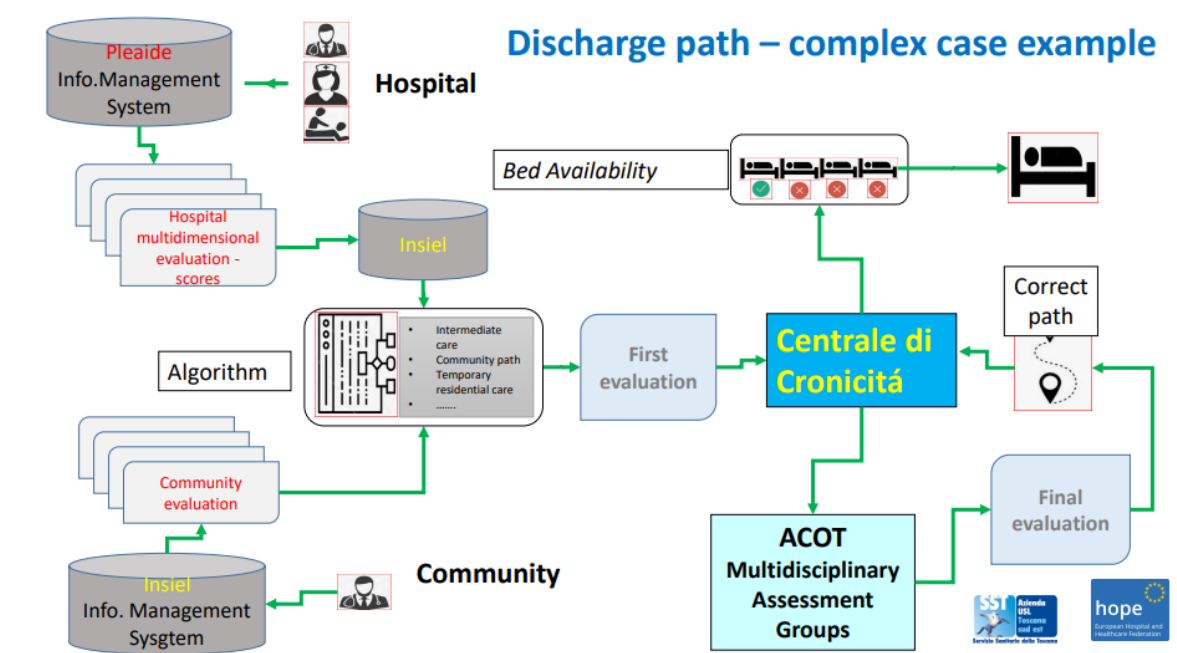
Regional Social Health Plan was implemented between 2012 and 2016 to assess current state of health and social status. The family and community nursing Project was launched based on the evidence providing by the AGC System, a system which focuses on risk adjustment and clinical groups. It helped to define the list of patients potentially likely to present an aggravation of their pathology.

By a personalised course as well as professionals helping people to adapt illness and disability chronically, the Project aimed to increase the individual empowerment of the assisted person, improve their ability to cope with the disease and develop self-care skills to influence and better control the determinants of health as well as the quality of life in his/her community. In the first ULSS 3 District of the Region, the Venice historical centre and islands, it was found that people are distant from the main diagnostic and care centres and that can be a problem when it is difficult to move or stay outside the home for a long time. Moreover, there was no integrated medicine.

The participants concluded that the best decisions in Italy, at national, regional, hospital and health service management level, or at unit/department level, are made with the knowledge available, in the result of research, training, data analysis, reporting systems, satisfaction surveys or plans. The decision does not remain unchanged, the Italian Healthcare control the results of that choice, and change it if the objectives are not the same. It is a continuous cycle, which allows to increase the quality of health services, placing the patient at the centre of the system.

LATVIA

HOPE National Coordinator: Ieva LEJNIECE

Exchange participant 2022: Claus BECK-JEPPESEN, Denmark

In Latvia, the participant to the HOPE Exchange Programme found that evidence is widely used in healthcare and hospital management. The first example reported referred to the **Business Intelligence System** which aims at providing support to take decisions in hospitals. In Latvia, the National Health Service (NHS) funds and pays for treatments to public hospitals. There is a contract between the NHS and each hospital regarding the quotas of manipulations or procedures that the hospital will be paid for and to which tariff. Hence, the role of the Business Intelligence System is to manage these payments in hospitals thanks to the contract with the NHS, the Electronic Health Record, in which manipulations are registered, and the receipts for assigned payments by the NHS.

The System may also monitor, based on reports and views collected, which manipulations the hospital has received payment for, and which not may also be monitored in the System. In case of missing payments, the dialogue between hospital and the NHS is organised and if this is due to incorrect registration in the Electronic Health Record, the registration is corrected.

The second example of good practice presented was a **Project related to human experience** developed at the Children's Clinical University Hospital (CCUH) of Riga. This Project is based on the evaluation of patients and employees' experiences. Concerning the employees' experience, the hospital uses different sources to get information (i.e. primarily the annual surveys, morning meetings, reports, and discussions etc.) and takes initiatives for maintaining and improving employees' experience such as individual consultations with clinical psychologists, crisis communication training to seminars on burnout as well as mental and emotional hygiene.

It exists different sources to assess patient's experience including the Patient-Reported Experience Measures (PREMs) upon discharge, the patient and family advisory board, the patient safety incidents, and the complaints. The measures taken to improve patient's experience are, among others, the development of fear and anxiety reduction programmes for children, the psycho-emotional support for the staff as well as the food menu and presentation change to restore the appetite of hospitalised children.

Patient Experience - examples

Patient Experience – Change Food

In addition, the participant identified the example of the **Telemedicine Strategy** developed at the CCUH of Riga**.** Indeed, during the peak of the COVID-19 pandemic, only the patients with the most serious and urgent cases were admitted to the hospital while other cases were treated through video consultations. Based on 27 interviews with stakeholders (e.g., HCP from units) and experiences during

the COVID-19 and elsewhere, the CCUH decided to maintain telemedicine to improve patient's care. As such, apart from video consultations, they also developed remote monitoring with diaries and questionnaires for outpatients and video conferences with specialists for second opinion and advice. Overall, this evidence-based Strategy was prepared to take Board decisions, for operational parts (time plan and priority) and for seeking funds.

NETHERLANDS

HOPE National Coordinator: Ton ROELOFS

Exchange participants 2022:

Marie Cris GAMBAL, Austria
Maciej KOLASA, Poland
Helle KRUUSE-ANDERSEN, Denmark
Elena MORNEALO, Republic of Moldova
Renate REINGRUBER, Austria
Mārtiņš ZEIDAKS, Latvia

The HOPE Exchange Programme participants focused on the changing culture that they had observed in three Dutch hospitals. They argued that changing culture has been made necessary considering several factors such as the lack of staff, the increasing number of patients, the ageing pyramid shape, and the financial pressure.

Accordingly, the participants presented examples of good practices in using evidence in healthcare management focusing on **self-management as a way to change the culture.** This involves ensuring control, ownership, empowerment and what is important in life for patients. The care providers are thus supposed to tailor the care to the wishes, needs and possibilities of people in their daily lives.

The first example presented referred to **connected care.** This means maintaining people at home when possible and going to the hospitals only in necessary cases. By reducing traditional periodic consultations with necessary home devices (e.g. telemonitoring, education and self-management, electronic devices), the number of patients who visit the hospital is reduced and reserved to urgent cases. This improves patient and staff's experiences, lowers cost of care, and ensures results in better health outcomes.

The second example developed was the **Digital Health Platform for IBD patients (Irritable Bowel Disease) at a distance named "My IBDCoach".** This Platform provides an individual care plan for patients and ensures contacts with healthcare providers. It comprises reports, periodic check-ups, preparing for consultations, monitoring, and calling advice, e-learning modules, and evaluations.

Evidence shows that this digital tool has had a positive effect on the patients, improving their quality of life, self-management, and satisfaction. The message function included in the Platform has also been experienced as very useful by the patients.

The third example focused on **keeping the personnel healthy.** Against shortages across Europe and recruitment difficulties, evidence-based analyses would identify needs, absenteeism, and recovery times with actionable feedbacks to ensure healthcare workers' well-being and satisfaction.

As night work has been shown to be potentially damaging to health, the **strong@night O2 Programme** has been developed for night workers. It provides clinical lessons and vitality coaching, night food, power nap, massage chairs to reduce risks by working at night for employees. The Netherlands Society of Occupational Medicine recommends continuing for further results as more evidence is needed.

The participants concluded on the importance of being curious, innovative and to continue looking for evidence.

POLAND

HOPE National Coordinator: Bogusław BUDZIŃSKI

Exchange Participants 2022:

Manuel ACEVEDO GARCÍA, Spain
Verena ANGLOHER, Austria
Eugene BADIUL, Republic of Moldova
Alessandro DI RISIO, Italy
Joaquim TINOCO FERREIRA, Portugal

During their stay in Poland, the HOPE Exchange Programme participants visited several hospitals located the cities of Bydgoszcz, Łódź, Opole and Toruń where they learned about the Polish national healthcare system and identified evidence-based good practices.

The Polish national healthcare system has among the lowest Gross Domestic Product spending in the EU (6.7% in 2017). Insurance is obligatory (with exceptions) and there is no opt out. It ensures a universal coverage, but the access is limited in practice due to lack human resources. Besides, there is no cost-sharing for primary care, outpatient specialist care and inpatient care (substantial cost-sharing for medical drugs — with exemptions). The hospitals are funded by the State for procedures delivered each year.

According to the participants, the strengths of the Polish healthcare system are its universal nature present throughout the country, the financing by the State through taxes and the choice let to people of the hospital to go for treatments. However, this system has also several weaknesses including a longstanding indebtedness of the hospital sector, patients waiting lists, an overcapacity of acute hospitals beds, an overcrowding of emergency departments, shortages of human resources, an ageing of clinical personnel and a lack of network between hospitals.

Yet, different opportunities exist to solve these issues such as a political commitment to increase the Public Health Financing, a reform of primary care, a coordination between primary and specialist care

(ambulatory and inpatient), a new system for investments in healthcare with private system, a recruitment of new generations of healthcare workers, telemedicine, healthcare team buildings and cooperation. Nevertheless, the participants identified three issues which threaten the system: the ageing population, the political influence as well as the economic and social crises (e.g. pandemics, war).

The first good practice of using evidence in healthcare observed in the Polish hospitals was the existence of **supporting measures for the healthcare staff** to improve professional practices and healthcare outcomes. For instance, teamwork is organised to strengthen the teams, self-improvement and self-skills are valorised with the implementation of simulation centres and communication is encouraged through the organisation of courses. Moreover, pathways exist to prevent healthcare workers from burnouts.

The second good practice identified referred to the **measures that aim at reducing waiting lists in the hospitals.** For this purpose, a multidisciplinary team was implemented in each hospital to accelerate care and people can choose the hospital with short waiting time thanks to a database. Besides, the Polish Public Health System has started to improve some procedures with private hospitals (endoscopies procedures) and began choosing priority patients, like oncologic patients, who have a shorter waiting list to access treatment. Finally, the reduction of waiting times has been made possible by the improvement of telemedicine after the COVID-19 pandemic.

The participants concluded that the healthcare system in Poland has been significantly transformed since it joined the European Union; evidence is and will remain the only way to avoid making mistakes and that health of people and education are the only ways to maintain a stable and safe society.

PORTUGAL

HOPE National Coordinator: Sofia OLIVEIRA

Exchange participants 2022:

Clair CHEW, United Kingdom
Istvan EHRENBAUM, Switzerland
Mireille KLOP, Netherlands
Maria LAMBRAKI, Greece
Diego SÁNCHEZ DE MORA, Spain
Hanna SVENSSON, Sweden

The HOPE Exchange Programme participants who visited the Portugal provided first an overview of the Portuguese healthcare system. Since the enactment of the 1990 Health Basic Law, the healthcare system has consisted of three coexisting systems: the National Healthcare System (NHS) which provides universal coverage, the Health Subsystems whether they are public, private, or social, and the Health Insurance which is private and volunteer.

Moreover, different actors are involved: the Ministry of Health who deals with health policy, regulation, planning, finance, monitoring, and inspection; the administration and departmental bodies which handle budget, contracts, planning as well as human resources and regional agencies, undertaking regional programmes and coordinating resources. Nonetheless, this healthcare system is today confronted with the ageing population involving multiple morbidities that affect the sustainability of the NHS.

To remedy this issue, Portugal undertook the **digital integration for evidence-based integrated care** to provide evidence in the hands of healthcare professionals. At the SClínico Hospital, the **ALERT-A**

software is used to ensure the communication of data between hospitals and primary care. This includes real-time data dashboards to improve bed management, clinical reports to make clinical decisions on antibiotic stewardship and infection control and self-serve managerial reports for strategy and planning for the benefit of managers.
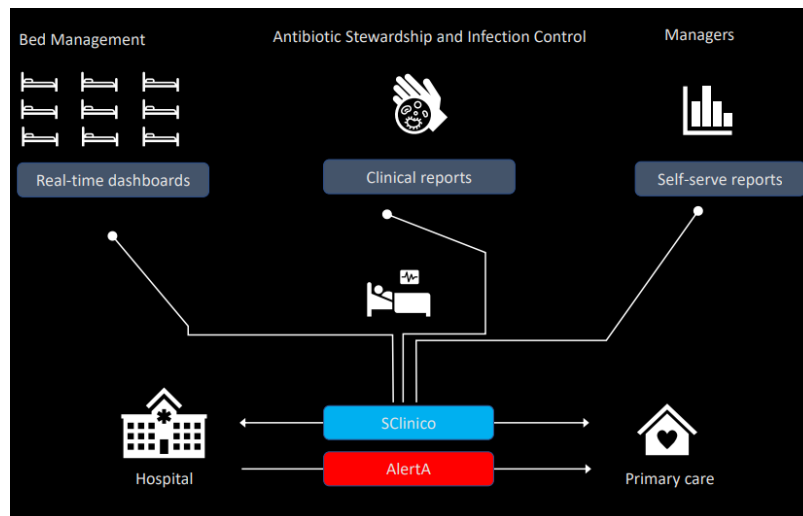
Two examples of economic and clinical innovations were then presented by the participants. The first example was an integrated care Project, called **Integrated Local Health Units**, which connects patient's home with primary care units and hospitals. It focuses on solving the population's health needs and problems. Indeed, each Local Health Unit brings a structural response of healthcare which includes the approach by pathology, integrating the different levels of care and considering the patient's flow. It is organised in multidisciplinary teams that serve specific groups (e.g. COPD, diabetes). With this system, more than one million of people are covered by healthcare provided by Local Health Units.

The second example presented was the **Chronic Complex Patient Support Team** which aims at limiting the hospitalisation of chronic patients and the aggravation of their pathology by focusing on prevention and daily monitoring. Each team is composed of four case manager nurses in the community, two case manager nurses by phone, two internal medicine physicians, a nutritionist support as well as a social service. They provide care of people who present three or more criteria: 75 years of age or older, five or more SU episodes in the last year, three or more hospital admissions in the last year, three or more of co-morbidities (i.e. chronic lung disease, heart failure, chronic kidney disease, chronic liver disease, active neoplasm, diabetes, and cerebrovascular disease) and six

or more usual medications. The patient receives an individual care plan which includes weekly/biweekly home visits by the case manager nurses, telephone case management by nurses and regular consultations with internal medicine physician.

The results of this Project are positive because the number of emergency visits, hospitalisations, and the length of stay in hospitals have decreased by more than 60% whereas medical adherence has increased by 44%. In addition, the patients have perceived a decrease of their depression and improvement of their health.

Furthermore, the participants briefly mentioned the case of the **Lisbon Academic Medical Centre** to integrate forefront scientific research with medical teaching, medical training, and patient care.

To conclude, the participants' key takeaways were the need to implement the vision backed by economics; the existence of people on the ground who are engaged with the vision and who are given independence to achieve it; and the importance to have a dedicated focus on the future.

SERBIA

HOPE National Coordinator: Milos BOZOVIC

Exchange participant 2022: Annemette TOVGAARD JEPSEN, Denmark

The first example of using evidence in healthcare management in Serbia referred to the **Second Serbia Health Project.** The Project implemented between 2019 and 2021 aimed at improving health financing as well as the access to quality of healthcare, strengthening quality of service delivery and relating to monitoring, evaluation, and project management. It was based on a significant collection of data. The data included top 50 international and local experts, more than 5000 health workers directly contacted, more than 6000 processed files, field visits in 278 public health institutions, citizen's surveys with 11000 participants and 3400 questionnaires.

In addition, it involved a Masterplan proposal based on four pillars. The first pillar was an optimisation strategy defended by cooperation and merging between healthcare institutions. The second pillar involved the implementation of a new regionalisation to better match population areas. Regarding the third pillar, it was supposed to reorganise the primary healthcare owing to the existence of teams of specialists, the empowerment of nurses, the increasing of home treatments and the migration of staff to areas where healthcare gravitates. Finally, the last pillar categorised hospitals into five sectors from local to republic hospital.

The second good practice identified in Serbia was a **Nursing Initiated Counselling Programme called HaloBebo.** Indeed, in Serbia, there are considerable challenges with regards to the nurses' profession: shortage of nurses, low salary, the absence of recognition of graduate nurses by the Ministry of Health and the nonrecognition of the nursing profession by law and by clinical practice.

To remedy these challenges, the phone and online counselling service HaloBebo was set up for pregnant women and families with new-born babies and small children in Belgrade, to help, inform, and educate parents by phone counselling, online support, and an informal website. It is open 24/7 all the year to promote coordination between delivery wards and primary healthcare, to coordinate home visits to mothers and new-borns and to reduce the unnecessary visits to the general practitioners and hospitals. This service is funded by the city of Belgrade and involves specially trained nurses and professional consultants, such as paediatricians, gynaecologists, child psychiatrists and public health experts.

Furthermore, the HeloBeba application was established as the first comprehensive, interactive guide for parenting until the child´s first day of school. All data entered into the application in order to personalise the content, are stored in the users' personal device. It is noteworthy that the UNICEF Regional Office for Europe and Central Asia enabled the application to be improved and to be used outside Serbia named "Bebbo" in 11 countries and in 19 language variants.

Overall, the System is monitored to be constantly improved by the Institution of Public Health of, the city of Belgrade and the International Organization for Standardization (ISO) notably through analysis of the calls and a customers' satisfaction survey.

The third good practice identified was the **NGO NURDOR and hospitals in Serbia which offer for children with cancer and their families a place to be together and to play**. This Project is based on a qualitative approach without requiring so much data and emphasises on value-based evidence and management initiative.

SPAIN

HOPE National Coordinator: Ana DE LA CRUZ

Exchange participants 2022:

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Hans-Juergen BARTZ, Germany
Sergio CINOCCA, Italy
Iben HOLBÆK LUNDAGER, Denmark
Jörg LEIFELD, Germany
Stephen MELLUISH, United Kingdom
Julia REYNOLDS, United Kingdom

The HOPE Exchange Programme participants presented three good practices of using evidence in healthcare management in Spain. First, during their stay at the Clínic Barcelona Hospital Universitari, the participants discovered the **CORTEX Project** implemented at the Sant Joan de Déu Hospital, specialised in children and maternal healthcare. Presented as a strategic Project for the digital evolution of the organisation based on the intelligent management of the information generated by the hospital, the patients, their families, and their environment, it aims at generating knowledge to have predictive and proactive care models.

CORTEX is composed of three elements. The Command Centre is a central nucleus where professionals analyse patients' data with scores and performance indicators to take appropriate decisions in the hospital. The Contact Centre aims to ensure proactive personal care via Intelligent planning where healthcare professionals remotely visit patients who do not require face-to-face care and handle

demands from the families. eCare is a patient monitoring system including new models of nonface-to-face care to remotely monitor children who are always admitted.

As a result, CORTEX has helped to reduce length of stay and costs in a Spanish children hospital. The participants found that CORTEX is the good evidence to show that a family of measures can help make improvements to healthcare. They also concluded that multiple data sources working together can help focus insightful clinical decision making and that the organisation of data helps to reduce response times and improve patient outcomes.

Second, the **Telemedicine Programme called Apnoea Virtual Sleep Lab** was developed by Osakidetza — the Basque Health Service —to reduce sleep apnoea which is a life-threatening chronic disease. It is present in 12% of adults and is undetected 80% of the time. The Apnoea Virtual Sleep Lab uses real-time patient data, telemonitoring, and improvement data to highlight patient evidence of impact of wearable technologies, the impact of real-time decision-making on treatment course and the economic evidence of cost reduction. Indeed, this Programme has resulted in cost savings (5.5 million € saving / 3.762 € per patient), improved compliance and patient care through scalable and digital solutions.

Third, the Spanish team presented the **eye examination with smartphone** developed by the Administration of the Junta de Andalucía. Indeed, retinal detachment, age-related macular degeneration and diabetic retinopathy are today big issues which affect the vision while the delay for ophthalmology examinations are very long.

It involves two devices to take pictures and to send them to a remote on-call ophthalmologists. The first device consists in exams and pictures with smartphone to examine foreground of the eye and the second device is an open retinoscopy with smartphone to examine background of the eye. Overall, it ensures reproducible and safe telemedicine, the ability to perform follow-up examinations in local

health services, a secure messaging service connected to health systems to protect patient data and global use.

First device: Lente de Volk with smartphone to examine foreground of the eye

Second device: Open Retinoscopy with smartphone to examine background of the eye

RETINOSCOPIO ABIERTO ta exploratoria esencial para evaluar la retina

SWITZERLAND

HOPE National Coordinator: Erika SCHÜTZ

Exchange participants 2022:

María Jesús CHUECA GUINDULAIN, Spain
Andres KOTSAR, Estonia

The Hope Exchange Programme participants presented three examples of using evidence in healthcare management in Switzerland. The first example was the **nursing research** discovered at the Gesundheitszentren für das Alter — Health centres for old age. The participants started their speech by presenting a **modelling of COVID-19 transmission** elaborated during the pandemic to ease concerns of employees who were worried about being infected by residents.

Furthermore, they mentioned a **study entitled "Prevention Admission into Nursing homes (PAN): study protocol for an explorative, prospective longitudinal pilot study"** to determine the sustainability of the Post-Acute Care Programme (PAC) and that it will improve the functional status of older people and reduce the burden on their relatives. More precisely, it determines whether the PAC Programme can improve older people's functional status in Switzerland through the assessment of functionality over several months and ensuring that the short-term and long-term effects of the intervention can be adequately captured.

The second example concerned the **Quality Department** of the Universitätsspital Basel — Basel University Hospital — which aims at integrating quality in practical clinical work. In this regard, the Swiss team mentioned **two studies regarding the implementation of the Patient-Reported Outcome Measures (PROMs)**, which are questionnaires to capture patient's perception of the quality of care they receive. The primary objective of the two studies is to contribute to the implementation of PROMs collection into daily medical routine.

The first study "Patient-reported outcome measures (PROMs) in the Swiss healthcare system — An analysis of the requirements for implementing PROMs in the Swiss health care system based on the experience of the Dutch health care system" discussed the strengths, weaknesses, opportunities, and threats to the implementation of PROMs in the Swiss healthcare system. The second study entitled "Patient-Reported Outcome Measures (PROMs): following knee arthroplasty: a prospective cohort study protocol" focuses on patients with knee arthroplasty.

Patient-reported outcome measures (PROMs) in the Swiss health care system. An analysis of the requirements for implementing PROMs in the Swiss health care system based on the experience of the Dutch health care system.

Leonel Oliveira
University Hospital Basel Switzerland

SWOT-Analyse	
Strengths	**Weaknesses**
– Positive attitude of various healthcare organizations (H+ FMH etc.) for the promotion of PROMs. – Positive attitude of health insurance companies and pharmaceutical industry. – National leading projects. – Inclusion in some national registries.	– Fragmented healthcare and thus numerous policy makers and stakeholders. – Lack of nationwide electronic medical record (eHealth). – Lack of defined fee-for-service for collecting and discussing PROs data.
Opportunities	**Threats**
– Improvement of health care performance by providing individual treatment pathways. – Fee-for-service based on PROs data and justification of individual treatments by PROs data. – Reduction of medical oversupply. – Increased involvement of the patient in their treatment. – Transparent reporting of the treatments and services provided. – Enhancement of competencies for certain professional groups or creation of new professional groups. – Benchmarking by comparing healthcare providers in Switzerland and/or comparing them with other countries.	– Lack of financial and time resources for PROMs and their discussion with patients. – Quality-based performance reimbursement for treatments provided, with existing risk of misinterpretation of PROs. – Comparison of PROs across health care providers with blame and creation of an unsafe environment. – Lack of language services for patients with immigrant backgrounds.

The third example concerned **innovation** which has proven to be very important in the Swiss healthcare system. Indeed, the Basel University Hospital tries to invent and implement practical devices and methods to be integrated in the daily medical work. For instance, the results of the **watch AF (Atrial Fibrillation) trial** suggest that detection of AF using a commercially available smartwatch is in principle feasible with very high diagnostic accuracy. The applicability of the tested algorithm is currently limited by a high dropout rate because of insufficient signal quality. Nevertheless, whether smartwatches may be useful complementary tools for convenient long-term AF screening in selected at-risk patients must be evaluated in larger population-based samples.
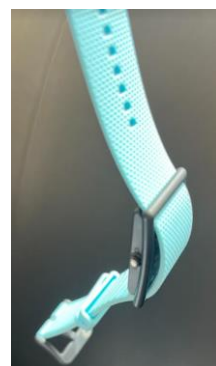
Moreover, another innovative project mentioned was the development of **smart biosensors to detect the next-generation digital biomarkers** independent from a lab and non-invasively in sweat, saliva, and exhaled breath to detect infectious diseases such as tuberculosis and to serve as a scalable therapeutic drug monitoring approach for antibiotics.

In conclusion, the main lessons learned by the participants were: they found exceptional quality at all levels of healthcare in Switzerland; innovation is integrated to everyday clinical practice; there are clear strategies of University Hospitals; they discovered excellent education programmes for career in nursing; hospitals consider sustainability; department leaders understand the potential future personnel deficit; and structure reforms enhance attractivity for future employees.

UNITED KINGDOM

HOPE National Coordinator: Tracy LONETTO

Exchange participants 2022:

Mwaba CHILUFYA, Italy
Anne GERRITSMA, Netherlands
Mónika HANTOS, Hungary
Ana IDEIAS, Portugal
J. Maila PÉREZ MENDOZA, Spain

The HOPE Exchange Programme participants visited two National Health Service (NHS) Foundation Trusts in the United Kingdom: the Northumbria Healthcare and the Norfolk and Suffolk. They identified three good practices of using evidence in healthcare management during their stay: the **Staff Wellbeing Programme**, the **Integrated Proactive Care System**, and **mental health wellbeing.**

First, the **Staff Wellbeing Programme** discovered at the Northumbria Healthcare Foundation Trust was presented as a complex Programme based on the idea that healthier work can give better health service to the patient. Indeed, the literature and evidence have shown that poor well-being and moderate to high levels of staff burnout are associated with poor patient safety outcomes, including medical errors. In addition, some authors identified the mental health of healthcare professionals during COVID-19 as a global emergency that needs to be addressed by the organisation. Hospital managers were found to play an important role in attending to the psychological impact of COVID-19 on healthcare workers, both within and beyond the workplace.

For all these reasons, the Staff Wellbeing Programme is based on a leadership approach to staff wellbeing as well as a "Patient first" approach. In practice, the Programme runs throughout the organisation and the leadership works in staff wellbeing through a Work Committee Force.

It is divided into several categories: mental wellbeing, physical health, self-care, supporting others and financial wellbeing. For instance, the mental wellbeing is expected to be improved by implementing

self-help and smartphone apps, emergency number, mindfulness programme, pocket guide of mental wellbeing approach and a staff network. Regarding financial wellbeing, solutions to the salary sacrifice, bank services, and information were made available to the staff.

The Programme experience is trust-wide measured through the NHS National Programme Survey with an in-depth work in teams. This method helps to understand experiences in more detail, to highlight what works well in teams so that it can be built upon and good practice shared/disseminated, to learn what kind of support needs to be put in place to help departments flourish and to help teams to make changes that enable staff to be happier at work. Besides, the Programme is educational. Indeed, it includes a formation to innovation regarding human factors and patient safety in order to understand and share. The Quality formula drives overall perspectives, also the Programme.

The UK team defined the NHS as an economic driver which contribute to a sustainable environment and build a community promise. As a matter of fact, during the COVID-19, a PPE manufacturing and innovation hub was set up.

Second, the **Integrated Proactive Care System** good practice aims at remaining healthy and independent as long as possible, avoiding acute hospital attention, especially by identifying frailty and fall risk. The rational is that the need for people-centred health and social support systems is acknowledged as a global priority. Moreover, as the prevalence of older adults with multimorbidity increases, greater integration of services is necessary to manage the physical and psycho-social needs. Finally, improving clinical care as one single system of provision seems to be more effective and integrated care improves health results and patient's satisfaction.

This Strategy is based on four principles: Integrated (i.e. health and social care services, digital systems), Person-Centred (i.e. shared decision-making, realistic medicine central to all healthcare decisions, focus on "what matters to me"), Safe (i.e. services, housing, environment, awareness of safeguarding vulnerable people), and Inclusive (i.e. services accessible to all, better co-ordinated care). On this issue, one concrete example was the virtual beds and wards to care patients from their home through monitoring devices, data transmission, and alerts.

Integrated *proactive* Care System: DELIVERY MODEL
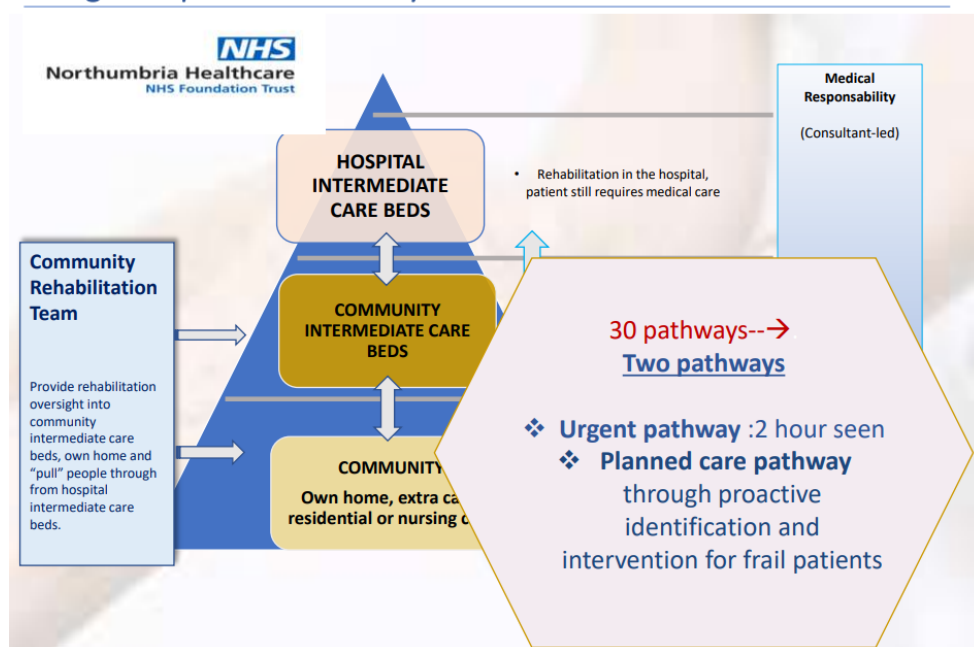
Third, **mental health wellbeing** was addressed with the Northside House Project, undertaken by Hospital Rooms, Norwich University of the Arts (NUA), Norfolk and Suffolk NHS Foundation Trust (NSFT) and Arts Council England.

The objective of the project was to transform the wards that had become very hostile during COVID-19, scaring patients and staff. During the eleven months of the global pandemic and three national closures, six artists (Cara Nahaul, Carl Rowe, Dexter Dalwood, Jade Montserrat, Naomi Harwin and Richard Wentworth) ran workshops with service users and staff, which then inspired the eight installations at Northside House, a medium secure forensic unit for men at Norfolk and Suffolk NHS Foundation Trust.
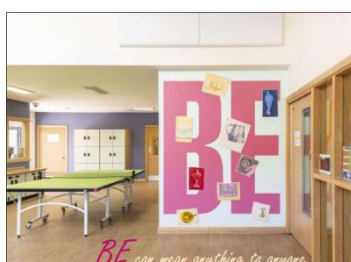
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