Health systems after COVID-19 - Building resilience through a value-based approach

A Policy Paper from the European Alliance for Value in Health

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European Alliance for Value in Health

Executive summary

Health system resilience has been rising in the political agenda throughout the last decade, becoming a key political priority. Even before COVID-19, the European Commission had defined it as a top policy item in 2014, focusing on factors that can reinforce it. The onset of COVID-19 presents rare momentum to realize ambitious reforms and establish a new paradigm for defining and building health system resilience, that will also answer the long-term health challenges Europe faces. The pandemic highlighted certain elements and dimensions of resilience, prompting the creation of scorecards and dashboards to navigate its multiple aspects, including contributions from the European Commission 2020 Strategic Foresight Report and the EU expert group on Health Systems Performance Assessment.

The European Alliance for Value in Health advocates for an even broader assessment of health system resilience, that is **value-driven** and **people-centred**, as this will strengthen health system resilience in emergencies and times of normalcy. The health systems of the future need to adopt an **outcomes-focused** and **holistic** approach, in order to reorganize the allocation of resources towards high-value care and prevention. This process builds off **continuous learning processes**, utilizing **high quality, comparable data and insights.** Special emphasis is placed on reaching high levels of **health literacy** and increasing the use of **patient- reported outcome measures and experience measures (PROMs and PREMs). Innovations in care delivery** and **integrated health and social care networks** can be enabled by **financing models and payments that reward value and outcomes.** Importantly, investment in healthcare is recognized as an investment in societal well-being.

The Policy Paper connects the proposed value-based approach with health system resilience, demonstrating the synergy through a series of case studies. A set of specific recommendations is proposed, in order to draw a roadmap of actions, to be adopted by policy makers and stakeholders on a national, regional and EU level, including:

- Incentivise health promotion and prevention;
- Reform the framework for health funding both at the macro and meso level to facilitate a more holistic approach to health expenditure and financing;
- Develop reimbursement systems, including value-based contract and risk-sharing models, that reward and support the adoption of high value innovation that satisfies unmet health needs;
- Adopt national strategies for the collection and use of patient-reported outcome measures and experience measures (PROMs and PREMs);
- Address legislative, organisational, knowledge and financial barriers to implementing digital health, telemedicine and homecare at full scale;
- Empower and resource patient organisations to guide transformation to patient-centred care and support patients during times of crisis.

Critically, stakeholders should build coalitions at national and/or regional level to support the transformation to value-based and person-centred healthcare. These new partnerships will also strengthen the resilience of health systems during a crisis.

Section 1: Health System Resilience – is the current definition sufficient for rethinking health systems after COVID?

While the 2011 Council conclusions on modern, responsive and sustainable health systems did not yet mention the notion of "health system resilience", the concept has become prominent over the past decade. The current COVID-pandemic has put the concept of health system resilience on the foreground as a "new compass" for EU policies.[1] Nevertheless, the understanding of its precise meaning can vary between different academics and policymakers.

In its 2014 Communication on effective, accessible and resilient health systems, the European Commission listed resilience as one of its key priorities.[2] The concept was defined as the ability of health systems to "***adapt effectively to changing environments, tackling significant challenges with limited resources***". The Commission furthermore listed six factors which account for resilience, namely stable funding mechanisms, sound risk adjustment methods, good governance, information flows in the system, adequate costing of health services, and an adequate and skilled health workforce. Finally, three EU-level actions were listed which could help improve the resilience of health systems, namely supporting Member State cooperation on HTA, creating an integrated EU health information system, and supporting the development of interoperable eHealth solutions.

The spread of the COVID-pandemic to Europe forced the European institutions to start reflecting on the measurement and monitoring of different elements of resilience. In the 2020 *Strategic Foresight Report*, resilience is defined as "***the ability not only to withstand and cope with challenges but also to transform in a sustainable, fair, and democratic manner***".[3] The report does not limit itself to health systems, but also includes social and economic, geopolitical, green and digital dimensions. The Strategic Foresight Commission Communication proposes to move towards "resilience dashboards", which, once fully developed in cooperation with the Member States and other key stakeholders, should be used for assessing the vulnerabilities and capacities of the EU and its Member States in each of the four dimensions. One of the prototype dashboards lists public health expenditure, number of resources like doctors, nurses and hospital beds, and age of the population, as some of the variables which affect health system resilience (figure 1).

[1] European Commission, *2020 Strategic Foresight Report*, COM(2020) 493 final, p. 2.
[2] European Commission, *Communication on effective, accessible and resilient health systems*, COM(2014) 215 final.
[3] COM(2020) 493 final, p. 2.

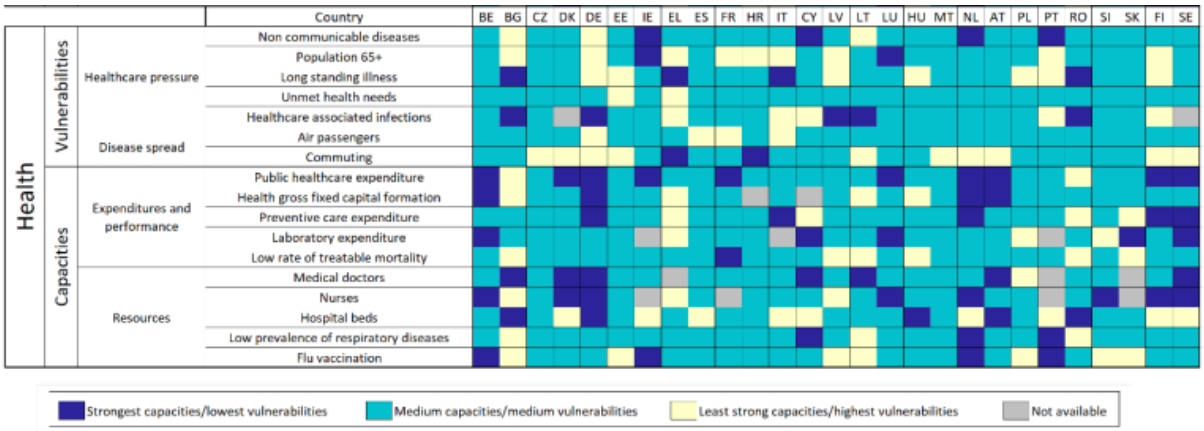

Figure 1: European Commission (2020), 2020 Strategic Foresight Report

A more extensive definition of resilience has been developed by the *EU Expert Group on Health System Performance Assessment* (HSPA)[4] in its December 2020 report on the resilience of health systems in Europe.[5] The Expert Group defines resilience as "***The capacity of a health system to (a) proactively foresee, (b) absorb, and (c) adapt to shocks and structural changes in a way that allows it to (i) sustain required operations, (ii) resume optimal performance as quickly as possible, (iii) transform its structure and functions to strengthen the system, and (possibly) (iv) reduce its vulnerability to similar shocks and structural changes in the future***". The definition encompasses four dimensions: absorptive, adaptive, transformative, and preventive, and is supposed to be open to adaptation where necessary.

Moreover, the Expert Group on HSPA provides a framework to analyse health systems resilience, based on a series of metrics.[6] As an example, 50 metrics are cited, covering a total of 13 assessment areas (annex 1). They correspond to governance (e.g. coordination of activities), financing (e.g. levels of health spending), resource generation (e.g. availability of medical equipment and pharmaceuticals), and service delivery (e.g. training for health workers). The Expert Group underlines that these metrics should be adapted based on the purpose of the assessment, and depending on the country being studied.

Finally, the *Expert Panel on effective ways of investing in health*[7] also tackles the concept of resilience in its Opinion on the organisation of resilient health and social care following the COVID-19 pandemic. The Expert Panel thereby adopts the same definition as the Expert Group on HSPA.[8] The Opinion proposes resilience tests for health systems

[4] The expert group on HSPA is composed of Member States representatives and the Commission, with WHO and OECD having observer roles.

[5] Expert Group on Health System Performance Assessment (HSPA), *Assessing the resilience of health systems in Europe*, 2020, p.6.

[6] *Ibid*., p. 53.

[7] The expert panel is composed of independent experts that are nominated for a 4 year term and funded by the Commission.

[8] Expert Panel on effective ways of investing in health (EXPH), *The organisation of resilient health and social care following the pandemic*, 2020, p. 20.

that anticipate different scenarios of shocks or structural changes.[9] These analyse the status of health system building blocks, like health workforce, community carers, medicines, infrastructure, information systems, governance, financing, health services, and health promotion. For each building block, a colour code is used (figure 2). More detailed sub-categories can also be assessed (annex 2). The Expert Panel makes several recommendations to improve health system resilience, including training the health workforce, monitoring disinformation, and increase the linkage between databases across systems and sectors.

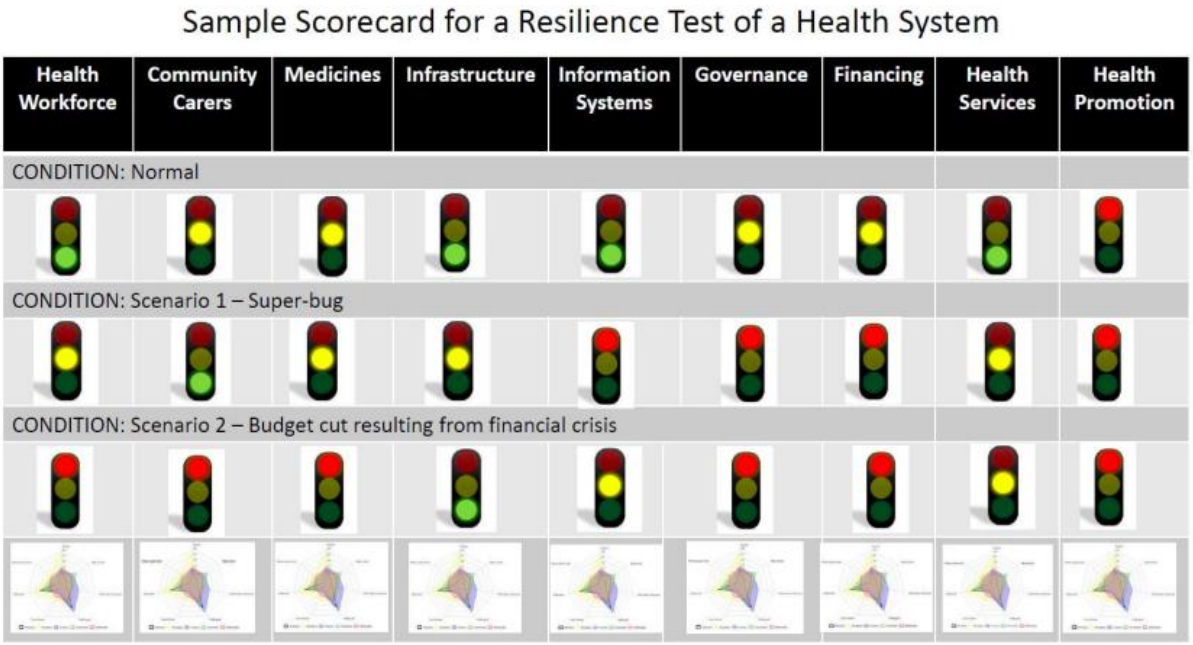

Figure 2: Expert Panel on effective ways of investing in health (2020), The organisation of resilient health and social care following the pandemic

Do the assessment areas covered in the proposed frameworks cover all relevant aspects of health system resilience?

Assessing health system performance from any dimension, such as resilience, always has challenges. Available indicators might not be granular enough to provide a good basis for decision-making, and there is always a risk of looking at those things that are easily measurable at the expense of other dimensions that are more challenging to capture. Looking at the dimensions proposed in the 2020 Strategic Foresight Report, these problems become very clear. Having a single score for "unmet health needs" or "non communicable diseases" will hardly provide meaningful information, as it doesn't communicate e.g. what types of unmet health needs are prevalent or if different chronic diseases are being well managed by the health systems or not. Aggregate indicators for healthcare expenditure or preventative expenditure also don't communicate the result of these investments, as there could be waste or inefficiencies in the system. Hospital beds

[9] *Ibid.*, p. 73.

is another indicator which is in theory easy to measure, but without detailed information about the type of hospital bed (e.g. if medical equipment and staff for intensive care are included), the metric is of questionable value.

The assessment areas proposed by the HSPA Expert Group are more comprehensive and qualitative, including aspects such as health system leadership and governance, information systems, flexibility to reallocate funding and increase capacity, and universal health coverage. However, none of the assessment frameworks proposed includes health status of the population or at-risk patient groups, including the outcomes of chronic disease management. This would be important, as many chronic disease patients have been extra vulnerable to COVID-19, and poor chronic disease management therefore would be a threat to resilience. Instead, all metrics proposed to measure health service capacity are input or process measures such as medicine stockpiles or waiting times.

The European Alliance for Value in Health would welcome a broader conceptual framework for health system resilience, which includes dimensions and assessment areas that are outcomes-focused (in that they assess the actual health status of the population and outcomes of healthcare on specific patient populations) and dynamic (in that it looks at long-term effects including through the introduction of innovative technologies and care processes).

Section 2: How can health system resilience be strengthened through a value-based and person-centred approach?

The European Alliance for Value in Health works for future health systems that are value-based, person-centred and sustainable. These are health systems where:

1. Outcomes that matter to people and patients, as well as benefits valued by health systems and societies, are at the centre of decision-making
2. Interventions and services addressing prevention, social care and healthcare are organised in an integrated way around people and patients
3. Resources are allocated towards high value care and prevention, with outcomes and costs of care measured holistically
4. Continuous learning, education and healthcare improvement is based on evidence, and supported by data and insights
5. Innovative ways of care delivery are fostered
6. Financing models and payments reward value and outcomes

The Alliance would argue that reforms needed to make health systems more value-based and people-centred will not only make them better suited to deal with personal and societal needs in normal times, but also make them more resilient to future shocks, including future pandemics and the rising threat of antimicrobial resistance. Of course, this principled approach on value in healthcare systems has been longstanding, yet the COVID-19 pandemic has re-aligned the focus on approaching value with a holistic perspective. This re-alignment facilitates the evolution from value-based healthcare to value-based health systems. As highlighted by the European Observatory on Health Systems and Policies, value in healthcare is not a one-dimensional variable that is limited in certain parts of the system.[10] It is multi-dimensional, building off synergies and accounting for different actors or perspectives that are present in the system. Different pillars of value include personal, allocative, technical and, ultimately, societal value. According to the European Commission Expert Panel on Effective Ways in Investing in Health (EXPH), value-based healthcare ultimately is a path towards a more fair and equal European society. [11,12] A key take-home message from the ongoing pandemic is that health systems produce and spill over well-being to the entire society, while, predictably, their lack of resilience can have detrimental spill over effects to the economic, social and government activity. [12] The Alliance therefore wants to emphasise how a value-based approach solidifies health system sustainability in times of normalcy as well as resilience in times of emergency.

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[10] European Observatory on Health Systems and Policies, *Building on value-based health care: towards a health system perspective (2020)*

[11] Expert Panel on effective ways of investing in health (EXPH), Defining Value in "Value-based healthcare", 201. p.5

[12] Figueras, J. and M. McKee, eds. *Health systems, health, wealth and societal wellbeing. Assessing the case for investing in health systems.* 2011, Maidenhead: Open University Press.

[13] European Convention, *Charter of Fundamental Rights of the European Union*, 2000.

From European Observatory of Health Systems and Policies: *Building on value-based healthcare: towards a health system perspective*

How does a value-based approach improve health system resilience?

Fundamentally, a value-based system creates **incentives and investment** capacity for high-value interventions and innovations that **improve patient and population health outcomes** in the long term, including through primary and secondary prevention, and through dis-investment in lower value or wasteful interventions. Keeping people healthy could be the best protection against a future pandemic, as COVID-19 has inflicted the heaviest toll on people with pre-existing conditions and diseases such as hypertension, diabetes and obesity. It has also highlighted existing inequalities and inequities, as the most vulnerable groups were the ones most impacted by the pandemic. Taking an outcomes-based approach, comparing health outcomes between different communities and population segments and guiding health interventions through risk stratification could decrease health inequalities and improve the prospects of vulnerable population groups, both before and during a pandemic. Value-based healthcare is therefore closely tied to the principle of equity in health which is a key pillar for European health systems. [13]

Making use of **home telemonitoring for Chronic obstructive pulmonary disease (COPD) patients**, the COPD Patient Management European Trial (COMET) in France, Germany, Italy and Spain led to fewer acute care hospitalisation days, reduced frequency of exacerbations and mortality rates (1.9% for patients following the disease management programme versus 14.2% for the others), and improved patient symptoms. A report by the Office of Health Economics found that, in the hypothetical scenario that all COPD patients in the EU Member States plus the United Kingdom would participate in a similar disease management programme and assuming a 75% compliance rate, the combined savings for the EU would range from €690.2 million and €2.1 billion Euros due to reduced hospitalisations, and up to 17,000 premature deaths could be avoided. As this example shows, strategic investment in prevention and disease management would help improve health outcomes for chronic disease patients that are otherwise vulnerable to COVID-19, and avoid unnecessary hospitalizations which is also important in times where hospital services are overwhelmed by the pandemic.

A value-based system is driven by **high-quality, comparable data,** including on outcomes that matter to people and patients**,** that can be collected and analysed in real time. One major obstacle during COVID-19 has been the difficulty in assessing the impact of the pandemic and comparing interventions and public health measures adopted in different regions and countries due to the lack of comparable, real-time data. The data infrastructure and governance needed for value-based models, including systems for feedback to clinicians, transparent reporting of **clinical and patient-reported outcomes** and benchmarking platforms, will enable rapid evidence-based decision-making also during a crisis. This applies both at the macro level, where decision-makers can get rapid feedback on the effect of various public health measures taken during a crisis, including to ensure that measures taken does not adversely affect health outcomes, as well as at the meso level, e.g. allowing clinical care managers to assess the impact on specific patients and patient groups and take appropriate action.

The **European Health Data and Evidence Network (EHDEN)** is a project under the Innovative Medicines Initiative that maps health data in European countries to the OMOP Common Data Model, in order to create a federated data network that enables rapid analysis of large quantities of standardized data. Already in late March of 2020, when health systems across the world were struggling with finding the right methods to treat hospitalized COVID-19 patients, EHDEN partners supported a global OHDSI study-a-thon which brought together more than 330 researchers, with thirty-seven healthcare databases from 30 different countries to design and execute studies on an international set of observational health databases to inform healthcare decision-making. During 2020, EHDEN itself continued to support mapping of COVID-19 patient data from 25 Data Partners in 16 countries to the OMOP model, including through a collaboration with the European Medicines Agency, enabling rapid research into patient characteristics and safety and efficacy profiles of the different repurposed drugs used to treat COVID-19.

More flexible and **integrated health funding** frameworks are necessary to allocate resources where they add the most long-term value for patients and societies, enabling the necessary agility to reallocate funds as needed due to external shocks. Breaking down budget silos is key in unlocking the full potential for implementing effective intervention, both at a health system level and at provider level, as well as between the health and social care system. This has recently been highlighted by the *EU Expert Panel on Effective Ways of Investing in Health*, noting that "it is difficult for procurement officials to spend more this year if the benefits show up on someone else's balance sheet now or at some point in the future", and that this is a key barrier to adopting a value-based approach to healthcare procurement. A more cohesive financing approach reinforces system resilience, through gains in efficiency that free up previously under-used resources, while simultaneously allowing for faster, more responsive realignment of financing streams during an emergency.

The **Gesundes Kinzitgal** integrated care system has enabled investments in population health and prevention through **Shared Savings Contracts** between Gesundes Kinzitgal Gmhb (the regional care management company) and the two statutory health insurers operating in the region. The "Shared Savings Contracts" model means that an economical benefit for purchasers for a geographically defined population is generated through wise investments, prevention and optimized care, based on the assumption that a more effective integrated care model and increased investments in well-designed preventive programmes will lead to a reduction in morbidity, and in particular to a reduced incidence and prevalence of chronic diseases. This, in turn, is to lead to a comparative reduction in health care cost over the long term. At the core of the Gesundes Kintiztal's interventions are several preventive and health promotion programmes, including individual treatment plans and goal-setting agreements between patient and doctor, patient self-management and shared decision making, follow-up care and case management, and system wide Electronic Health Records. Examples of results include 45% less fractures for osteoporosis patients, 1,5 years longer survival for heart failure patients and 40% less hospitalization of diabetes patients.

Integrated health and social care models, including through multidisciplinary care teams and care coordination, and enabled by comprehensive and secure **Electronic Health Records (EHRs) and digital or telemedicine services,** that facilitate improved monitoring, follow-up and treatment of patients, inside and outside of hospitals and clinics, causing less disruption and supporting high value care processes. Effective digital interventions are simple, sustainable and seamlessly integrated in the workflow of the care processes. Further training of healthcare professionals may be necessary, as the online environment presents new challenges in terms of medical communication and ethics. Importantly, digital health should be recognized as a crucial contributor to greater patient empowerment, a key feature of a person-centred system. It is a key tool for every health system during a crisis such as the COVID-19 pandemic, both for managing resources and ensuring better health outcomes and ultimately societal value.

GE Healthcare has produced **Smart Scheduling**, a Machine Learning Pipeline that creates an AI model for each hospital/medical facility individually and calculates the probability of a patient not showing up for an examination. This information can then be leveraged to guide further adaptations that facilitate and encourage meeting attendance, such as organizing transportation or setting further reminders. The model is informed by a wide range of factors, internal and external, enabling a paradigm change to scheduling workflows and increasing patient access. A data volume of 100,000 examinations is necessary to complete the model training.

A people-centred health system builds on **informed people and patients**, where trusted sources of health information are readily available as well as access to personal health data. A high level of health literacy of patients and health care professionals, and clear communication, will strengthen health systems in a crisis, facilitating adaptability and task-shifting by health professionals and supporting adherence to guidelines or medication. It also leads to more credible, evidence-based guidance to the care services patients need, based on **patient- reported outcome measures and experience**

measures (PROMs and PREMs). A health system that understands and monitors the needs, goals, value and preferences of its patients, and embraces shared decision making and co-creation of care, would be more resilient to sudden disruptions of routine care pathways. During the COVID-19 pandemic, the issue of foregone and disrupted care for non-COVID patient groups have caused a major burden on patients, and patient organisations have played an important role in supporting information to patients and self-management.

As the COVID-19 crisis has demonstrated, health system resilience is not only about efficiently managing and deploying existing resources during a time of disruption, but also about adaptation and deployment of innovative solutions in a timely manner. In the first phases of the crisis, this concerned for example the evaluation and repurposing of existing medicines for use in care of hospitalised COVID-19 patients, and later for the expedient development and approval of vaccines. This requires both a resilient and developed research eco-system, as well as effective and flexible **regulatory frameworks** that can evaluate and deploy innovative solutions in a timely manner.

AReSS, the regional agency for innovation in health of **Apulia Region**, started four years ago a strategic agenda to implement VBHC principles in regional health system through **eight value labs**: clinical networks and pathways engineering, lean healthcare, clinical costing and outcomes measurement, humanization and integrated care projects. Implementing a value-based approach proved quite useful for supporting system resilience during first lockdown and further. Talisman, a project born under a value lab named ICare Lab, that combines population health management (PHM), integrated practice units (IPUs) for specific clinical condition and a smart digital health platform provided the infrastructure to remotely monitor COVID+ patients and to restore contacts between rare disease patients and their own clinical reference centre and also for cancer patients. The same solution for remote monitoring was implemented for 16 elderly care homes, and and the digital format of PHM-IPUs-BigData will be used to implement post-COVID telerehabilitation and care rescue. Furthermore the system direction for the regional cancer network, hosted by AReSS and based on 18 cancer guidance centres and 23 high specialty pathology hospitals that share the IPU model, enabled a continuation of naive patient enrolment and surgical admissions, despite downsizing in services for other clinical conditions with up to 20%.

Both breakthrough and incremental innovation are key elements for meeting unmet health needs in normal times as well as managing disruptive events such as serious cross-border health threats.

In order to fully implement a value-based and person-centred approach, it is imperative that there is **commitment at the meso-level of health systems,** as this level plays a key role in ensuring long-lasting, impactful success of the highlighted reforms. Regional and local authorities are valuable partners that must be engaged in the policy making process.

Section 3: Recommendations to health policy makers and stakeholders

The Alliance would propose a number of recommendations to regional, national and EU-level policy makers and stakeholders to strengthen health system resilience through a value-based approach.

National and regional level	EU level
Build coalitions around a shared political commitment to health system reform, engaging all stakeholders. Frameworks for multi-stakeholder collaboration and public-private partnerships can be important vehicles for anchoring and driving reform towards value-based and person-centred models, including more long-term public-private partnerships focusing on patient outcomes.	The European Alliance for Value in Health will contribute towards building frameworks for multi-stakeholder collaboration.
Incentivise health promotion, primary and secondary prevention and rehabilitation to promote wellbeing, prevent ill-health and enable early detection and intervention, thereby making the population less vulnerable to health threats. This should include the promotion of innovative health technologies in health systems that enable more prevention-focused and patient-driven integrated healthcare models.	Share evidence-based best practices, leverage EU funding and EU Semester recommendations to support strategic healthcare investments.
Review and reform the framework for health funding both at the macro and meso level to facilitate a more holistic approach to health expenditure and financing. A more flexible budgetary framework and new types of payment models would both enable integrated care models that encompass several parts of the system and strategic investments that create better outcomes and lower costs in the long run. This would also create the necessary incentives for prevention and early detection and treatment of disease.	Ensure that the EU budgetary framework allows for long-term investments in health.

Adopt national strategies for the routine collection and use of patient-reported outcome measures and experience measures (PROMs and PREMs) across key conditions and patient groups, including for patients with multi-morbidities and those most vulnerable. The strategies should include the integration of PROMs and PREMs with data from registries and Electronic Health Records, and enable patient access to their own data. This would enable rapid feedback to decisionmakers on the effects of public health measures in a crisis situation, and also help improve the monitoring and care of patients with long-term symptoms of COVID-19, as well as the impact of foregone care of other patient groups.	Support the necessary standardisation of outcomes measurement, and the investment in data collection systems through EU4Health and the Recovery & Resilience facility.
Address legislative, organisational, knowledge, equality-related, security-related and financial barriers to implementing digital health, telemedicine and homecare at full scale.	Ensure that divergent interpretation of GDPR across countries do not create barriers to telemedicine, digital health solutions and decentralised clinical trials.
Ensure that the regulatory framework is future-proof and agile in order to accommodate new medical technologies, vaccines and medicinal products, to enable society to respond to a crisis within accelerated timelines. More use of innovative clinical trials designs, including decentralised trials and novel forms of data collection, use of Real World Data to complement data from traditional clinical trials, and a more dynamic regulatory assessment process can help assessing and bringing beneficial innovation to patients in a more timely manner.	
Reimbursement systems, including value- or outcomes-based contracts and risk-sharing models, that rewards and supports the adoption of high value innovation that satisfies unmet health needs or improves the efficiency of health systems.	Support the sharing of best practices.
Empower and resource patient organisations so that they can help guide health system transformation, enable patient-centred decision-making and support vulnerable patient communities in a crisis.	Support patient organisations through EU funds.

Invest in continuous training for healthcare professionals, support new organisational models and cultural mindset towards value-based healthcare models, and adopt strategies to address the limited workforce in public health systems including through the WHO plan to treat, train and retain with a focus on task-shifting.	Support upskilling and educational initiatives, including relating to task-shifting.

Section 4: Concluding remarks

The COVID-19 crisis offers a unique opportunity to take a critical look at all parts of our health and social care systems, not just from the perspective of how they will handle a future pandemic or another major crisis, but how they are organised to deliver on societal and health policy goals in general. In the shadow of COVID-19 the pressures on European health and social care systems continue to grow, stemming from an ageing population, growing incidence of chronic disease and multimorbidity, and major unmet needs such as mental health. There is also another slower "pandemic" spreading in the form of antimicrobial resistance, which could turn out to be just as disruptive on health services and population health if it is allowed to continue unabated.

Healthcare reform is in normal times a risky endeavour politically with few upsides. The complexity of healthcare systems is often daunting for policy makers to tackle, with many potential pitfalls, risks of disruption of services valued by citizens and possible pushback from stakeholders, and few tangible benefits to show for it during the course of a normal political mandate. However, the collective shock brought about by COVID-19 and the realisation that health systems that function poorly during normal times will break during a crisis, could rally policy makers at different levels and across party lines to undertake more far-ranging reforms.

Instead of trying to get back to the "status quo" as it existed before the pandemic, we should strive to reimagine how health systems are organised and how they operate. We in the European Alliance for Value in Health believe that the transformation towards more value-based and person-centred health systems would not only make them better equipped to answer to societal demands in normal times, but also more resilient to disruption and external pressures. At the core of this paradigm is the belief that investment in health is a key driver of societal wellbeing, innovation and sustainable growth, and that the most important enabler of this transformation is through partnership between all actors and stakeholders in the system. This requires new models for collaboration that enable transferability and scalability of innovative solutions and build on a shared understanding of how value in health is created and the roles of different actors in the system. Our aim is to inspire and enable these partnerships to grow, in order to enact meaningful change together.

Annexes

Annex 1: Assessment areas proposed by the Expert Group on HSPA

Source: Expert Group on Health System Performance Assessment (HSPA) (2020), Assessing the resilience of health systems in Europe

Strategy	Examples of assessment areas
(1) Effective and participatory leadership with strong vision and communication	• Set of contingency plans and protocols, emergency legislation • Functional management capacity for governance • Stakeholder participation and engagement • Leadership/steering and clear chain of command • Accountability of government agencies • Effective governance structures (transparency, accountability, stakeholder involvement) • Clear and feasible plan for response measures • Setting strategic direction • Established public trust in response agencies • Effective communication
(2) Coordination of activities across government and key stakeholders	• Collaboration between sectors • Agreements with relevant actors (e.g. international agencies, non-state providers, NGOs)
(3) Organizational learning culture that is responsive to crises	• Innovative organizational culture, culture of learning • Use of feedback and analysis in informing decision making • Mechanisms to assess, audit and learn from response to shock and implement change
(4) Effective information systems and flows	• Flow of information between stakeholders, data-sharing mechanisms • Flow of data, information and analysis into decision making and evaluation • Mechanisms of timely dissemination of guidelines and protocols • Communication infrastructure (hard: phone, Wi-Fi; soft: press, community, NGOs) • Existence of data collection and linkage systems

(5) Surveillance enabling timely detection of shocks and their impact	• Epidemiological surveillance and early warning systems • Existence of mechanisms to identify change in need and access to services
(6) Ensuring sufficient monetary resources in the system and flexibility to reallocate and inject extra funds	• Levels of spending on health (total, public, and as a share of government spending) • Equitable geographical distribution of health expenditure • Information on public financial management
(7) Ensuring stability of health system funding through countercyclical health financing mechanisms and reserves	• Countercyclical financing mechanisms in place to cushion financial impact of shocks • Protected funding for health care, e.g. earmarked funds for health care • Financial reserves available for deployment in health shocks • Change in health spending vs change in government deficit and GDP
(8) Purchasing flexibility and reallocation of funding to meet changing needs	• Development of alternative procurement channels • Ability to make rapid changes to purchasing mechanisms • Reallocation of funding to different providers or activities
(9) Comprehensive health coverage	• Universal/effective health coverage (including vulnerable groups) • Public knowledge of entitlements • Out-of-pocket payments as share of total health spending • Catastrophic/impoverishing health spending • Existence/broadening of exemptions from user fees
(10) Appropriate level and distribution of human and physical resources	• Capacity of diagnostics, primary and specialist care • Availability of pharmaceuticals and medical products, vaccines and equipment • Mapping of health service providers (location, type, opening hours, accessibility) • Numbers of doctors and nurses and their workload • Workforce mapping (location, availability, competencies)

(11) Ability to increase capacity to cope with a sudden surge in demand	• Ability to increase capacity of services (e.g. existence of waiting lists, occupancy rates) • Ability to increase number of health professionals and their workload, workforce reserves • Existence of an agency responsible for emergency supplies
(12) Motivated and well-supported workforce	• Health workers job satisfaction • Health worker absenteeism • Staff support mechanisms, helplines • Ensuring safety of health workers
(13) Alternative and flexible approaches to deliver care	• Crisis preparedness training, cross-training for additional skills • Training of health workers to treat specific or at-risk population groups • Ensuring provision of services for at-risk population groups • Maintenance of quality and safety standards across all services

Annex 2: Metrics proposed by the Expert Panel (EXPH)

Source: Expert Panel on effective ways of investing in health (2020), The organisation of resilient health and social care following the pandemic

Inputs/Outputs Building Blocks	Functions (Capacities)		
	Example Potential Indicators of Essential Functions	Example Potential Indicators of Critical Functions Under Stress	Example Quantitative Measures
Health workforce	Trains qualified professionals Integrates different specialties and disciplines Addresses mental health of professionals	Re-assigns health professionals Engages in task shifting Expands responsibilities of health professionals	# different types of professionals per population # patients per medical professional
Community Carers	Trains qualified professionals Retains qualified professionals	Coordinates community carers Communicates with community carers	# community carers per population
Medicines	Availability of needed medicines Accesses needed medicines	Has flexibility in purchasing Scales up to population level	# medications stockpiled
Infrastructure	Has spare capacity of physical resources Has ability to adapt existing infrastructure Has telehealth infrastructure	Re-deploys physical resources Adapts physical resources	# hospital beds/population # ICU beds/population
Information systems	Utilizes an integrated interprofessional EMR Tracks population health via standardized data, i.e., EMRs, surveys Designs alert systems Identifies quality improvement needs	Leverages existing data for routine surveillance Identifies at-risk populations quickly	Real-time data lag estimate # data fields populated with useful aggregate data to inform public health

Governance	Engages in participatory leadership Coordinates decision making across hierarchies Incorporates effective models of governance Informs public in a transparent way Encourages accountability Fosters environment for collaboration and learning Real-time response and decision making Responsive to feedback	Adapts leadership and governance structure in an agile manner Allocates clearly decision making power under stress Potentiates public health messaging Takes advantage of strengths of collaborators Timely response and decision making	n.a.
Financing	Balances funding mechanisms Has a revenue structure Has a set of rules for financing	Mobilizes financial resources	% increase in funds
Health services	Potentiates primary care services Provides sufficient coverage of health needs Provides sufficient mental health care coverage Integrates mental health care into other services	Supports primary care services Maintains access in line with health needs Ensures access to care for vulnerable groups Maintains access to mental health care	Waiting times for services Satisfaction ratings % of population without coverage
Health promotion	Engages in prevention activities Encourages inter-sectoral collaboration	Maintains health promotion activities Strengthens inter-sectoral collaborations	# collaborating organisations

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About the European Alliance for Value in Health

The European Alliance for Value in Health is a group of associations representing stakeholders active in the broader European health systems. The Alliance aims to accelerate the transformation towards value-based, sustainable and people-centred health systems in Europe. For more information on the European Alliance for Value in Health, please reach out:

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