EUROPEAN
HEALTH PARLIAMENT

MAKE HEALTH GREAT AGAIN

RECOMMENDATIONS BY THE NEXT GENERATION

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European Health Parliament (EHP)

CONTEXT

The Health Parliaments across Europe are an effort to **mobilise and engage young people** on the topic of **healthcare and policy making**. Originally **started in 2014**, this year alongside **Johnson & Johnson**, the European edition of the Health Parliament movement has been brought to you by **Google, European Patients' Forum, POLITICO, EU40 and the College of Europe**.

In August 2017, **55 young professionals** were selected from a large application pool. We found the **brightest future leaders** across a diverse set of professions, from NGO advocates to psychologists to cutting edge medtech manufacturers.

These 55 young adults were split into **5 committees** to tackle **5 key healthcare topics** chosen in partnership with the European Commission and European Parliament. Each committee elected a Chair, replicating the format of the European Parliament, and an overall President was voted-in.

An **intensive 6-month programme** was built which included training from POLITICO on how to engage with the media, insights into the policy making process by EU40 (a network of young Members of the European Parliament), as well as numerous talks by leaders in specific subject areas.

After 6 months and **extensive outreach into the healthcare community**, each committee presented their policy recommendations which have been summarised in this book. These recommendations are the sole construction of the committees, committee chairs and president. They have only been printed once each committee chair has signed them off.

We all want to see a healthier Europe. The voice of young professionals is critical to realising this vision. We hope that the ambitious young professionals, who have penned these ideas will seek to create the circumstances in which these visions will become reality.

Foreword

Zeger Vercouteren

Vice President Government Affairs & Policy EMEA, Johnson & Johnson

In only four years, the EHP has become a brand in itself with high visibility and engagement as well as an increased network of supporters. It has sparked great interest and engagement from prominent Ambassadors, like **Vytenis Andriukaitis** - EU Health Commissioner, **Xavier Prats Monné** - Director General for Health and Food Safety, **Adina-Ioana Vălean** - ENVI President of the European Parliament, **Roberto Bertollini** - former WHO Representative in Brussels as well as from the policy community and the wider public, and many more.

More than **100 Members of the European Parliament** have endorsed the EHP over the past four years, while previous speakers include **Kurt Wüthrich** - Nobel Chemistry laureate (2002), **Vivek Muthu** - Chief Health Adviser at The Economist, **Mary Harney** - Former Irish Minister of Health and **Maggie de Block** - Belgian Minister of Health, amongst others.

Further, the EHP has been replicated in other countries (e.g. UK, Portugal and Germany,) and other nations are looking into it (e.g. South Africa, Brazil, Mexico and Australia). This is why, we, the partners, feel the initiative grew incrementally and we are all enthusiastic about the success achieved hitherto. Past participants have formed an alumni group and provide input to the Steering Committee as well as provide mentoring to the new sessions.

We believe that the European Union must forge itself a stronger, more incisive role in **improving the health and safety of EU citizens** and we are now calling for **continued European cooperation in the healthcare sector**. The EHP is an initiative committed to making health and innovation a priority for Europe in the forthcoming years. To achieve this, we deem it important to empower and equip upcoming leaders in healthcare policy. By bringing together young minds, we aim to create a platform that enables **future EU leaders** to play an active role in the EU policy arena. This is what sets us apart!

What is the future of healthcare in the EU? What is the Commission's role vis-à-vis the Member States to improve the sustainability of the healthcare systems in the EU? These are some of the questions that the Third Edition of the EHP tried to address. **In collaboration with the European Commission**, 5 policy areas were identified, where the EU institutions wanted to hear **new policy solutions** for the next few years from young professionals and students.

We hope that the work carried out by the EHP cohort will positively and actively **contribute to the policy shaping for the future of healthcare in Europe** and to **#MakeHealthGreatAgain.**

Nicola Bedlington

Secretary General, European Patients Forum

The European Health Parliament is a wonderful and necessary initiative, providing a platform for young minds to share fresh ideas and to tackle the most pressing questions and challenges for healthcare in Europe. The European Patients' Forum was thrilled to be part of the EHP initiative as a partner and I was extremely pleased to see how committed and engaged the Parliamentarians have been over the last seven months.

This group of young health experts were tasked with identifying Europe's top priorities in health policy and the appropriate, complementary role of Member States and the EU in healthcare – no easy feat, to be sure! As expected, the Parliamentarians did not disappoint, and you will see the impressive results of their hard work throughout the innovative and thought-provoking recommendations from the five committees. The policy recommendations cover many diverse aspects of healthcare in Europe and present resourceful and concrete proposals to address many emerging healthcare challenges and fast developing and disruptive domains. The Parliamentarians have done a fantastic job in taking differences and inequalities in healthcare across different Member States into account while proposing solutions and ideas that could be applicable to all European citizens. The outstanding recommendations collected in this publication showcase the expertise and vision of this group, who have truly taken meaningful steps towards their collective goal of reshaping the future of healthcare in Europe.

My congratulations to this creative and innovative group of young professionals and remain hopeful for careful consideration and uptake of these recommendations at the highest levels.

Adam Mouchtar

Co-founder and Managing Director, EU40

Dear reader,
Who says that Brussels legislators and young people have no voice in terms of shaping healthcare policy at national level? For those, who think this is still the case, prepare to be challenged because the European Health Parliament (EHP) is here to change the face of healthcare in the EU.

We are happy to see the EHP at its third edition since it kicked off in 2014 and we believe that the initiative has reached new heights every year with its bold, yet realistic recommendations on how to make Europe the world's healthiest continent. Making the young Health Parliamentarians the engine of this beautiful platform has been the essential secret of the EHP's success story.

We understand EU40 as the hinge between politicians and policy makers on the one hand and young health professionals on the other, thereby enhancing the understanding of these two usually separate worlds and thereby creating synergies in the process. It was our role, within this alliance of excellent organisations jointly hosting the EHP, to bring legislators and multipliers on board, who were interested in carrying and further developing the ideas that the young Health Parliamentarians of the EHP had developed. Thereby creating a perfect combination of a grass roots initiative together with a top down forceful planning approach. Young healthcare professionals working together and influencing each other, in order to tackle some of Europe's most urgent healthcare needs, such as vaccination, antimicrobial resistance, AI and health workforce planning to name just a few.

At the end of February 2018, during the Conference of Partners of the European Innovation Partnership on Active and Health Ageing, EU Health Commissioner Andriukaitis proposed the adoption of the European Electronic Health Record to be implemented by EU Member States, which is one of the boldest recommendations of the EHP 2014 - 2015 edition. This is a clear sign that the institutions also listen to their citizens and best ideas are implemented. We are proud to have been able to play a role in making this happen.

Joseph Elborn

President, European Health Parliament

Dear reader,
It is my pleasure to introduce you in the following pages to the work of a talented group of 55 young professionals in healthcare – the 2018 cohort of the European Health Parliament.

These passionate individuals have spent the last 6 months, and a lot of late nights, immersing themselves in key European healthcare topics. The result is a set of 5 considered reports and policy recommendations created by doctors, psychologists, 3D bone printers, NGO advocates and industry experts. These recommendations are what the young adults of Europe want to see in European health policy in the coming years.

The Health Parliaments are a movement. We hear and see every day of the troubles and trials of the modern world. Whether it is declining trust in institutions, the rise of populism, or the unsustainability of current healthcare systems due to an increasing imbalance between supply and demand. What we miss is a positive vision. The voice that says that we can solve our problems. We can make the change. We can balance the imbalanced. More than anything, this is what the Health Parliament movement stands for.

We have built a strong community over the last number of months. Many of these talented individuals will become the future leaders in European healthcare – in opinion forming, science, delivery and politics. With initiatives in UK, Portugal, Germany and more, our ability to be a positive force in the policy-making world is becoming stronger.

Modern technology, science and thinking allow us to achieve so much. All we need is the energy and vision to do it. That energy and vision in all societies comes from the young.

It is my pleasure to hand you over to the 5 committees in the following pages to deliver our view on how we can transform healthcare in:

1. **Outcomes–based Healthcare Systems**, chaired by Thomas Gelin
2. **Robotics, AI & Precision Medicine**, chaired by Joep Roet
3. **Antimicrobial Resistance**, chaired by Andrea Chiarello
4. **Health Workforce Planning**, chaired by Deborah Piette
5. **European Vaccine Initiative**, chaired by Chiara Danelli

My one request to everyone who reads this is **as we look to turn these ideas into reality, please support us, guide us and engage with us. Together, we can change the world of healthcare.**

COMMITTEE ON OUTCOMES-BASED HEALTHCARE

Thomas Gelin (Chair)
Anna Prokůpková (Vice-Chair)
Winne Ko
Diane Fisch
Giao Linh Vu Thi
Diana Castro Sandoval
Nicola Scocchi
Isabelle Manneh-Vangramberen
Tamara Nicolaescu
Arman Basturo
Niccolò Colombo
Ahmed Sinara

Lieve Wieringck

Member of the European Parliament (ALDE, Belgium)

How do we drive efficiency in health care? Focusing on outcomes that truly matter to patients, is a good place to start. We need to focus on solutions that have shown to improve outcomes and efficiency across the entire care pathway – from small-scale efforts to system-wide changes. As a policymakers, I am willing to join forces with patients, researchers, healthcare professionals and others to drive this paradigm shift towards outcomes-based healthcare. I also encourage my colleagues to implement the necessary infrastructure in all EU Member States.

Dr. Christina Rångemark Åkerman

President of the International Consortium for Health Outcomes Measurement (ICHOM)

Moving towards measuring what matters most to patients is crucial for the long-term sustainability of health systems globally. I am deeply encouraged to notice how the recommendations from the European Health Parliament's Committee on outcomes-based healthcare underlines the importance of harmonization of outcomes, patient involvement in defining the outcomes and the need to automate the collection of the harmonized data. Their recommendations will help today's health systems to reduce existing variations, understand the effectiveness of different treatments, support patients towards shared-decision making and, last but not least, fully focus on what matters most to a society: its citizens!

Prof. Philip Poortmans

President of the European Cancer Organisation (ECCO)

I warmly congratulate the European Health Parliament for taking on this difficult but pressing topic of data and outcomes-based healthcare. The challenges and solutions identified in this paper serve as an excellent stimulus for the decision-making that inevitably needs to be made by political and health system managers. I therefore urge all interested stakeholders to take the time to read the paper and to familiarise themselves with the terms of the debate on outcomes-based healthcare and its associated data requirements.

Andrew Bottomley, PhD

Assistant Director – Head of Quality of Life Department at European Organisation for Research and Treatment of Cancer (EORTC)

I am very pleased to see in this EHP policy report that patients' views on their quality of life can hopefully be more useful in shaping future health care treatment and services, across the EU, thus ensuring European research and services can be truly patient-focused.

Salomé Azevedo

Platform Manager and Research Assistant at Patient Innovation

Patient Innovation believes the work of the Committee on Outcomes-Based Healthcare within the European Health Parliament project is a good starting point to implement a sustainable, data-based strategy to achieve high-quality healthcare in all EU Member States.

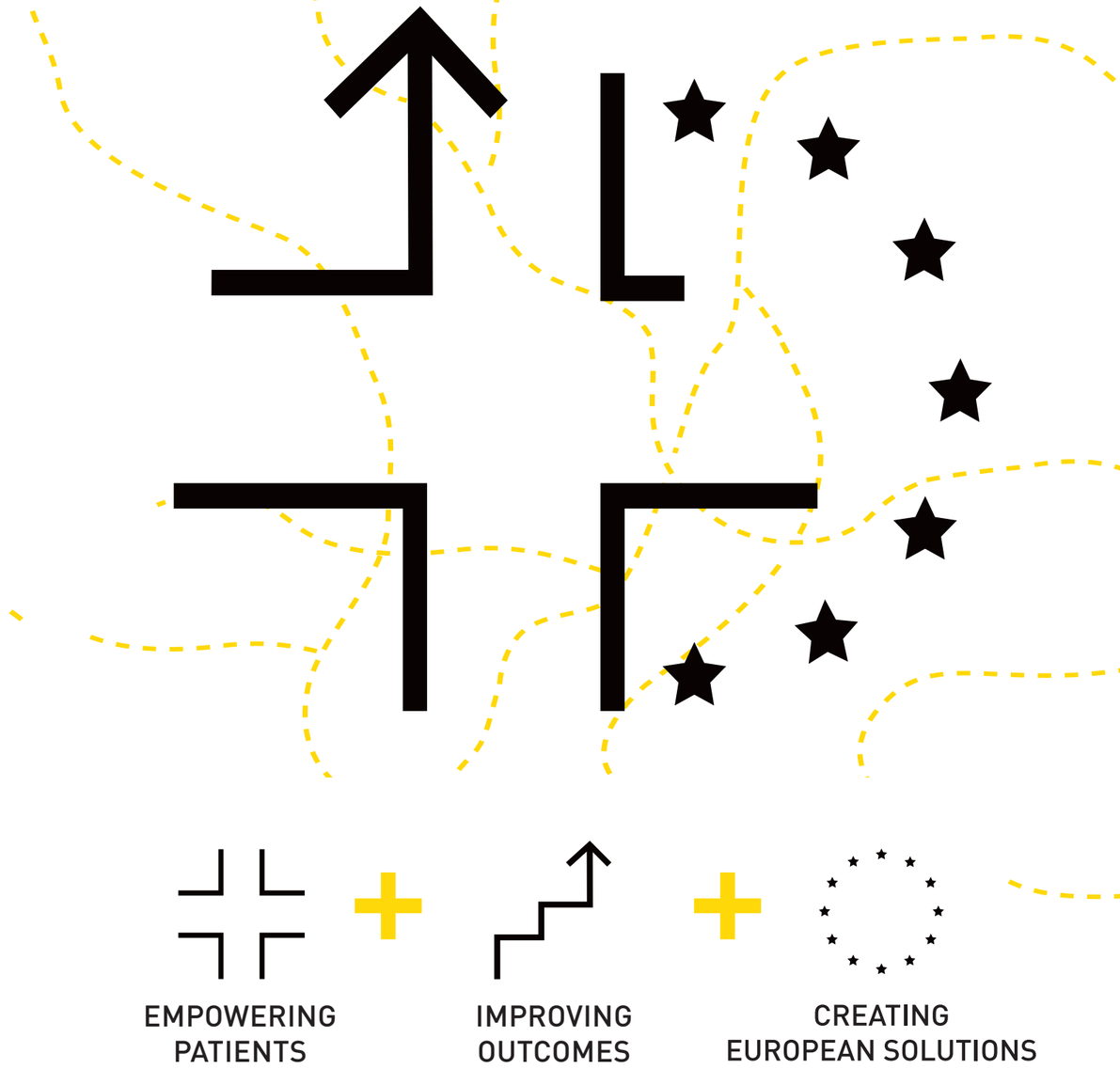
Suzanne Wait, PhD

Managing Director at The Health Policy Partnership

Many have spoken about the need to move towards an outcomes-based approach to care in the past few years, but putting this in practice remains challenging. We cannot allow ourselves to collect data for data's sake – instead we need to think about which data to collect, and how this can contribute in a meaningful way to improve our systems of care, keeping the patient foremost in our minds. This report from the European Health Parliament has been drafted with that ethos and brings forward excellent recommendations that all policymakers, and indeed everyone working in health policy, should subscribe to.

COMMITTEE ON OUTCOMES-BASED HEALTHCARE

Boosting Healthcare Outcomes in Europe



Executive summary

Despite the fact that the European Commission has successfully managed to drive the collection of 'hard' data, there remain considerable gaps and challenges in health data coverage.

EU Member States have developed significantly different approaches to monitoring and assessing healthcare system performance. Countries also record and store health data differently as wide variations are being observed in the definition of medical indicators and structure of Electronic Health Records (EHRs), while only few countries have introduced a Single Patient Identifier (SPI) systems facilitating crossborder integrated care.

Ensuring data standardisation and interoperability is just, however, one part of the solution. EU healthcare systems tend to measure inputs (e.g. healthcare spending), processes (e.g. blood pressure checks) and outputs (e.g. blood results), but do not sufficiently take into account outcomes (e.g. quality of life indicators), which matter most to patients. In addition, there is no standardised approach to collecting, analysing or interpreting Patient-Reported Outcomes (PROs) in clinical trials and evidence shows that patients' involvement in the development of PROs remains limited.

To drive the transition towards outcomes-based health care, we recommend to:

1. Boost the collection of patient outcomes data by ensuring that PROs questionnaires are co-created with patients, fostering the inclusion of PROs as primary outcomes along with traditional clinical endpoints in clinical trials, and expanding the collection and use of Real World Evidence (RWE);
2. Set up common core indicators (including patient outcomes data) for Health Systems Assessment Frameworks (HSAF) to run benchmark assessments, learn from best practices, and drive policy change;
3. Launch an EU multi-stakeholder Expert Group to drive political momentum, leverage existing outcomes-based initiatives, collect recommendations and provide country-specific guidance to Member States on how to adopt such indicators and standards;
4. Complete the implementation of Electronic Health Records (EHRs) and move towards the implementation of Single Patient Identifier (SPI) systems across the EU;
5. Incentivise and empower countries by developing an EU-wide repository of existing initiatives improving patient outcomes, sharing guidance on outcomes-based healthcare in the European Semester review, and integrating outcomes-based healthcare in education curricula.

HEALTHCARE CHALLENGES AT A GLANCE

20-40%

of healthcare spending is estimated to be wasted on ineffective interventions

(WHO 2010)

1 in 10

patients in OECD is harmed at the point of care or receives low-value care making no difference to their health outcomes

(OECD 2017)

2 years

of life gained for patients in OECD countries if inefficiency in health care is reduced

(DG ECFIN 2015)

€2,8 bn

is the minimum annual economic burden of adverse events in EU28 while 44- 50% of them are preventable

(DG SANTE 2016)

Introduction

With 20-40% of healthcare spending estimated to be wasted on ineffective interventions at a time of limited resources and increased demand for healthcare innovation and services, the efficiency of EU healthcare systems must be challenged. How? By building outcomes-based, data-driven, and patient-centred healthcare systems.

The International Consortium for Health Outcomes Measurement (ICHOM), a non-profit, multi-stakeholder organisation, has defined outcomes as "the results people care about most when seeking treatment, including functional improvement and the ability to live normal, productive lives."[1]

By collecting, mining and sharing patient-centred evidence, we believe the outcomes-based healthcare revolution will usher a new world of opportunities for policymakers and stakeholders to provide the right services to the right people at the right time. This EHP contribution sheds lights on some of the main challenges facing EU healthcare systems and sets out a series of recommendations for stakeholders (EU institutions, Member States, payers, HCPs, patients, advocates, researchers, and the industry) to consider and act upon.

Recommendations

WHERE WE ARE

The European Commission has successfully managed to drive the collection of 'hard' data with its European Core Health Indicators (ECHI) initiative providing reliable statistics on mortality rates, survival, incidence and healthcare expenditure. However, there remain considerable gaps and challenges in health data coverage.

#1 Data fragmentation and interoperability

The world is awash in health data, with information being generated at an ever-increasing pace: 153 exabytes (exabyte = 1e+12 megabytes) were produced in 2013 and 2,314 exabytes are estimated to be produced in 2020.[2] Health wearables, genomic analytics, and the digitalisation of hospital databases are a few examples contributing to the big data revolution. However, data remains for the larger part in silos, as countries mostly operate with fragmented databases (e.g. public and private patient registries, national and regional databases, etc.). Besides ECHI, EU Member States do not necessarily monitor, collect, and measure the same data, making it complex to run benchmark assessments, compare data sets, and learn from best practices.

i. Fragmented assessments of healthcare systems

Following the adoption of the 2008 Tallinn Charter,[3] Health System Performance Assessment (HSPA) frameworks have been developed across the EU to monitor and evaluate the performance of healthcare systems and units (such as hospitals) against a number of criteria such as quality, access, equity, and efficiency. On paper, these frameworks were developed to support performance-driven health policies, while increasing the value for money in a context of economic downturn. However, the Expert Group on HSPA, representing national ministries of health, pointed out in its 2014 report that EU countries have developed significantly different approaches to monitoring and assessing healthcare system performance. Not only are HSPA goals defined by each country but the number of indicators vary from less than 30 in Austria to more than 1,000 in Finland.[4]

ii. Significant discrepancies in electronic health records

The lack of data interoperability is also apparent in the way Member States record and store health data. Not all general practitioners currently record health data electronically, which makes it difficult to perform nation-wide analysis. Furthermore, wide variations have been observed in the definition of medical indicators and structure of Electronic Health Records (EHRs) used to keep track of the patient's pathway (e.g. prescription, consultations and hospitalisation, etc.). In this regard, a 2014 report of DG Connect comparing national legislation on EHRs revealed that less than half of EU Member States implemented specific rules and standards on EHR interoperability.[5] Similarly, while the 2011 EU cross-border healthcare directive set the foundations for safeguarding patients' rights to seek treatment outside their home country, only few countries such as Denmark, Estonia, Ireland and the UK have introduced single patient identifier (SPI) systems facilitating cross-border, integrated care.[6]

iii. Insufficient integration of socio-economic data

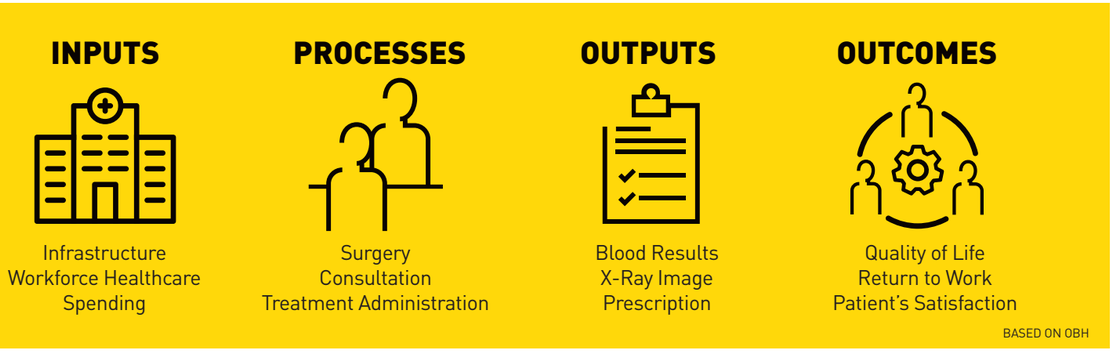
Health policy decisions are essentially based on health-specific data such as medical records, medical resources utilisation, care consumption, morbidity, and mortality data but too often fail to integrate data on social determinants of health generated by National Statistical Offices (e.g. unemployment, education, health literacy, etc.). Social

determinants of health are mostly responsible for health inequities and play a leading role in the development of chronic conditions such as diabetes, cancer, and chronic obstructive pulmonary disease. As a result, health systems tend to focus more on ad-hoc disease treatments rather than long-term prevention programs. Lifestyles and the socio-economic dimension of health are not taken into account in the patient pathway adequately enough.

#2 Insufficient collection and use of patient outcomes data

i. Outcomes vs. inputs, outputs and processes

Health systems collect vast amounts of data (e.g. number of patients being treated, quantity of services delivered, healthcare spending, guidelines, etc.) and typically focus on rates of recurrence, survival, and treatment as markers of success. We tend to measure inputs (e.g. healthcare spending), processes (e.g. blood pressure check), and outputs (e.g. blood results) more than true outcomes (e.g. preserved quality of life, reduced pain) which matter most to patients.



ii. Insufficient integration of patient outcomes in clinical trials

A growing number of clinical trials are going beyond conventional Randomised Controlled Trials (RCTs) and collect Patient-Reported Outcomes (PROs) to include the patient's perspective in the drug development process. The number of trials collecting PROs grew from 6.1% (2005-2007) to 16.3% (2011-2013).[7]

The European Medicines Agency (EMA)'s 2016 guidance document reinforced the need for the development and application of PROs in the oncology setting. EMA advises that, where relevant, the integration of PROs should be pursued as an objective in clinical trial protocols. Despite growing interest among sponsors, clinicians, payers, regulators, and patients in developing and applying PROs across the drug lifecycle, progress has been slow. The EMA recognises that there is no standard approach to collecting, analysing or interpreting PRO data in clinical trials and that PRO measures are used often as secondary or exploratory outcomes, but rarely as primary outcomes in regulatory submissions.[8]

iii. Unsatisfactory involvement of patients in outcomes definition

A number of studies investigating the quality and acceptability of PROs found no clear evidence of patient involvement in the development of PRO questionnaires[9] which are, in practice, primarily developed by healthcare professionals, hence not always accurately reflecting patient views.

WHERE WE WANT TO BE

I. Data collection and standardisation

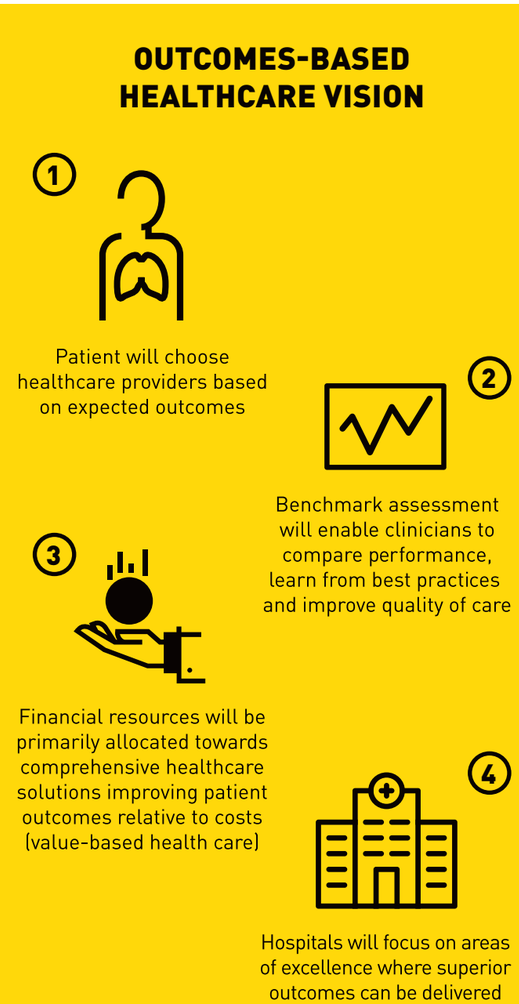
RECOMMENDATION #1

Boost the collection of patient outcomes data

While the majority of data collected tracks processes, administrative tasks and captures clinical outcomes, there is a gap when it comes to the collection of patient outcomes data.

We recommend that:

- Patient reported outcomes and experience measures (PROMs/PREMs) questionnaires should be co-created with patients to ensure they reflect what matters most to them. More generally, it is paramount to make sure that outcomes-based healthcare is driven via an inclusive, multi-stakeholder approach, including healthcare professionals, patients, carers, industry representatives, policy-makers payers, etc.;
- Unless there is a legitimate scientific rationale, clinical trials should collect and measure PROs and quality-of-life indicators as primary outcomes along with traditional clinical endpoints such as overall survival (OS) and progression-free survival (PFS);
- Every day patients are older, less healthy and more diverse than patients involved in randomised clinical trials,[10] it is paramount to further expand and systematise the collection and use of real-world evidence (RWE).



RECOMMENDATION #2

Create high-quality HSPA frameworks

Development and use of well-functioning national health systems assessment frameworks (HSPA) is an absolute necessity in order to reach a high quality of care. Although the design of HSPA is in the hands of EU Member States, common core indicators (including patient outcomes data) should be established to enable comparison of results. Furthermore, guidance on implementation of common indicators and high-quality HSPA networks should be included in the country-specific recommendations of the European Semester.

RECOMMENDATION #3

Leverage existing outcomes-based initiatives and drive political momentum

To implement outcomes-based healthcare systems, we need to establish common language on outcomes to ensure that every institution measures and collects data serving the same purpose. Since 2012, ICHOM has been driving this ambition forward and has successfully managed to complete the development of 23 standardised datasets covering over 54% of the global disease burden. Building on ICHOM's pioneering research activities, OECD announced in 2017 that it will accelerate and expand the standardisation of patient-centred, outcomes-based datasets as part of its Patient-Reported Indicators Survey (PaRIS). While the EU is co-funding this joint initiative, we believe it is important for the Commission to go one step further.

The Commission should set up a multi-stakeholder Expert Group to collect recommendations and provide country-specific guidance

to Member States on how to adopt such indicators and standards.[11] Such EU leadership is important to bridge the gap between Member States (as 6 countries – Bulgaria, Croatia, Cyprus, Lithuania, Malta, and Romania – are not part of the OECD) and to drive political momentum across the EU.

RECOMMENDATION #4

Be digital

Policy and practice need to catch up with science. The use of technology does not only allow data to be analysed and compared efficiently, but it also facilitates patients' (i.e. end-users) experience and tackles the issue of overburdened healthcare professionals, enabling faster reporting and filing systems. Hence, there is an urgent need to complete the implementation of electronic health reports (EHRs) across the EU. All EU Member States should progressively move towards the implementation of Single Patient Identifier (SPI) systems to ensure that patient files are transferable throughout the EU and to fully facilitate the implementation of cross-border healthcare, allowing swift patient movement and avoiding the duplication of health exams. Moreover, the Eurobarometer survey published in May 2017 showed that 52% of respondents would like online access to their medical data.[12]

II. Incentivise and Empower EU Member States to adopt Outcomes Based Health Care

Although a few organisations are driving the outcomes-based healthcare revolution, the concept remains in its infancy. EU institutions have a leading role to play in demonstrating its holistic value for healthcare systems and should incentivise and equip Members States to facilitate this paradigm shift. As the Director General of DG SANTE, Xavier Prats Monné, puts it: '[...] we have a mandate to develop, particularly within the Directorate General for Health and Food Safety, the necessary expertise on the performance of health systems, to build up solid country-specific and cross-country knowledge which can inform policies at national and European level.[13]

RECOMMENDATION #5

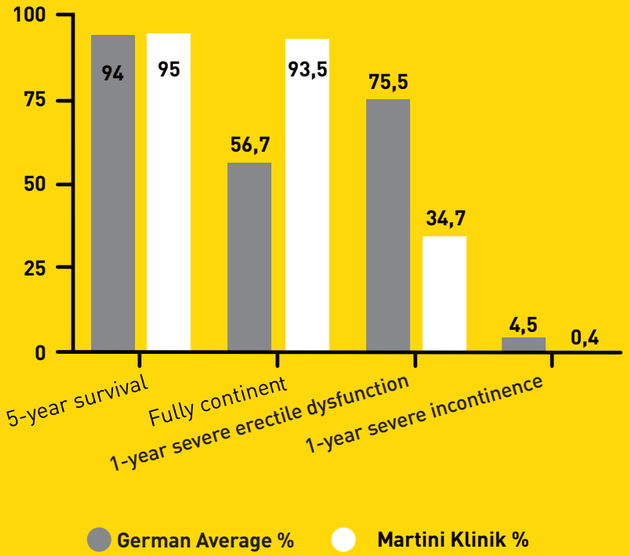
Learn from best practices

To ensure stakeholders learn from best practices, the Commission should develop an EU-wide repository of existing initiatives improving patient outcomes. Such business cases would not only shed light on the value of outcomes-based healthcare, but also promote cutting-edge science and service excellence across the EU. A prime example of such an initiative is the treatment of prostate cancer by the German Martini Klinik. This centre of excellence has developed a unique patient-centred approach which has significantly outperformed standards of care across the country (see Martini Klinik case study).[14]

CASE STUDY: PROSTATE CANCER AT THE MARTINI KLINIK

Since its inception in 2005, Hamburg's Martini Klinik has single-mindedly focused on prostate cancer care with a commitment to measure long-term health outcomes for every patient. In particular, this center of excellence has built an unprecedented, multi-layer data set, collecting clinical outcomes (e.g., positive surgical), mortality rates and administrative processes (e.g., urinary function, quality of life).

This comprehensive patient-centred approach has enabled the clinic's multidisciplinary HCP team to identify the need for patients facing better complication rates to be assisted by more experienced surgeons. The results proved to be significantly higher than other institutions, and by 2013, Martini Klinik had become the largest prostate cancer treatment program in the world with 5,000 outpatient cases and more than 2,200 surgical cases annually, with patients coming from all over Germany and from other countries.



BASED ON THE CONSENSUS DOCUMENT THE VALUE OF HEALTH, IMPROVING OUTCOMES

To facilitate best-practices sharing, the European Commission could integrate further guidance on OBHC into its European Semester review, along with its existing country-specific recommendations on access, affordability, efficiency, and integrated care.

RECOMMENDATION #6

Integrate outcomes-based healthcare in education

Training plays an important part in modernising healthcare services and improving care quality. In this regard, the Commission should collaborate with leading service providers and centres of excellence (e.g. Barcelona Campus, Spain and IRCAD, France) to develop and assist Member States in running a series of workshops for healthcare providers and clinicians to understand how outcomes-based healthcare could be implemented (especially on the collection, mining, and use of electronic health data). Similarly, the Commission should encourage Member States to integrate outcomes-based healthcare in medical and nursing training programmes and education curriculum.

Conclusions

OUR MESSAGE TO EUROPEAN POLITICAL LEADERS

A wide range of pioneering initiatives are currently emerging to pave the way for an outcomes-based healthcare approach in a context of limited resources and increased demand for healthcare innovation and services. But this burgeoning field has a long way to go before being widely adopted by EU Member States as countries still face considerable challenges in the collection and implementation of health data and do not sufficiently take into account patient outcomes. Driving this ambitious paradigm shift will require the cooperation and contribution of all healthcare stakeholders.

Though healthcare remains the remit of Member States, EU institutions, and more particularly the European Commission, have a significant role to play in providing guidance to EU Member States to facilitate the implementation of best practices and improve the efficiency of national healthcare systems.

OUTCOMES-BASED HEALTHCARE

STAKEHOLDERS	WHAT'S IN IT FOR ME?	HOW CAN I CONTRIBUTE?
Patients	• Patients are at the centre of healthcare • Patients have the ability to choose healthcare providers based on expected outcomes	• Patients should share their health data • Patients should contribute to outcomes definition, collection, and assessment
HCPs/ Researchers	• HCPs can develop expertise in core therapeutic areas and build centres of excellence across the EU • HCPs can deliver significantly superior outcomes for patients • HCPs can learn from best practices	• HCPs should share best practices • HCPs should integrate outcomes-based, data-driven analysis in their decision-making processes • HCPs should participate in training and education programmes on OBHC
Payers	• Payers could better allocate resources by financing innovations and interventions delivering superior outcomes and/or reducing waste and inefficiencies	• Payers should develop and implement value-based assessments • Payers should reward patient-centred approaches by prioritising quality of life indicators
Policymakers	• Policymakers could significantly improve the efficiency and sustainability of healthcare systems • Policymakers would collect better evidence to support health prevention programs	• Policymakers should gather political will and concentrate on long-term health policies and paradigm shift toward more sustainable healthcare • Policymakers should drive the standardisation and interoperability of data sets • Policymakers should incentivise best practices in outcomes-based healthcare and integrate this approach in education curriculum
Industry	• Innovations could be rewarded based on patient outcomes and their added-value for healthcare systems	• The industry should improve the collection of RWE and measure PROs as primary outcomes in clinical trials

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COMMITTEE ON ROBOTICS, AI & PRECISION MEDICINE

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Chief Executive Officer at MedTech Europe

The European Health Parliament inspires not only its members but also us, who have worked in healthcare for many years. Innovative thinking is what drives forward the fields of robotics, AI and precision medicine. And I see the same kind of innovation coming from the members of this committee. By making digital health available, affordable and acceptable, we can ensure a healthy Europe for years to come.

To say that I enjoyed working with the young minds of this committee would not be enough. We will continue to work together long after this session of the EHP has ended. I'm confident that not only will they make health great again, they will also make it digital.

Michał Boni

Member of the European Parliament (EPP, Poland)

I fully agree with the submitted strategies to implement digital solutions in European health systems. True digital transformation requires a sharp break with past practices, legacy systems and even long-standing partners. To make that possible, Europe needs to map out how it intends to migrate from the past to the future. We need to be in a state of constant #Digitalhealth revolution. Thank you for your thorough work.

Gino Gumirato

Former Member of the American PPACA Commission

For many years we have been focused on identifying excellent governance models, often losing ourselves in demagogic clashes on public health systems versus private ones. The merit of this report lies in how it shows that the 'future is already here (see Peter Durcker)', which, between the Internet of Things, robotics, infrastructure and digital health technologies, identifies a revolution that brings an unprecedented value creation.

Executive summary

The promise of digital health in Europe is undeniable. But to make this promise a reality, it is necessary to break down several barriers to make digital health technologies available, affordable and acceptable.

Available

1. Create a Connected European Health Area, which acts as a long-term vision on the required digital health infrastructure in Europe.
2. Establish a Digital Health Investment Fund, to support the creation of the CEHA.
3. Promote pilot projects to make Europe the world's frontrunner in digital health.

Removing the structural barriers to digital health by establishing a Connected European Health Area would reliably deliver digital health services to European citizens.

Affordable

4. Adapt health systems to incentivise the use of digital health technologies, by developing appropriate reimbursement models.
5. Ensure digital health in all policies, starting with the next MFF.

Adapting health systems to integrate digital health technologies would accelerate R&D as well as manufacturing, thus driving down the cost of new discoveries. This speeds up access for patients and will ease the burden on our health systems.

Acceptable

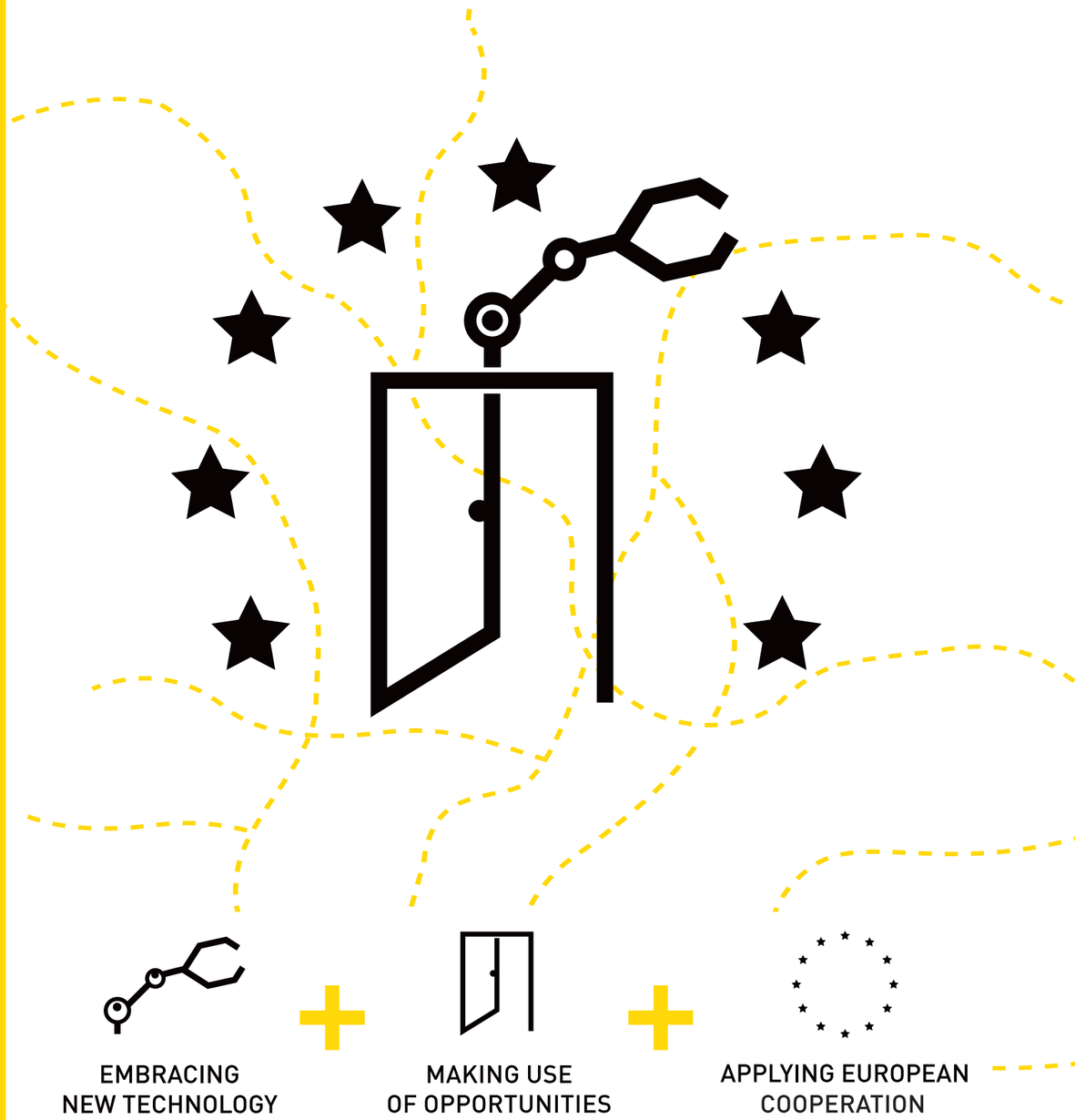
6. Establish grounds for trust in digital health, starting with GDPR and a review of the Liability Directive.
7. Help healthcare practitioners prepare for the future of healthcare.
8. Engage citizens through access to electronic health records and an awareness campaign.

Ensuring that healthcare practitioners and patients are willing and able to use digital health technologies to improve prevention, diagnosis, intervention and treatment is essential.

Digital health has incredible potential, but this is meaningless if it is not available, affordable and acceptable...

COMMITTEE ON ROBOTICS, AI & PRECISION MEDICINE

Breaking down barriers to digital health in Europe



Introduction

European health systems are under stress. An ageing population, changes in societal behaviour and the rise of chronic diseases increase the long-term cost of healthcare. Together with budgetary constraints, this puts immense pressure on the sustainability of our healthcare systems that cannot be solved by merely throwing more money at them.

Fortunately, digital health technologies can improve our health services, as is shown in Figure 1. Advances in robotics, AI and precision medicine mean patients can benefit from improved health outcomes and a higher quality of life. Health systems see a reduction of healthcare costs, improved quality of services and overall more effectiveness. Indeed, as Commissioner Andriukaitis recently noted, digital tools can be used to improve health in Europe through promotion, prevention and protection.

However, the success of this digital transformation of health depends on how we embrace it in the years to come.[2] Access to quality and affordable healthcare for all citizens should be the ultimate goal for each and every society. The Committee on Robotics, AI & Precision Medicine, therefore, proposes a set of recommendations to ensure that digital health is **available**, **affordable** and **acceptable**.

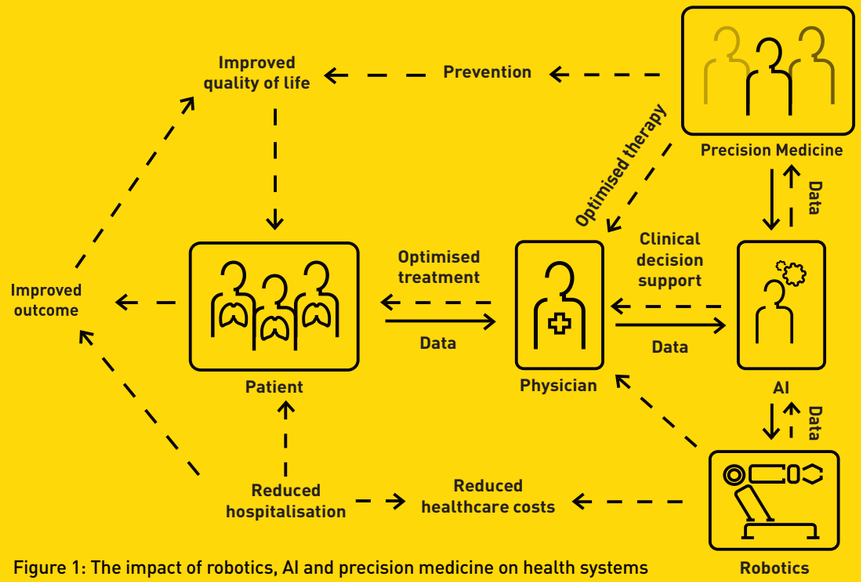


Figure 1: The impact of robotics, AI and precision medicine on health systems

For Europe to embrace digital health, it must be available, affordable and acceptable to all Europeans.

Policy Environment

The **European Commission** adopted its first eHealth Action Plan in 2004,[3] followed by a second action plan in 2012.[4] Several initiatives and legislative texts have supported these plans, including the 2011 Cross-Border Healthcare Directive,[5] the Commission green paper on mobile health[6] and the Commission staff working document on telemedicine.[7]

Under the current Commission, promoting digital health became a goal of the Digital Single Market Strategy (DSM). The 2017 mid-term review of said strategy and an internal task force also looked at how the DSM can benefit European citizens, healthcare systems and the European economy at large.[8] The ensuing public consultation on health and care in the DSM sought to collect input for a forthcoming Communication on eHealth,[9] which will focus on three pillars:

1. Citizens' secure access to health data and sharing of their health data across borders.
2. Connecting health data to advance research, disease prevention, treatment and personalised health and care.
3. Using digital tools to foster citizen empowerment and person-centred care.

Meanwhile, the **Estonian Presidency of the Council** launched the Digital Health Society in July 2017,[10] which eventually led to the adoption of the Council conclusions on health in the digital society.[11] The **European Parliament** has also adopted a resolution on Civil Law Rules on Robotics, among others.[12]

Momentum for digital health in Europe is clearly building, but for the EU to take on a leading position in the future health technologies, we need to take action now. We hope that, together with the Commission's upcoming Communications on eHealth and AI, our recommendations set out a plan to realise the potential of digital health and, ultimately, advance our common goal: better health for all Europeans.

I. Available

Digital health has incredible potential, but this is meaningless if it is not available.

Despite proof of the benefits that digital health technologies offer, structural barriers hinder their availability to patients. The lack of infrastructure and long-term planning are two barriers that we need to break down in the years to come. On the one hand, proper infrastructure can make health digital. On the other hand, a long-term vision will rally round all partners, public or private, to make our healthcare systems fit for the future. To ensure that digital health is available, the European Commission, together with the Member States and the European Parliament, should:

Recommendation #1

Create a Connected European Health Area

• **Formulate a vision on the required European digital health infrastructure**, based on criteria, such as connectivity, interoperability, and safety. The Connected European Health Area could follow the models of the Trans-European Transportation and Energy Networks. The Commission should translate the second priority in its upcoming Communication on eHealth, namely to connect health data to advance research, disease prevention, treatment and personalised health, into a concrete infrastructure investment plan, akin to the present Investment Plan for Europe.

• **Support individual actors to build digital capabilities**, such as hospitals, clinics, SMEs and research institutes, both physically (by linking up Europe's regions, boosting connectivity, expanding facilities) and in terms of human capital (technical skills & know-how).

Recommendation #2

Establish a Digital Health Investment Fund

• **The Digital Health Investment Fund will support the creation of the Connected European Health area**. It should invest in both the development and implementation of digital health technologies. The Fund should be one of the instruments to address strategic infrastructure in Europe considered for the next Multiannual Financial Framework.

• **Public-Private Partnerships can leverage alternative sources of funding**. Similar to the European Fund for Strategic Investment, private investments can be redirected to strategically important projects. Horizon 2020 partnerships, like the Partnership for Robotics in Europe (SPARC), the Human Brain Project or Big Data, already demonstrate that collaboration between EU institutions, industry and academia can drive results.

Recommendation #3

Promote pilot projects to make Europe the world's frontrunner in digital health

• **Foster cooperation in digital health across Europe's regions through pilot projects**. This can be done both physically by creating health tech test beds within identified areas to test implementation in practice as well as by providing digital platforms. The European Commission can facilitate such projects and establish an expert committee to identify projects that can be scaled up and promote uptake of proven innovation.

• **Frontrunner Member States and regions can provide leadership and guidance** to the other Member States, as is currently done with the eHealth Digital Services Infrastructure for sharing patient summaries and ePrescriptions across borders.[13]

• **Explore programmes to fast-track digital health innovations for timely access**, such as the US FD Software Precertification (Pre-Vert) Programmes.

Removing the structural barriers to digital health by establishing a Connected European Health Area would reliably deliver digital health services to European citizens.

II. Affordable

Digital health has incredible potential, but this is meaningless if it is not affordable

Health systems are currently not ready to adopt digital health. The pace of innovation outstrips the pace of changing legislation and allocating funding necessary for integration. The start-up costs of digital health can be high. Regional differences in terms of economic development, knowledge and infrastructure also hamper adoption. To ensure that digital health is affordable, the European Commission, together with the Member States and the European Parliament, should:

Recommendation #4

Adapt health systems to incentivise the use of digital health technologies

• **Develop appropriate models for the reimbursement of digital health technologies**. Current models do not adequately cover digital health innovation, limiting widespread adoption of digital health by providers. Some Member States have taken first steps in this direction, such as Belgium, which is preparing to reimburse health apps based on three criteria. Reimbursement models could shape the health environment, for instance by requiring interoperability or the publishing of health-economic outcomes in incremental reimbursement schemes.

• **European cooperation on HTA should take into account digital health technologies.** To be effective- and to avoid revisions in the near future – the potential regulation to strengthen EU cooperation on health technology assessment beyond 2020 should include provisions for the assessment of digital health technologies.[14] Phasing out health technologies that are no longer cost-effective will also help improve the sustainability of our health systems.

Recommendation #5

Ensure digital health in all policies, starting with the next MFF

• **Health in all policies should specifically include digital health in all policies**. The discussions on the next Multiannual Financial Framework present the first opportunity to enshrine this principle as an allocation priority for each of the relevant instruments in the next budgetary framework, including those for Strategic Infrastructure, the European Structural and Investment Funds, the apparent Framework Programme for Research and Innovation and an independent Health Programme.

• **These instruments should support the creation of the Connected European Health Area**, in addition to realising the priorities for EU actions in health identified in the Digital Single Market mid-term review and the Commission's forthcoming Communications on eHealth and AI.

Adapting health systems to accommodate digital health technologies would accelerate R&D as well as manufacturing, thus driving down the cost of new discoveries. This speed up access for patients and will ease the burden on our health systems.

III. Acceptable

Digital health has incredible potential, but this is meaningless if it is not acceptable.

Widespread adoption of digital health technologies requires society to accept them, which is currently not self-evident. Perennial privacy and safety concerns and fear of abuse leave many individuals apprehensive about sharing personal health data. Legal measures to address these concerns are only partly in place and do not answer all questions. Knowledge gaps and the digital divide also slow adoption; although healthcare practitioners believe that digital technologies will trigger a new healthcare paradigm, many feel equally unprepared to keep up with the pace of change.[15] To ensure that digital health is acceptable, the European Commission, the Member States and the European Parliament, should:

Recommendation #6

Establish grounds for trust in digital health

• **Use of digital health technologies should be based on consent**. The General Data Protection Regulation (GDPR) is a major step forward in the protection of personal data, including data concerning health. However, inconsistent legislation between the Member States should be avoided where possible in order to improve clarity for patients and HCPs and increase the willingness to invest in digital health.

• **Involve patients as well HCPs from the start** to ensure effectiveness and desirability, for instance in the aforementioned pilot projects. Medical programmes, products and services should only be developed if desired – and hence accepted – by the people that will use and benefit from them.

• **Review the Liability Directive from 1985 to see which aspects are still fit today**. The work of the recently announced High-Level Expert Group on Artificial Intelligence, which will also propose AI ethics guidelines to the Commission, may feed into this.[16]

Recommendation #7

Help healthcare practitioners prepare for the future of healthcare

• **Help HCPs prepare for the future of healthcare** by integrating computing, ethical and practical skills into medical curricula, as well as through continued professional development programmes that equip practitioners with the latest know-how. This should address concerns that digital health technologies may one day replace physical HCPs, which is neither needed nor wanted.

• **Create an interdisciplinary workforce** that transcends the medical profession, for instance through courses on medical ethics for software engineers.

• **Facilitate updating of clinical guidelines to include digital health technologies where appropriate**, so HCPs know how to use them in daily practice.

Recommendation #8

Engage citizens

• **Engage citizens through an awareness campaign: sharing is caring!** The GDPR presents an opportunity to make a persuasive and transparent case for digital health. This could be based on three pillars. First, data sharing will deliver more personalised and hence improved healthcare. Second, while there are serious concerns, a new protection mechanism is now in place. Third, data sharing will benefit the public good, for instance by making clinical data available for research. These pillars should be supported by evidence in the form of case studies.

• **Ensure access to electronic health records.** Individuals should have access to all data related to their health history and, under certain conditions, be able to add information, though never amend or delete medical data entered by a professional. This should drive individual involvement.

Ensuring that healthcare practitioners and patients are willing and able to use digital health technologies to improve prevention, diagnosis, intervention and treatment is essential.

Conclusions

OUR MESSAGE TO EUROPEAN POLITICAL LEADERS

The world is in a digital transition, and the health industry is quickly catching up. The EU must grasp this opportunity to become the world's leading continent in digital health by ensuring that modern and future technologies are available, affordable and acceptable.

Digital health is the means, not the end. Adoption of these technologies will not only benefit the health of all Europeans and guarantee the sustainability of our health systems, but furthermore make Europe attractive for industry, create jobs, and establish the European Union as the leader in digital health innovation.

Our committee, therefore, eagerly awaits the Commission's upcoming Communications on eHealth and AI. We believe that the recommendations set out in this report can add EU value to future undertakings to make health digital.

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COMMITTEE ON ANTIMICROBIAL RESISTANCE

Andrea Chiarello (Chair)

Giulia Meneghin (Vice-Chair)

Grazia Antonacci

Nina Brkuljan

Cynthia De Carvalho Fischer

Bastian De Monte

Hannah Garrett

Samy Ravelle-Chapuis

Silvia Schmidt

Hugo van Rooijen

Karin Kadenbach

Member of the European Parliament & Rapporteur for the ENVI Committee's Own Initiative Report on AMR

If the European Health Parliament did not exist, we would have to invent it. It is great to see young, talented professionals so engaged in shaping the future of healthcare policies in Europe. As a parliamentarian, I fully support initiatives such as the EHP which promote innovative thinking and contribute in a very concrete way to improve the work of policy-makers. I have enjoyed the collaboration with the Committee on Antimicrobial Resistance (AMR) and look forward to continuing our work together to tackle the global public health threat posed by resistant bacteria. The AMR Committee has produced some interesting ideas that will certainly inspire my day-to-day work at the European Parliament. For example, they underline the importance of involving stakeholders and establishing clear accountability when implementing policies at all levels; they call for the introduction of per-unit dispensing of antibiotics in pharmacies to facilitate appropriate use; they also emphasise the urgent need for new economic models to incentivise R&D in new antibiotics and vaccines to fight AMR. My sincere congratulations!

Robert Madelin

Chairman, Fipra International

The huge strength of the EHP lies in the very broad range of expertise it contains. And in a field such as AMR, breadth is the key success factor: because the drivers of misuse of antibiotics are often rooted in social attitudes and deep-rooted practice and habit. The perspective offered here also accurately pinpoints the need for the AMR challenge to be met with a single and coherent network of actors, covering the animal health as well as human health communities. Global cooperation is certainly a necessary tool, and I welcome the link made to trade policy, where I personally prefer to see carrots rather than sticks deployed in the trade field. Overall, the AMR report makes yet again the case for health in the broad sense to be a European Union strategic priority, and not an object of sacrifice on the altar of localism.

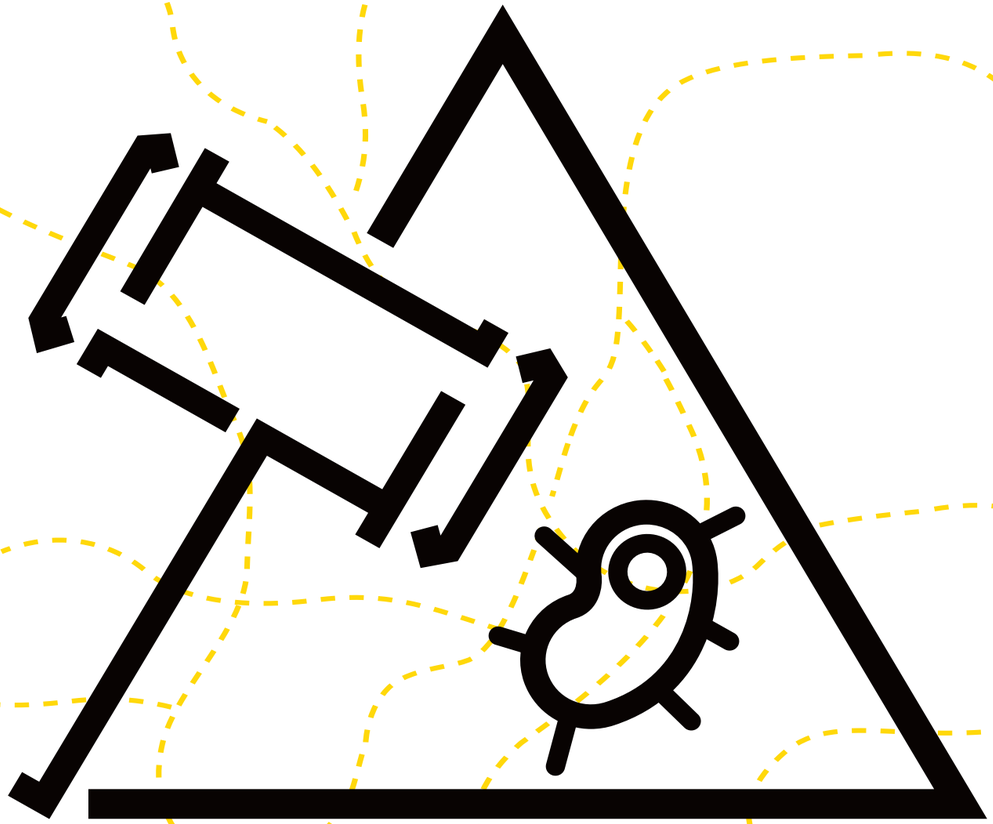
Executive summary

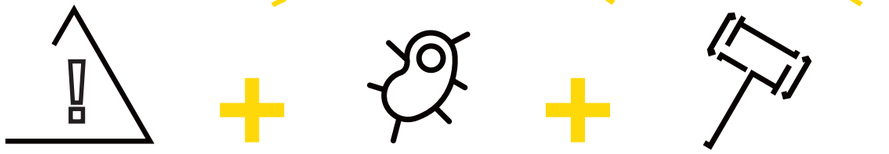
This report does not intend to merely echo the well identified priorities by the European Commission to tackle antimicrobial resistance (AMR), notably in the 2017 EU AMR Action Plan and the EU Prudent Use Guidelines.[1] We rather aim to present a non-exhaustive list of areas where closer cooperation can add value, and specific actions that, if properly implemented, can take us forward in the fight against AMR:

1. We suggest establishing an EU-level multi-stakeholder platform with **clear accountability mechanisms**, to support the work of the AMR One Health Network.
2. **Member States should consolidate their governance infrastructure** to implement AMR strategies, defining clear targets and responsibilities at appropriate levels.
3. **The scope of the work of the European Reference Networks should be expanded to cover emerging multi-drug resistant infections**, the improvement of patient treatment across the EU and the rapid exchange and analysis of data.
4. Given the key role **pharmacists** play in raising awareness about AMR, preventing infections and facilitating appropriate use of antibiotics, they **should be enabled to act as "public health ambassadors" and, for example, administer influenza vaccinations.**
5. **Per unit dispensing of antibiotics should be expanded across Member States** to increase appropriate use, adherence to treatment and reduce environmental impact.
6. We call for a **shift towards a prevention-based approach in animal health** to decrease the need for antibiotics. We also propose measures to increase transparency in the food chain to empower consumers to make informed choices.
7. We emphasise the importance of continuous **education of healthcare professionals on AMR**, and argue that prescription practices should be evidence-based.
8. EU Member States should **expand the use of green public procurement** of antibiotics to promote a "race to the top" in terms of sustainability.
9. New sustainable economic models should be implemented to **incentivise both early and late-stage R&D in new antibiotics and vaccines targeting areas of unmet need.**
10. The EU should aim to **export its best practices to third countries**, including by leveraging trade and development policy tools.

WALKING THE TALK ON ANTIMICROBIAL RESISTANCE

Today's Actions for a Healthier Tomorrow





Introduction

"The thoughtless person playing with penicillin treatment is morally responsible for the death of the man who succumbs to infection with the penicillin-resistant organism."

Sir Alexander Fleming

Since the discovery of penicillin in 1943, antibiotics (and other antimicrobial treatments) have saved millions of lives and enabled unprecedented progress in modern medicine, ranging from complex surgical procedures to life-saving chemotherapy regimens. However, their inappropriate use has fostered the development of antimicrobial resistance (AMR) in bacterial organisms. In the EU alone, 25,000 deaths per year can be attributed to AMR, an economic loss of 1,5 billion EUR. **The cost of no action is simply too high**: if not tackled properly, by 2050 AMR could take 700 million lives per year globally with an impact of approximately 10 billion USD. AMR's disease burden would thus surpass that of cancer.[2]

As AMR continues to accelerate, an insufficient number of novel treatments are reaching the market due to both scientific and business challenges. The doomsday scenario of a 'post-antibiotic era' in which small injuries or infections could lead to death is on course to become reality within the coming century unless we take urgent and coordinated action. The increased awareness of the scale of the AMR threat has led to a proliferation of scientific research and policy initiatives in the past decade. AMR has risen to the top of the healthcare political agenda, with politicians recognising at the highest level the urgency of developing a "One Health" response, bringing together the human health, animal health and environmental dimensions of AMR. However, political attention is fruitless without accountability and concrete actions implemented and monitored at local, regional and national level. As final result of our work, we have identified a non-exhaustive list of actions that, if implemented properly, can reduce the gap between high-level political declarations and practical implementation of AMR strategies at European and Member State level.

Recommendations

RECOMMENDATION #1

Establish an EU-level multi-stakeholder platform with clear accountability mechanisms

Translating political commitments into tangible results requires a concerted and innovative effort. **We recommend that the European Commission establish an EU-level multi-stakeholder platform involving patients, academia, industry, clinicians and policy-makers**. This shall not replicate the stakeholder platform of the EU Joint Action on AMR and Healthcare-Associated Infections (EU-JAMRAI), but rather complement the work of the "One Health Network" that currently only comprises Member States representatives. Clear accountability should be established, by setting specific targets and deliverables for each stakeholder, to be monitored and peer-reviewed twice a year.

RECOMMENDATION #2

Establish an adequate governance infrastructure to implement AMR strategies

In order to effectively implement AMR strategies, each Member State should establish an adequate governance infrastructure, reflecting the different ways national health systems across EU are managed. This infrastructure should include (some of) the following roles:

- **A local AMR coordinator** for each healthcare organisation (e.g. hospital, community health services unit), responsible to ensure AMR strategies are appropriately implemented at local level, by promoting the adoption of hygiene and infection control guidelines; training and counselling healthcare professionals; collecting, monitoring and reporting infections, antibiotic use and resistance data. [3,4]
- **A regional AMR coordinator** for each territorial unit within a country (e.g. region, district), if applicable. He/she ensures compliance with national AMR strategies and epidemiological monitoring of antimicrobial-resistant infections, by coordinating strategies between healthcare organisations, local (e.g. schools) and national institutions (e.g. Ministry of health, national agencies). This would be particularly useful for countries where local and regional authorities have a major responsibility for organizing and delivering health services (e.g. decentralised or partially decentralised systems such as Italy, Spain or Austria).
- **A national AMR coordinator** to ensure implementation of WHO and EU-level strategies at country level, report and discuss AMR-related data, manage research funds and relevant findings, and share best practices.[5]

RECOMMENDATION #3

Expand European Reference Networks to emerging multi-resistant infectious diseases

Limited information is available on the treatment of emerging multi-resistant bacterial infections. The rapid spread and progression of these infections requires a prompt response that could be facilitated by stronger, structured European collaboration. **We recommend expanding the European Reference Networks (ERNs) to cover emerging multidrug-resistant infectious diseases**. We believe that the ERN model can be used to facilitate rapid exchange of information on resistant pathogens and on potential effective treatments, allowing patient access to top-level European specialists. Setting up a ERN for multidrug-resistant infectious diseases can create opportunities for data sharing and, in the longer term, facilitate clinical trial recruitment and foster research. This network could also create a bridge between hospitals, clinical practice and laboratories via the spillover effect of creating an EU-wide alert mechanism on emerging resistant pathogens.

RECOMMENDATION #4

Maximise the role of pharmacists in infection prevention and the fight against AMR

Pharmacists are key stakeholders in the fight against AMR, due to their role on the front-line of the healthcare system. They can provide advice on the effective and rational use of medicines, and, in some countries, they offer services such as vaccinations. We recommend maximising pharmacists' potential to act in the fight against AMR:

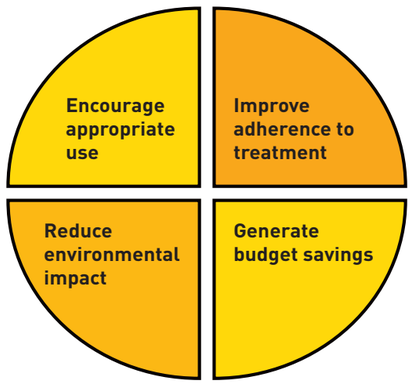
- All EU **Member States should allow pharmacists to vaccinate against influenza**, drawing on the models of those countries where this is already best practice. Increasing vaccination against influenza can reduce secondary bacterial infections and viral infections for which antibiotics are incorrectly prescribed.[6]
- **Given appropriate clinical evidence, we encourage the administration of simple diagnostic tests by trained pharmacists**, with the aim of reducing antibiotic misuse.
- **Pharmacists should be encouraged to instruct patients on the proper use of antibiotics and raise their awareness of AMR**. Particular emphasis could be placed on the importance of completing a course of antibiotics, appropriate disposal of leftover medicines and the use of alternatives such as over-the-counter (OTC) treatments for viral infections.

RECOMMENDATION #5

Packaging of antibiotics should be adapted to allow per unit dispensing of antibiotics

Considering the EU's objective to become a "best-practice region" on AMR, **we recommend that EU Member States allow per unit dispensing of antibiotics**. Allowing per unit dispensing of antibiotics would address imbalances between prescriptions and packaging, facilitate adherence to treatment and decrease misuse of antibiotics.[7] This could generate health expenditure savings for national healthcare systems that reimburse prescription medicines. To support this process, **the European Commission should gather data on the benefits of per unit dispensing**, including the impact on adherence to treatment, economic benefits and positive environmental effects.

Potential benefits of per unit dispensing of antibiotics



RECOMMENDATION #6

Shift to infection prevention in animal health as part of the "One Health" approach

We should reduce the need for antibiotics in animals and encourage a shift towards a more prevention-based approach:

- **We recommend increasing research into veterinary vaccines and providing incentives to vaccinate animals**. The example of Norway, where vaccinating salmon helped reduce antibiotic use in aquaculture to virtually zero, should be followed.[8]
- **We also encourage the development and uptake of affordable rapid diagnostic tests for veterinary professionals and livestock owners**, with the aim of switching to a prevention and diagnostic-led approach to animal health.

In order to enable consumers to make informed choices, **we recommend that meat products that respect antibiotic stewardship requirements be labelled as such**. An existing example is Italy, where the retailer Coop uses the label "bred without the use of antibiotics".[9] We also **call on all stakeholders in the food chain to collect and publish data on antibiotic use**. An EU-wide requirement in this sense should be explored to increase transparency and consumer awareness in the Single Market.

RECOMMENDATION #7

Encourage responsible and evidence-based prescription behaviour

It is crucial that healthcare professionals remain updated in infection prevention and on current AMR guidelines and best practices. **We recommend that all Member States introduce compulsory training on prevention and control strategies for AMR within continuous education programmes**. Similarly, studies have shown that feedback mechanisms may reduce prescriptions and encourage the appropriate use of antibiotics.[10] **We recommend that Member States move to integrate prescription feedback mechanisms in antibiotic stewardship programmes**. Individual healthcare providers would receive feedback from national health systems concerning their use of antibiotics relative to other prescribers in the region. This would target the misuse of antibiotics notably in the primary care setting. In addition, this measure could reduce variations in medical practice and increase compliance with national evidence-based guidelines.

RECOMMENDATION #8

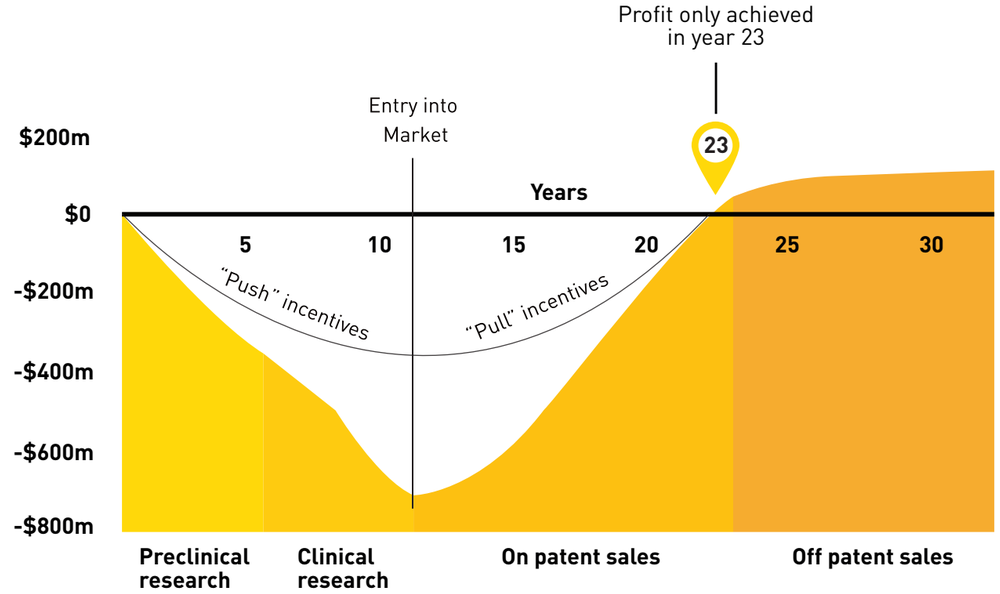
Expand the use of green public procurement of antibiotics

The 2017 EU Action Plan emphasises the need to address the environmental dimension of AMR. We call on the EU to lead a "race to the top" in terms of sustainability. Positive competition among manufacturers aiming to reach European markets could be promoted by **making broader use of green public procurement (GPP)**.[11] Building on best practices in Member States such as Sweden, public procurers at national, regional and local level (e.g. hospitals) should value the environmental quality of antibiotics. In cases where the active pharmaceutical ingredient (API) is the same, and the therapeutic effect is proven to be equivalent, the more sustainable, environmentally-friendly antibiotics should be preferred.[12] We recommend that the EU- JAMRAI develops a common set of guidelines on green procurement, to be adopted by all Member States.[13]

RECOMMENDATION #9

Develop new, sustainable economic models to incentivise R&D

New antibiotics and vaccines to prevent infections are a life insurance for future generations. However, alongside the intrinsic scientific and regulatory challenges in this area, the current volume-based business model is unable to attract private investment due to the need for prudent use of antibiotics. So far, the EU has provided funding mainly to de-risk early-stage research ("push incentives"), e.g. through the New Drugs for Bad Bugs (ND4BB) programme within IMI. However, robust "pull" incentive mechanisms are also needed to bring novel antibiotics to patients. To incentivise both early and late-stage R&D, while encouraging appropriate use, we urgently need new economic models in which the return on investment is at least partially de-linked from the volume sold.



REVIEW ON ANTIMICROBIAL RESISTANCE (ADAPTED)[14]

By 2020 the European Commission, in collaboration with the EU-JAMRAI, should:

- **Define and regularly update an EU list of priority pathogens** to direct antibiotics and vaccines R&D towards major areas of unmet need, building upon the WHO's list.
- **Perform a comparative analysis of "pull" incentive options at EU level**,[15] sustainable over the long-term and with a clearly identified funding source.
- **Define clear "public health safeguards" attached to the incentives**: these could include industry commitments on access, availability, appropriate use, promotional activities and sustainable manufacturing of new antibiotics.

RECOMMENDATION #10

Promote EU AMR best practices in third countries

We support the European Commission's objective to shape the global AMR agenda, both via global fora (WHO, OIE, UN) and with key partners (e.g. the US, through the TATFAR).[16] While in the long term coordinated global action remains the most desirable option, the urgency of the AMR threat requires concrete short-term measures. We recommend that the EU leverages the attractiveness of its Single Market and trade policy tools, notably to **enforce the ban on the use of antibiotics in animals as growth promoters in third countries**. The EU should also provide **technical and financial assistance** to developing countries, for example to improve antibiotic stewardship and surveillance programmes.

Conclusions

OUR MESSAGE TO EUROPEAN POLITICAL LEADERS

Research and innovation in the field of antimicrobials have brought undisputable benefits to society. However, their inappropriate use has accelerated the pace of AMR, fundamentally threatening the achievements of modern medicine. Although AMR has become a top political priority in Europe and globally, there is still a gap between high-level statements and concrete actions that needs to be addressed.

Our work does not stop here. The European Health Parliament's AMR Committee, building on the recommendations included in this report, will continue to proactively engage with EU policy-makers and key stakeholders in the run-up to the 2019 European elections, with the aim of building strategic partnerships to ensure AMR is high on the political agenda of the next European Commission. We will advocate for national and European political groups to include options to tackle AMR in their manifestos. We will also call for tangible and ambitious commitments on AMR and in healthcare more broadly in the ongoing negotiations for the next Multiannual Financial Framework (2021-2027).

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COMMITTEE ON HEALTH WORKFORCE PLANNING

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Jan De Belie (Vice-Chair)
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I personally welcome the initiative of the European Health Parliament and all the work and reflection produced by its young participants. In particular, the work and recommendations of the Committee on Health Workforce Planning are very relevant and to the point. They should definitely be seriously taken into consideration by policymakers, both at the European and national level, as their implementation would be of major help for improved policymaking.

Akiko Maeda

Senior Health Economist, OECD

Having carefully read and reviewed the proposal of the Committee on Health Workforce Planning, I am pleased with the quality of their analysis and recommendations. In particular, I appreciate the attention you have paid to patient involvement as well as ensuring the skills and well-being of the health workforce in the final text. The issues of improving the availability of policy-relevant data on health workforce, and the criticality of combining technical/digital skills with interpersonal skills, are among the key challenges facing the health systems across the EU. I, therefore, approve your legislative proposal and call the Commission and other legislative bodies on the National and EU levels to consider these recommendations and take necessary actions.

Executive summary

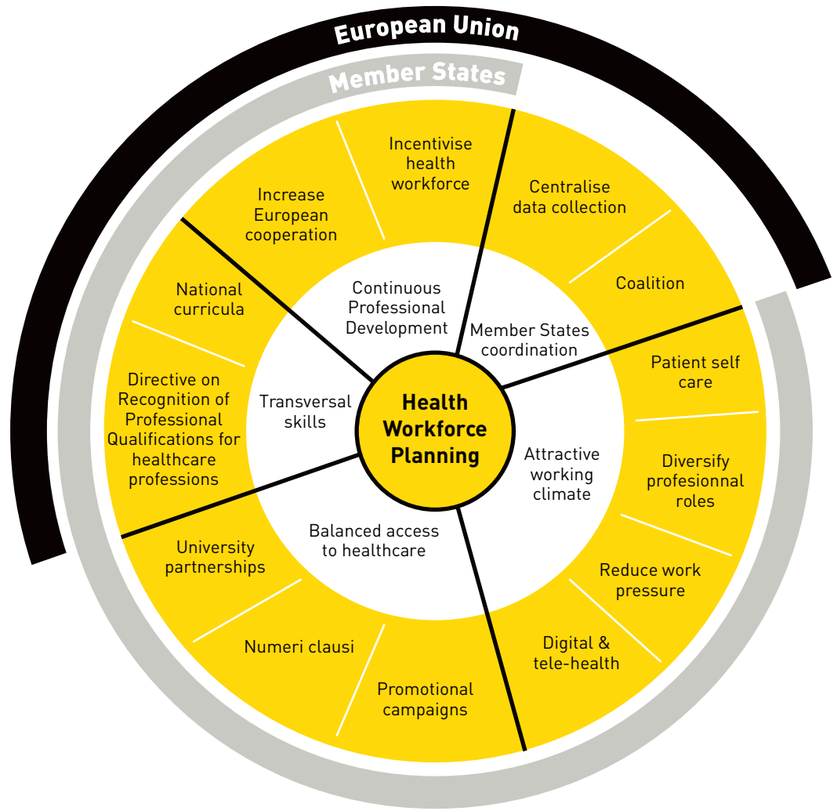
1. **Create higher coordination between Member States on forecasted EU health workforce cross-border mobility flows through:**
   - Making data collection & monitoring of health workforce mobility indicators centrally available by setting up an EU health workforce monitoring capacity.
   - Creating a European Coalition on health workforce consisting of national competent authorities and stakeholders treating and acting upon the collected data.

2. **Create an attractive working climate for the health workforce in every EU Member State through developing national policies that aim to:**
   - Promote self-care and health literacy of the population.
   - Redesign and diversify professional roles.
   - Introduce measures to reduce work pressure and improve working conditions for health professionals
   - Fund and promote infrastructures and educational programmes for digital/telehealth.

3. **Balance access to healthcare professionals within EU Member States through:**
   - Stimulating and incentivising partnerships between universities in over-and undersupplied areas as a precursor to higher retention in medically undersupplied areas.
   - Using real-world centralised EU data and forecasting indicators to set numeri clausi.
   - Organising promotional campaigns to promote undersupplied health professions in medically undersupplied areas.

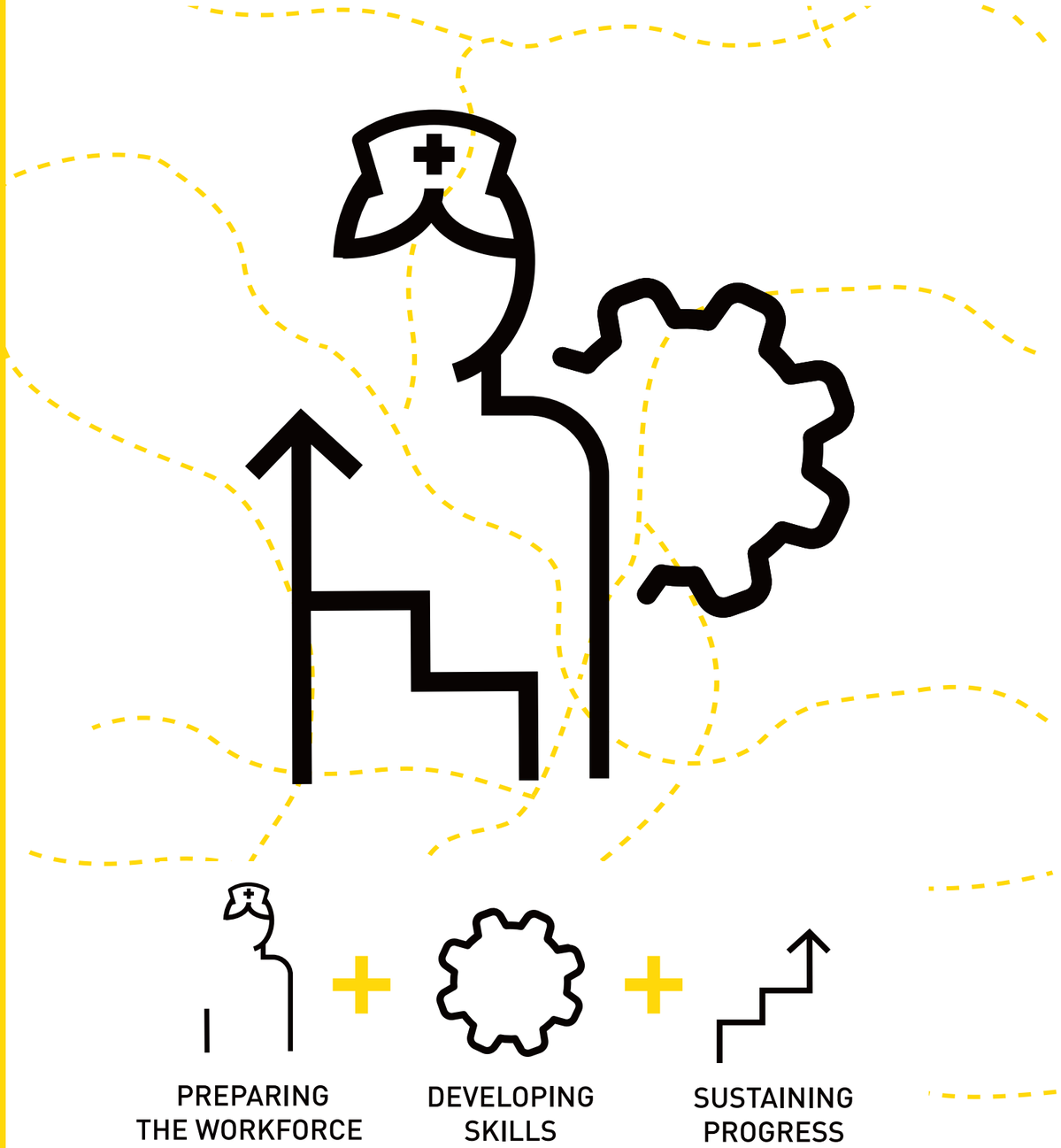
4. **Integrate transversal skills in EU undergraduate training programmes of healthcare professionals by:**
   - Including them in the EC Directive on Recognition of Professional Qualifications for healthcare professions.
   - Enhancing collaboration between the EU Commission and Member States on the integration of transversal skills in national curricula.

5. **Ensure equal access to quality Continuous Professional Development (CPD) Programmes for all health professionals across the EU through:**
   - Strengthening European cooperation on CPD Programmes and education methods.
   - Incentivising participation of health professionals in CPD Programmes in the EU.



COMMITTEE ON HEALTH WORKFORCE PLANNING

Health care for the people, by the people



Introduction

More than any other field of knowledge, medicine is a science for the people, by the people. Since many countries are confronted with shortages in health workforce (HWF), policy makers have come up with alternatives to fulfil its greatest needs. Artificial intelligence, telemedicine, e-health and so forth: all of them have been proposed as the ultimate solution. Nevertheless, the "care" in healthcare is essentially of a human nature. Therefore, even with a technological revolution ahead, a sustainable future can only be guaranteed by an internationally balanced and well-trained workforce.

Health Workforce Planning is a gigantic topic. To be able to develop a set of homogenous recommendations, the EHP Health Workforce Planning Committee has focused on two major issues. Firstly, the problem of surpluses and shortages of a number of professions in certain countries. Although migration is a fundamental right to all European citizens, we believe that a systematic brain drain from one country to another is not beneficial, neither for the healthcare provider nor for the patient.

Secondly, policy makers need to ensure that healthcare providers are being trained for the reality of the next forty years. Education programmes should prepare students to develop soft skills, of which the importance cannot be overestimated. Furthermore, digital skills should be integrated into the curricula of all universities throughout Europe. This will result in better inter-professional collaboration, more usage of up-to-date guidelines and a more fundamental involvement of the patient in his/her own health record. Multidisciplinary skills need to be further examined and integrated into training programmes of healthcare professionals. Now more than ever, healthcare's potential should be fully exploited by making sure that the knowledge of different disciplines adds up.

To translate these ideas from theory into practice, the EHP Health Workforce Planning Committee has designed policy recommendations that focus on both the European and the national level. The next few pages are not a clear-cut recipe for success, but an attempt to shape a better and healthier future. So, feel free to share ideas, concerns or limitations. And through reading, may the workforce be with you...!

Recommendations

As highlighted in the Companion Report of the State of Health in the EU,[1] Europe's 18.6 million health and care workers represent 8.5% of the total workforce, and that number is expected to grow with an extra 7.8% (1.8 million new jobs) by 2025. The EU country profiles highlighted several problematic situations when it comes to growing imbalances in supply of healthcare staff in certain regions, due to either cross-country mobility flows of health professionals or a national imbalance between certain geographical regions. To solve the problem, an innovative approach is required. The time to act is now.

The 2016 OECD report[2] shows that there is a greater level of skills mismatch amongst health professionals compared to other technical and professional occupations. It echoes earlier findings[3] from the EU Commission demonstrating that health professionals are in the EU's top five bottleneck professions. In the coming years, countries will need resilient and flexible health workers who are not only armed with technical and clinical skills, but with skills that will enable them to monitor and assess situations, take decisions and a leadership role, communicate and coordinate their actions within a team; all this within in a growing digital environment that equally requires new digital skills.[4] Digital and interpersonal skills are grouped under the term transversal skills. These transversal skills allow the healthcare professional to manage increasingly complex tasks, such as actively engaging individuals in their own care management and health maintenance, while working in an occupational context that requires the professionals' on-going adaptation to advance in technology and changes in professional standards.[4] Fresh approaches towards both undergraduate and CPD training programmes of health professionals are therefore needed in order to achieve high levels of patient safety and efficiency of care across the EU.

RECOMMENDATION #1

Create higher coordination between Member States on forecasted EU health workforce cross-border mobility flows

On a European level, higher coordination between the Member States is desired to ensure that cross - border mobility flows are not causing higher imbalances in access to healthcare services in the undersupplied European areas by ensuring balanced geographical distribution of HWF. As mentioned in the Companion Report of the State of Health in the EU, many Member States lack the institutional capacity to generate and process the data necessary for planning their health labour market needs and mitigating the gaps between supply and demand.[1] In order for Member States to better collaborate on these flows, available monitoring systems and data collection should be centralized and a concrete framework should be established to allow a greater and efficient collaboration among Member States. Data collection to monitor flows of healthcare professionals at EU level is urgently needed. Since 2015, a joint questionnaire for collecting healthcare statistics developed by EUROSTAT, the OECD and the WHO Regional Office includes "health workforce migration" data.[5] The purpose of the joint questionnaire is to collect internationally comparable data on an annual basis to monitor key aspects and trends in HWF, while reducing data collection burden on national authorities and improving the consistency of data in international databases. The HWF data collected through this joint questionnaire represents one of the most comprehensive dataset on HWF for the EU countries, however, the data collected remain incomplete or, in many countries, not consistent.[6,7] Therefore, to achieve higher coordination between Member States on forecasted EU HWF cross-border mobility flows, we recommend:

- The European Commission to encourage the information exchange among Member States on issues related to HWF in the context of migration and to centralise, standardise and complete existing data collection mechanisms on healthcare workforce. A list of common HWF planning indicators and definitions must be drawn up aligned with international guidelines on HWF recruitment.[8] All HWF planning information should be centrally available via an EU-wide portal.

- Initiate a European Coalition on Health Workforce consisting of national competent authorities and all relevant stakeholders treating and acting upon the collected data. The solutions to the challenges of HWF migration in the EU cannot be implemented in isolation by any single Member State or by any single group of stakeholders, as their nature requires strong cross-European and national partnerships, adequate policies, appropriate funding and most importantly, strong and sustained commitment to reverse trends. We envision this Coalition to bring together national ministries, healthcare professional associations and patient organisations to periodically revise the results of centrally available data on HWF indicators and to discuss potential cross-border policy solutions, under the strategic leadership of a governing board consisting of representatives of all stakeholder groups. Further, the Committee calls upon the European Commission to initiate and coordinate the activities of this European Coalition and its discussions at EU level, aiming at connecting and improving the dialogue among all relevant stakeholders.[9]

RECOMMENDATION #2

Create an attractive working climate for the health workforce in every EU Member State

Having enough health professionals available with the right skills in the right places across all Member States is essential to provide access to high quality healthcare for all EU citizens. Currently, several areas within the EU are facing shortages of HWF due to unattractive jobs, lack of career advancement, lack of CPD opportunities or lack of support and poor management.[10] Member States should focus on improving working conditions as a means to attract and retain HWF and, thus, ensure self-sustainability of their health systems. This can be achieved through several measures:

• Reduce work pressure by promoting self-care and health literacy of the population, acknowledging the contribution that can be made by informal carers and patients as "co-producers" of care,[1] as well as investing in primary care within community-based services as a cost-effective solution to support complex individual needs of disadvantaged groups (people with a physical or mental disability, older people, homeless people). Hereby, ensuring patient advocacy is important in order to respect and preserve the needs and the rights of the patients, as endorsed by the EHP Committee on Outcome-Based Health Care.

• Redesign and diversify professional roles by increasing the pharmacists' role for minor illnesses and including social workers in the primary care system. Examples are found in Ireland where, in 2011, pharmacists were licensed to deliver flu vaccines to increase uptake, and in the Netherlands where task shifting generated nurse specialists who can prescribe medication.[1]

• Fund and promote infrastructures and educational programmes for digital/telehealth through raising awareness about positive experience of patients' and health professionals' using digital health tools.

• Implementing flexible working hour schemes and promoting group practices and multidisciplinary centres.

RECOMMENDATION #3

Balance access to healthcare professionals within EU Member States

In addition to cross-country imbalances in HWF, there is also an imbalance of healthcare professionals within countries. The State of Health in the EU Country Profiles highlighted many examples such as France[11], Germany[12], Czech Republic[13] and Slovakia[14] where, in rural areas, access to healthcare professional services is much lower than in urban areas. Although these geographical shortages mainly exist in rural areas, they can also occur in urban areas. For example, London is suffering from a major shortage of youth psychiatrists, which means that kids often have to wait more than 100 days to receive a proper treatment.[15] We therefore call upon Member States to:

• Stimulate and incentivise partnerships between universities in over- and undersupplied areas as a precursor to higher retention in medically undersupplied areas.

• Use real-world centralised EU data and forecasting indicators to set numeri clausi.

• Organise promotional campaigns to promote health professions in medically undersupplied areas.

RECOMMENDATION #4

Integrate transversal skills in EU undergraduate training programmes of healthcare professionals

Reforms in initial education and training programmes are vital to foster new and appropriate skill sets. Both a bottom-up and top-down approach is needed to direct undergraduate training programmes for healthcare professionals in the EU into the right and same direction. We therefore call on the European Commission and Member States to:

• Integrate transversal skills in the EC Directive on Recognition of Professional Qualifications.[16] The European Commission Directive 2005/36 on the Recognition of Professional Qualification (amended by Directive 2013/55/EU)[17] defines for each of the regulated health professions the list of knowledge and skills for undergraduate trainings in the EU. The integration of digital skills in healthcare curricula through the EC Directive 2005/36 has already been one of the key recommendations made by the 2014 eHealth Stakeholder Group, a European Commission advisory body, in its report on eSkills workforce.[18] The promotion of digital skills is also endorsed by the EHP Committee on Robotics, AI & Precision Medicine.

• Enhance collaboration between the EU Commission and Member States on the integration of transversal skills in national curricula. As highlighted in the European Commission communication on the New Skills Agenda for Europe,[19] too little emphasis is placed in curricula on transversal skills in many Member States. To integrate transversal skills in new training programs on undergraduate level, the Commission should closely work with national competent authorities. This will result in a better quality of education for young professionals and better work possibilities after graduation.

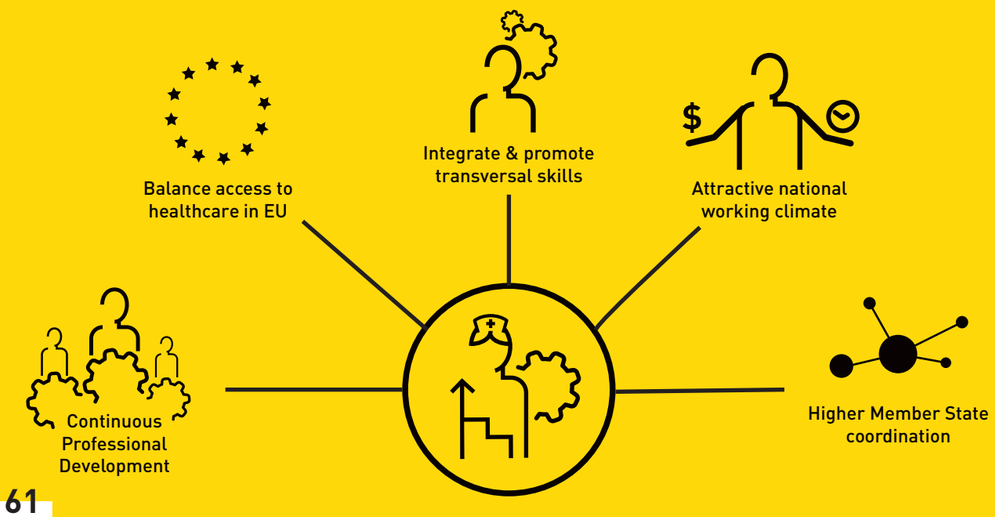
RECOMMENDATION #5

Ensure equal access to quality CPD Programmes for all health professionals across the EU

Amongst its many functions, CPD aims to sustain competence and introduce new skills as required for contemporary practice needs.[16] Since HWF will have to meet growing and changing care needs over the next two decades, it is critical for Member States, employers and other stakeholders to invest in CPD, with the aim of updating the skills and competences of the existing workforce, so as to keep providing high quality healthcare and ensuring patient safety. It is also known that certain groups of health workers (e.g. workers aged 45+, part-time workers, bedside or front-line workers, workers in night shifts and less qualified workers) are traditionally undersupplied in CPD.[17] CPD of these undersupplied workers is fundamental for their indispensable role in service delivery. Additionally, it provides a more than average return on investment.[17] The European Commission funded study concerning 'the review and mapping of CPD and lifelong learning for health professionals in the EU',[20] highlighted that a European cooperation to exchange experience and good practices is largely welcomed as providing an added value to strengthening national CPD systems. Therefore, we call on both the European Commission and the Member States to:

- Strengthen European cooperation on CPD Programmes and education methods. This exchange should also include good practices in the area of teaching methods, such as eLearning and patient role play models. The practice of inter-professional education has already been identified by WHO as an effective precursor to better inter-professional collaboration. Therefore, it equally requires attention in CPD training programmes. At the same time, a common approach towards assessing skills by all health professionals needs to be developed.[21]

- Incentivise and promote participation of health professionals in CPD Programmes in the EU. These incentives can include career succession programmes. These have been shown to be a key success factor for retaining and motivating healthcare staff. However, in most Member States, with some notable exceptions, there are no coherent HWF policies that would help to map out career pathways.[22] At the same time, the biggest barriers towards CPD are time, human resources and costs.[20] These barriers could be partially addressed by investing more in interactive eLearning modules within CPD programmes. Lastly, campaigns promoting the importance of CPD for better patient outcomes should be set up at national level to increase the participation rate in Member States of health professionals in CPD programmes.



Conclusions

OUR MESSAGE TO EUROPEAN POLITICAL LEADERS

Our Committee has aimed for five core objectives to be implemented at European and national level. We are convinced that the overall well-being of health professionals would be considerably improved and that their routine work wold be simplified by 1) creating an attractive working climate, 2) centralising data collection and monitoring, 3) balancing under- and oversupplied areas in terms of healthcare workforce, and 4) ensuring access to quality Continuous Professional Development Programmes.

To make HWF benefit from digitalisation, it is necessary to include digital skills along with soft and multidisciplinary skills in undergraduate training programmes. Moreover, creating positive perception towards these transversal skills will influence considerably the efficiency of use of digitalisation of health by both patients and health professionals. Finally, we see that the EU can play an important role by taking the initiative in supporting Member States in developing national and regional HWF planning and uniting all relevant stakeholders and the existing research. Cooperation, collaboration and investment in health workforce planning are necessary to ensure a healthy future for all EU citizens.

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COMMITTEE ON A EUROPEAN VACCINE INITIATIVE

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Director General for Health and Food Safety (DG SANTE)
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Vaccination is the most powerful preventive public health intervention to protect populations against a large number of communicable diseases. Yet, across Europe, coverage rates are too low and decreasing, and both the supply and access to vaccines remain a major policy challenge.

Taking time out of their busy lives, the bright young health care professionals of the European Health Parliament's Vaccination Committee have invested energy and passion into this issue. Anybody who cares not just about health, but about knowledge and the advancement of science should be very grateful to them.

This is a new, clear, compelling voice in the EU policy landscape – that of young Europeans working on health care. The set of recommendations they present here shows that future generations want better healthcare for Europe's citizens, and that they are willing to fight for it. So, it has been an absolute privilege for my colleagues and for me, personally, to support and encourage the Vaccines Committee through this process. Their work on three key challenges - vaccines hesitancy, immunisation information systems and vaccine supply and demand - will feed into our own thinking at the European Commission, as we drive forward on the topic of vaccination in accordance with President Juncker's last State of the Union speech.

And I hope the mission of the Vaccines Committee is only beginning: now that they have a clear idea of what they are calling for, the challenge for these young professionals is to help find ways to turn their recommendations into concrete action. I hope they will continue to bring new ideas and draw attention to the issue of vaccination. I hope they will continue to advocate for better coverage and education. And I hope that together we will be able to create a coalition of the willing for a healthier Europe.

Executive summary

Vaccination programmes are a European success story, but they have recently become victims of their own success. Many well-known vaccine-preventable diseases (VDPs) have made a comeback. Measles was on-track to be eradicated by 2020, but Europe observed a 4-fold increase in measles cases in 2017 compared to 2016.[1] This backsliding has many causes, but it is an unacceptable state of affairs. We, the EHP Vaccine Committee, urge the European Institutions to:

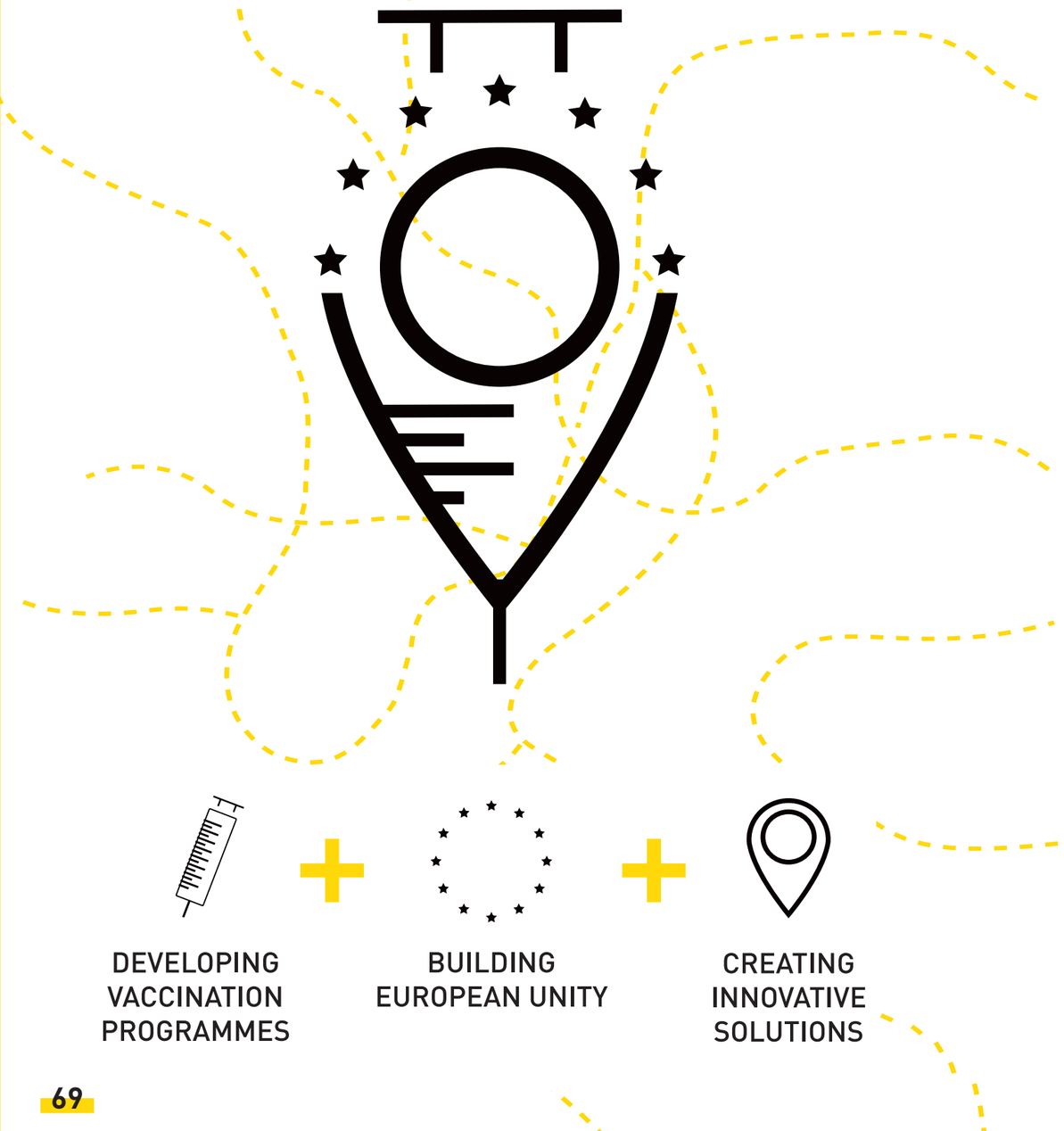
1. Empower Health Care Professionals (HCPs) to act on vaccines, use pharmacies as additional settings to provide vaccines and curate trustworthy digital information online;
2. Establish an electronic vaccination passport to ensure people know and act in their best interests on vaccinations;
3. Increase dialogue between manufacturers and national health authorities to improve the vaccine forecasting.

Thank you

The EHP Vaccines Committee would like to thank the European Institutions and agencies, international organizations, and all the stakeholders that have inspired this set of recommendations through extensive conversations and guidance, such as:

KNOWLEDGE IS THE BEST VACCINE

Promoting and Improving Vaccination Rates Across the EU



DEVELOPING VACCINATION PROGRAMMES

BUILDING EUROPEAN UNITY

CREATING INNOVATIVE SOLUTIONS

Introduction

For the last 6 months we have looked at the topic of vaccines, discussing widely with key actors and experts. There are many issues around this complex topic. We decided to tackle 3 critical areas, ones that it would be appropriate for European Institutions to lead and implement.

As the voice of young professionals in healthcare across Europe, the recommendations presented here would see a meaningful and positive benefit to health across the EU. They would save lives, ease suffering and create a better health future. It is the responsibility of every European citizen to take action in this area. The backsliding we saw in 2017 needs to be reversed. History will not look kindly on those who threaten the future that fully realised vaccination programmes hold.

Vaccine Hesitancy

PROBLEM

Vaccine rates across Europe are decreasing. Vaccine hesitancy is a key driver of this.[2, 3] Should this trend continue, we will see: increased public health risks, at-risk population groups put in danger, additional costs for healthcare systems, and avoidable deaths.

The WHO SAGE Working Group has identified a model of determinants of vaccine hesitancy based on "3 Cs", which stand for confidence, complacency and convenience.[4]

RECOMMENDATIONS

These "3 Cs" can be meaningfully mitigated by 3 concrete European actions:

1. Encourage HCPs to act more on vaccines;
2. Promote in pharmacy-delivered vaccination;
3. Strategically curate the digital world.

The "3 Cs" model is summarized below.

THE "3 CS" MODEL OF VACCINE HESITANCY[4]

RECOMMENDATION #1

All HCPs must become ambassadors for vaccination

Knowledge is the best vaccine. Doctors, nurses, pharmacists and midwives are largely trusted by society. They are, and must be, at the centre of vaccination delivery and advocacy. They have the power, awareness and responsibility of bringing vaccines and vaccine information from science to citizens. To do so, more focus must be placed on the vaccines topic as well as communication during their university education and professional training. Part of European Institutions' and Member States' work in the coming years could focus on ensuring that coordinated and complete modules are included in the HCPs curricula. HCPs must lead from the front. It is their responsibility to ensure they are vaccinated, to protect themselves and their at-risk patients. HCPs must encourage people to take the necessary vaccinations for themselves and heir families. They must be the highest vaccinated sub-population, and any measure to ensure this would be deemed acceptable by our committee.

RECOMMENDATION #2

Increase vaccination opportunities by empowering pharmacists and pharmacies

To address the problem of convenience, new delivery settings must be adopted to ease HCPs job and get vaccination and information closer to the population. With this regard, we believe that pharmacies and pharmacists could and should play a bigger role. Pharmacies are present in urban and remote areas, hold convenient opening hours and facilitate quick walk-in consultations. Pharmacy-delivered vaccination, administered by pharmacists or other HCPs, has already been implemented in ten Member States,[5,6,7,8] plus Norway and Switzerland. Outcomes have been positive in terms of coverage rates, clinical governance and citizens satisfaction.[9] We call on the European Institutions and the Member States to adopt a step-by-step plan to support and improve pharmacy-delivered vaccination in Europe. Appropriate training and tools to ensure the safety, capability and efficacy of the service must be provided, and dedicated policies following national pricing and reimbursement schemes should be agreed. The role of pharmacists in infection prevention and in the fight against antimicrobial resistance was also tackled by the EHP Committee on Antimicrobial Resistance.

RECOMMENDATION #3

A European task force to curate trustworthy content online

Vaccine hesitancy is driven in part because understanding science is difficult. The people driving questionable content related to vaccines have legitimate fears, but are finding the wrong outlet and answers. Both problems can be solved by creating a European digital trust mark.

Evidence shows that sensational stories outperform science-based content. This is a general threat to Member States. For vaccines, it is a matter of life and death. It is imperative that access to reliable, science-based information is facilitated for people to take informed decisions for vaccination. To address this, several initiatives have been launched, including the WHO Vaccine Safety Net,[10] a global network and trust mark for vaccine safety information websites. Indications show that trust marks work, but their potential is untapped due to a lack of funding and coordination across Member States.

We call for coordinated action through the creation of a co-funded task force formed by EU Institutions, WHO, ECDC, Member States, social media and internet companies. This task force should reinforce online data analysis and social media monitoring to promote valid sources of information and identify misleading digital content. A collaborative structure would strengthen already active initiatives. This would empower citizens, patient associations and consumer associations, who would better understand and promote the societal benefits of herd immunisation. Ultimately, we want to see the good work of the Vaccine Safety Net universally adopted as a European Union supported trust mark.

Immunisation information systems

PROBLEM

Infectious diseases, like European citizens, cross borders. A lack of information about vaccination history and requirements, as well as fragmented vaccine schedules, create numerous problems. Lack of information risks double vaccination, increases costs for healthcare systems, and vaccine delays. Doctors have incomplete records for their patients, and people who need vaccination may not know it. Using modern digital capacity, a fundamental rethink is needed and achievable at European level.

RECOMMENDATION #1

A digital revolution - European vaccine e-Passport

We recommend the implementation of a European Vaccines e-Passport: a digital solution to manage vaccine data across Europe.

For European citizens, a vaccine e-Passport will increase their vaccine knowledge, provide a secure history, and highlight gaps in their immunization schedule. This would create meaningful cost savings for healthcare systems. Algorithms would anonymously provide inputs to health authorities to identify coverage rates, improving vaccine planning and forecasting. There would also be an opportunity to develop this platform to enable Member States to identify immunization gaps in vulnerable populations, such as refugees and migrants.

There are two ways this solution could be realised: a centralised system could be scaled, or a decentralised system could be fostered.

An example of a centralised system is MesVaccins.net.[11] With about 500,000 electronic records, the French tool provides individuals living in France with the opportunity to log the vaccination they received, get booster reminders and receive personalised advice on what vaccination they may need. Vaccines can be administered by several HCPs such as doctors, nurses, pharmacists, and in different places. Hence, the e-Passport would help to facilitate communication between the various HCPs taking care of the same patient and national authorities. The programme is recognised by the WHO and the ECDC. Gaining buy-in across countries to deploy the same system would help create better vaccine coverage.

Another way this solution could be realised would be through a decentralised system on the blockchain. This would see a horizontal project set out at European level to create a unified citizen file for EU residents. Creating such a system would be a major project for Europe, but within the realm of technological possibility. While performing transactions that require high levels of trust, it is possible to use modern methods for people to retain control of their data, while remaining anonymous and secure.

Establishing predictable vaccine supply and demand

PROBLEM

Europe is central to global vaccine research and production. More than 80% of vaccines are produced in the European Union and exported worldwide.[12] In line with the European Commission's Joint Action on Vaccination 2018-2020[13] and the Employment, Social Policy, Health and Consumer affairs Council (EPSCO) Conclusions of December 2014, the EHP Vaccines Committee supports the need to improve the supply and demand of vaccines. We believe that the implementation of the below outlined measure will strive towards achieving this goal.

RECOMMENDATION #1

Telling the future...improved vaccine forecasting

In 2015, 77% of the European Region countries reported vaccine shortages.[14] A major cause of this is inaccurate prediction of supply and demand. Understanding complex and lengthy manufacturing timelines or control and release processes for vaccine manufacture means a clear and harmonised ordering process is paramount.

It can take up to 24 months to manufacture a vaccine and 5 to 10 years to build and license a new facility.[15] Hence, vaccine shortages could be in part mitigated by an improvement in vaccine forecasting amongst Member States. Equally, it would allow national governments to budget and allocate resources accordingly.

Identification of guidelines on vaccine forecasting would support national competent health authorities on how to design and manage good forecasting processes. It would harmonise disparities between Member States on how demand is calculated. To do this, there is need for an early and continuous dialogue between manufacturers and health authorities.

RECOMMENDATION #2

Investing in the future - keeping the vaccines industry in Europe

Vaccine development and production has a deep European history. We would like Europe to maintain its global leadership in vaccine production. To do this, we need to provide the right incentives to the industry, to keep Europe globally competitive, and to ensure continued investment in R&D and innovation.

Conclusions

OUR MESSAGE TO EUROPEAN POLITICAL LEADERS

Vaccines play a vital role in society. They keep us healthy. They keep us protected. They keep us one step ahead of rapidly evolving diseases. They are the pathway toward a future without disease. Why is it then that we are still in disagreement over issues as perplexing as using them? Encouraging them? Making them available on a wider scale? The EHP Vaccines Committee strongly urges the adoption of our policy recommendations. It is time for all of us to take the initiative and lead with a strong voice for pan-European vaccination plans and the promotion of science-based, life-saving facts.

Let us tackle hesitancy by creating empowered HCPs, new delivery settings and trustworthy digital information in a strategic and effective way; let us work to create a vaccination e-Passport to ensure people know and act in their best interests on vaccinations; and let us increase the dialogue between manufacturers and national health authorities to improve the vaccine forecasting.

It's time Europe takes the lead. Let us be the voice of reason. Let the news not cover measles outbreaks in Italy or Spain,[16] but research breakthroughs, innovative treatments and leading healthcare professionals. We want to be known as the generation that perfected healthcare and early intervention, not the ones that regressed. Two centuries after the first vaccine was born, vaccines need to be the "*Trending Topic*" once again - for the right reasons this time.

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DISCLAIMER:

The views and opinion expressed in this article reflect the perspective of the European Health Parliament Committees collectively. It does not reflect the views of the individual EHP members, nor the views of their respective employers or the partner organizations supporting the project.

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