THE HEALTH SYSTEM IN THE POST-COVID-19 CRISIS ERA

Health Advisory Council

April 2020

Additional recommendations. July 2020

Coordination:

Secretaria tècnica del Consell Assessor de Salut. Departament de Salut, Generalitat de Catalunya

Authors:

Carme Planas-Campmany. Secretaria Tècnica, Consell Assessor de Salut (CAS), Departament de Salut, Generalitat de Catalunya.

Iria Caamiña-Cabo. Secretaria Tècnica, Consell Assessor de Salut (CAS), Departament de Salut, Generalitat de Catalunya.

Elena Calvo-Valencia. Secretaria Tècnica, Consell Assessor de Salut (CAS), Departament de Salut, Generalitat de Catalunya.

First edition:

Barcelona, July 2020.

Linguistic advice:

Servei de Planificació Lingüística del Departament de Salut

URL: https://scientiasalut.gencat.cat/handle/11351/5613

The task of the Health Advisory Council

As a consultative body, the Health Advisory Council is tasked with rethinking and reshaping the model we want in the medium to long term to consider what the post-COVID-19 crisis health system should look like.

Alba Vergés, Minister of Health

The vision of the Health Advisory Council

The Council should work on drawing up recommendations to guide the post-crisis care model, which is always intended to be an essential part of a health system that is person and community-centred, should deliver a comprehensive and integrated response to their needs set against a background of unlimited possibilities coupled with limited resources.

Manel Balcells, Chair of the Health Advisory Council

Contents

1. Introduction 4

2. Brief analysis and lessons learned from the crisis 6
   2.1. Ethical aspects of pandemic management and measures 8
   2.2. Transformations identified before the crisis and still ongoing 10

3. Vision of the Health Advisory Council 12

4. Recommendations for shaping the health system in the post-COVID-19 crisis era 14
   4.1. Responding to the immediate impact 17
   4.2. Public 21
   4.3. Professionals 23
   4.4. Organisations 26
   4.5. System 34

5. References 52

6. Members of the Health Advisory Council 54

1. Introduction

The impact of the global COVID-19 pandemic caused by the SARS-CoV-2 coronavirus has yet to be fully determined. Notwithstanding the ongoing uncertainty, it is essential to start taking stock and building a future for after this crisis.

Globalisation has been instrumental in the spread of the virus, which has affected the health of people in particular and the community in general around the world. At the same time, it has had an impact on social and economic issues, which has also acquired a global dimension.

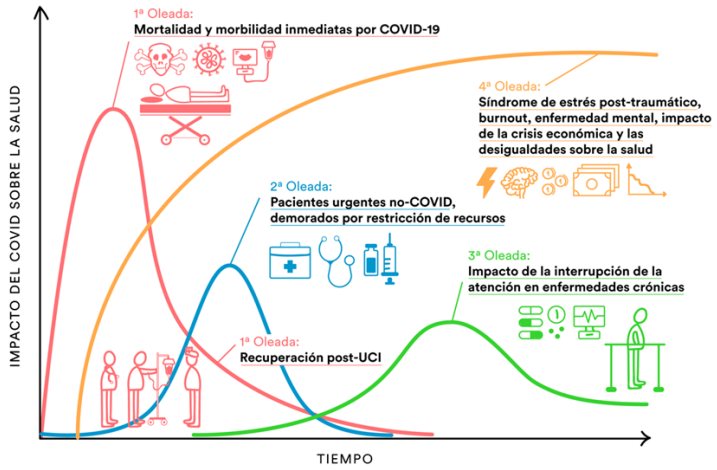
Against this backdrop of a health emergency, the COVID-19 crisis has highlighted the fragility of our healthcare system and shown that reforms to the health and welfare system, which have been pending for years, can wait no longer. It has also underscored the value of a healthcare system which is universally accessible and the importance of public intervention in managing the resources of the system as a whole.

Prior to the outbreak of COVID-19, the immediate future was already a scenario with an increasingly educated, discerning and independent public. Also, with more flexible healthcare professionals, who would need to work in multi-professional settings and find a balance between extreme specialisation, specialisation and a generalist approach, and more flexible organisations, which would be expected to operate as part of a network of interconnected networks. Thus this crisis has fast-tracked the engagement and shared responsibility of individuals and communities and the flexibility needed in organisations and from professionals, the latter being increasingly demanding and legitimised by the public.

In a recent article (Meneu R, et al., 2020), economic and health experts described the impact of COVID-19 in four waves (Figure 1). The short- and medium-term consequences call for immediate responses. The initial consequences, the immediate mortality and morbidity caused by COVID-19, are now being addressed by the healthcare system and will have implications for communities, especially for vulnerable groups, and for health and social care professionals and organisations. Subsequently, the second and third waves will burgeon as the operational capacity of the non-COVID-19-related system is recovered. To cope with this, the most urgent care for people with other health conditions, which will have been delayed by resource constraints, and interrupted care for people with chronic diseases are being

resumed. This will have resulted in worsening of the health status and perhaps the living conditions of the people whose care has been delayed. Finally, a fourth wave is outlined, with no peaks but sustained over time and with a cross-cutting impact. In this last wave, a rise in cases of post-traumatic stress syndrome, burn-out syndrome, and mental disease is predicted alongside the impact of the recession and increasing health inequalities which will hit a substantial segment of the population.

Figure 1. Impact of COVID-19 on health (four waves), AES, April 2020



Meneu R, Ortun V, Peiró S, González B, Hernández I, Ibern P. La salida: Mejorar la capacidad de respuesta sanitaria (y social). Blog Economía y Salud, AES. 19 April 2020. Available at: http://www.aes.es/blog/2020/04/19/la-salida-mejorar-la-capacidad-de-respuesta-sanitaria-y-social/

We need to pay close attention to how the situation evolves, anticipate scenarios and move forward with proactive measures focused on people and communities, professionals and organisations to mitigate the effects. Likewise, health and welfare system operations have to be resumed on the basis of the principles of equity, quality and efficiency to ensure public management of care for people's social and health needs. There also has to be a conversation and reflection about the ethical aspect of particular measures affecting on individual freedom with respect to the common good. This discussion is about more than just health-related competences, yet it has been in a health crisis that it has become evident.

The Health Advisory Council (HAC), a consultative body of the Ministry of Health, has conducted an initial assessment of how the health system should be shaped in the post-COVID-19 crisis era. This assessment has been drawn up on the basis of brief critical analysis and learning from experience with a view to using it in the future.

2. Brief analysis and lessons learned from the crisis

A brief and agile analysis of the health crisis we are going through leads us to be humble yet critical, and also to put the emphasis on learning from experience in order to get ahead of the curve and use it in future crises.

Globally, learning from mistakes stems from having initially underestimated the outbreaks, then the epidemic and finally the pandemic. International agencies such as the WHO, states and scientific and academic organisations were struggling with a disease which was unknown and therefore unpredictable.

Nevertheless, progress has also been made and effective decisions have been taken to deal with a major health emergency. The decisions have been taken both collectively by governments and also individually in the daily lives of each professional and citizen.

The HAC addresses relevant issues in relation to protection, prevention, care, management, planning and ethical aspects of management and action in the pandemic.

We cannot ignore the fact that the declaration of a state of emergency by the Spanish government and the ensuing centralisation of crisis management, epidemiological strategy and equipment procurement have greatly influenced the decision-making capacity of the Catalan government and therefore of the Ministry of Health.

Against this background, the HAC has identified several strengths and weaknesses of our system which have affected how the crisis has been handled.

- The strengths include:
    - The public's solidarity, especially in terms of the enormous effort they have made in lockdown with all its attendant difficulties.
    - The solidarity and flexibility of professionals to adapt their everyday routines to cope with COVID-19.

- The system's ability to react and become more flexible in response to crises. The efforts put into reorganising health facilities across the region and turning them into COVID-19 centres. Also the increase in the number of critical care beds and turning various facilities into field hospitals. At the same time, new and diverse protocols have been generated, albeit varying across regions.
- The potential of digital tools.
- The role of primary and community care in resolving, curbing and tracking the disease, with a key part played by home-based care and remote care.

- Notwithstanding the health system's strengths in addressing the crisis, weaknesses have also been noted:
  - Lack of rigorous protocols and guidelines as well as agreement, in particular at the supra-regional level, in dealing with various aspects of the crisis, especially in:
    - Prioritisation of resources when they are limited and have to reach all those in need equitably.
    - Care for the end-of-life process.
  - Lack of care integration in health and social areas which is evidenced by coordination which can be improved in the region.
  - Shortcomings in analysing and foreseeing the scale of the pandemic, with little coordination between health protection services, the responsiveness of the regional and municipal public health network and the healthcare system.
    - Major public health shortcomings such as the absence of tests to diagnose the disease and of personal protective equipment (PPE).
  - Lack of agreed, authorised and recognised scientific and technical leadership in health which is visible as a point of reference for the health system.

- Lack of foresight concerning the impact of COVID-19 on the system of residential facilities for the elderly and people with disabilities in order to prevent infection and provide these facilities with resources to cope with it.

2.1. Ethical aspects of pandemic management and measures

The ethical aspects run through the whole system and are essentially addressed in the following four areas which have been identified as critical:

- **Ethical criteria in prioritising resources when they are limited and have to reach everyone who needs them**

  Prioritisation is conducted in the system on a regular basis as resources are always limited and criteria have to be established to decide, for example, the order in which people join waiting lists.

  As a result of the COVID-19 crisis, this shortage of resources has suddenly and overwhelmingly become apparent. Widespread transmission of the virus across the population, and which is very serious for some people, has meant that criteria have to be devised to help professionals set priorities for access to life support measures.

  Although partnerships and solidarity between sectors have made it possible to quickly alleviate shortcomings in devices and facilities, drawing up and designing criteria for prioritisation has also been both essential and useful. The most clear-cut example of the ethical principle of justice and equity has therefore emerged in the need to decide who might have the best chance of surviving and who might not, however tough such a choice may be. However, it should be stressed that in practice these decisions have been few and far between, most likely due to the fact that sufficient resources have been secured to cope with the peaks of the crisis.

  Nevertheless, initiatives have emerged from a number of groups including the Catalan Bioethics Committee, scientific societies and others. Each of them, with their own style and potential hits and misses, have put forward ideas, thoughts and algorithms to help professionals in this challenging task. Yet notwithstanding the value of these initiatives, there has still been a feeling of insufficient coordination and leadership.

There has also been unnecessary concern among the public at large about the prospect of setting specific criteria, such as someone's age, practically as priorities. These approaches have generated social anxiety among older and more vulnerable people that is totally avoidable.

- **The ethical debate on companionship for people ill with COVID-19**

  Companionship for people ill with COVID-19 in care facilities, especially in the end-of-life stage, has led to bewilderment and unclear guidelines which have also varied from week to week. The first guideline was to isolate sick people completely, even though they were at the end of their lives. Then it was extended to allow a family member to be with the ill person during the last days of their life, although this relative would have to be properly equipped and promise to self-isolate after the ill person passed away.

  Many families have lost their relatives without being able to see them in the last weeks or days of their lives, without being able to say goodbye to them and experiencing difficult grieving. The almost "inhuman" aspect has been tempered over time based on discussion papers which recommended a change in approach. Given the experience gained, it would most likely have been appropriate to adopt this principle from the outset and much suffering would have been avoided.

- **Management of health data tracked to curb the disease**

  The public has been fully supportive and cooperative in public initiatives for their own tracking and tracing whether with or without symptoms to help gather the pandemic's epidemiological and evolutionary data.

  This process has provided little information about how these data are managed, about confidentiality safeguards, about where they will go and what they may be used for. It should be borne in mind that people's fundamental rights are at stake and there should be at least transparency and open disclosure.

  Health data management is always associated with either research or care. In both areas there are forums for discussion when there is a clash of values; for example, research ethics committees and care ethics committees. In terms of big data management there is also an evaluation committee which oversees the ethical aspects as part of the Data Analysis Programme for Health Research and Innovation (PADRIS). So the indispensable management of COVID-19-related data also needs

to deliver a framework of security for the public and ensure that these data are used ethically.

- **Side effects for healthcare professionals who have been dealing with COVID-19**

  The effort of the healthcare professionals involved in caring for patients in COVID-19 has been monumental and they have given much more than 100% to their task, sparing neither time nor energy.

  The level of emotional and physical suffering endured in this endeavour is also extremely high and all the fortitude they have shown in looking after people will take its toll on them when everything gets back to its normal pace.

  It is an ethical and conscientious duty to be grateful to these professionals and to repay their efforts in the way which is most efficient for the system as well.

2.2. Transformations identified before the crisis and still ongoing

Even before the pandemic, transformations had been identified that are still ongoing today. The health system's needs have again been brought to the fore, some of them expanded on, shared and published by this Council.

There has been much discussion about the responsiveness of primary and community care (PCC), especially in caring for people with chronic diseases and others at risk of suffering from them, and also about aspects of managing and planning for professionals, including the need to tailor professional roles. Research and innovation, telemedicine and public-private partnerships have also been envisaged. There have additionally been several references to the residential model, the shared responsibility of the public, the service portfolio and underfunding.

The new benchmark care models in the Catalan healthcare model defined before the COVID-19 crisis were already community-oriented and extended far beyond the walls of hospitals as they integrated PCC, specialised care and social care. The need to integrate services and put people and communities at the centre of care is more pressing than ever, with special emphasis on enhancing the experience of individuals. In this respect, the health and welfare

system needs to be able to operate with a twofold approach for people and for communities rooted in a multidisciplinary perspective.

Other priority aspects that are still ongoing and where further work and progress is needed in the post-COVID-19 crisis era are:

- Endeavouring to eradicate health inequalities, in particular socioeconomic and gender differences.
- Continuing to promote healthy ageing and fair access to social and health care services in terms of aspects with an impact on health.
- Care for the elderly, dependent people and people with non-communicable (chronic) health conditions, mainly preventable health conditions, is still a strategic strand in all health and social policies.
- Continuous development of knowledge and scientific and technological breakthroughs maintain the trend towards greater specialisation of professionals and improvement of treatments and procedures, with the resulting broadening of options in spite of limited resources.
- The need to improve data collection, analysis and use as a basis for gathering reliable information and sharing it to deliver comprehensive and integrated care for people's social and healthcare needs.

3. Vision of the Health Advisory Council

The members of the Health Advisory Council (HAC) were appointed at the end of 2018 and tasked with rethinking and reshaping the future healthcare system model in line with the social, demographic and technological needs and changes of the coming years. They had to do this on the basis of calm and mindful consideration of a present and future with unlimited possibilities coupled with meagre resources.

Everything has changed. The present has changed. The future, as always but now more than ever, is uncertain.

> *This storm will pass. But the choices we make now could change our lives for years to come.*
>
> Yuval Noah Harari
> *The world after coronavirus*
> *Financial Times*, 20 March 2020

It is hard to predict the future of the healthcare system today. The extent of the consequences of this crisis is still unknown and we will not even know for sure whether coronavirus will have been halted when cases abate or when we are going to behold the next event which will rock the whole world.

Uncertainty also permeates the ignorance of the real impact of the changes on people, in the social sphere, in the pattern of demand and use of services, etc.; on professionals, in roles, specialities, the value of humanisation, ethics, recruitment and projections, training, etc.; on the system's organisations, i.e. how far their capacity to react and reinvent themselves, their flexibility, etc. can go; and on technological advances and innovation, such as the speed with which innovations have been implemented, the impact of technology on remote care in times of crisis compared to the normal pace of implementation, etc.

This crisis compels us to think about what has happened, to do things differently and to plan in a different way. It means working more than ever as a team, in a network and across borders to tackle a common goal: the health of people and its determinants. And we must also build in learning and get the health and welfare system ready for all potential emergencies.

The crisis has been a lesson in humility. It has shown that there are a number of key aspects which we had not sufficiently covered or planned for, and it has further revealed our vulnerability as a planet, as a continent, as a country, as a system, as professionals and also as people. The scale of the crisis has been and will be so severe that we have an inescapable responsibility to undertake an exercise in critical thinking. This thinking should enable us to examine our strengths and weaknesses and to learn the appropriate lessons for the future.

A gray rhino is a highly probable, imminent threat; we can see the dust cloud on the horizon long before the charging animal comes into view. Gray rhinos are not random, but occur after a series of warnings and visible events.

Michele Wucker
The Gray Rhino: How to Recognize and Act on the Obvious Dangers We Ignore
St. Martin's Press, April 2016

Perhaps it is still too soon and a little more time and distance are needed to carefully analyse the pandemic's impact. However, the HAC shows how this situation has brought out the virtues of the healthcare system led by the commitment and quality of its professionals. Yet it has also revealed its shortcomings such as underfunding, the need to transform the system to meet social and health needs and the need to bolster public health and primary and community care.

The HAC, meeting in April 2020 in special online sessions, has set its sights on rethinking some aspects of the health system. Specifically, it seeks to identify the lessons learned from the crisis and make recommendations for the alignment of the health system in the post-COVID-19 crisis era. This is based on the principle that the system should be fair, equitable, high quality and efficient. It should also be community-oriented and deliver a comprehensive and integrated response to community needs set against a background of unlimited possibilities coupled with limited resources.

4. Recommendations for shaping the health system in the post-COVID-19 crisis era

There is now a pressing need to put forward strategies and measures which may be useful and get us ready to tackle future crises. In parallel, we need to continue to revamp the system to ensure that people's health and wellbeing are enhanced through fair, inclusive, quality, safe and efficient care and by taking decisions to ensure it is viable in the medium to long term.

Table 1. Recommendations for shaping the health system in the post-COVID-19 crisis era.

Recommendations for shaping the health system in the post-COVID-19 crisis era
Responding to the immediate impact
R1. Draw up a care plan for the public, which is integrated and consistent with the rest of the strategies laid down in mental health care to address the impact of the crisis on the mental health of people in general and of vulnerable groups in particular.
R2. Draw up a care plan for professionals to mitigate the consequences of the emotional and physical impact of the care they have provided to individuals and communities during COVID-19.
R3. Draw up specific and transparent common criteria to include them in the guidelines to be given to healthcare facilities and professionals and prioritise both delayed and newly generated care.
R4. Ensure that essential healthcare and social structures, resources and channels are available and ready in case of new outbreaks.
R5. Identify and document innovations implemented during the crisis which have added and can continue to add value to the health system, assess and select the ones that are scalable, and draw up a feasible implementation plan.
Public
R6. Map out and prioritise the development of social and health protection strategies targeted at caring for vulnerable people.
R7. Acknowledge and harness the ability shown by the public to share responsibility by building it into the process of identifying areas for improvement in the system.
Professionals
R8. Recognise by means of tangible structural measures the proven worth, commitment and work done by all health and social system professionals engaged in the care, management and planning of the response to the COVID-19 crisis.
R9. Redesign training to factor in attitudinal issues based on humanistic values and critical thinking, partnership with other disciplines, adaptability and resilience in order to build the skills required to meet people's needs.

Recommendations for shaping the health system in the post-COVID-19 crisis era

Organisations

R10. Ensure that the health and social system structures and professionals are sized to avoid systematic and continuous high case loads and can therefore respond in an emergency.

R11. Build on the flexibility shown by the system during the crisis by implementing measures to overcome barriers (administrative, cultural and attitudinal) and adapting and developing the roles of professionals and organisations.

R12. Set up well-structured epidemiological and clinical information systems which exploit the full potential of new technology with utmost respect for confidentiality and citizens' rights while refraining from any measures which may be discriminatory or exclusionary.

R13. Design and deploy a balanced scorecard for the health system with prior review and adaptation to the new circumstances of the action plan and which should feature useful and understandable information to learn about and track health and social facilities and resources and enable alignment of the system's stakeholders, decision-making, evaluation and transparency.

R14. Drive the development of technology geared towards remote care by harnessing the adaptability shown by professionals and the public, especially in primary care, and in proportion to the need for physical interaction.

R15. Fast-track the rollout of home-based care as an alternative to hospitalisation or institutionalisation by drawing on the experience gained during the crisis. The quality of the rollout and evaluation of the impact of this model of care on the family unit should be monitored.

R16. Draw up a crisis management plan which comprehensively and in detail covers the process undergone during the crisis and which documents and examines experiences and on the basis of the results establishes protocols for them.

R17. Set up a crisis advisory committee, which is diverse and made up of recognised experts in the field, in order to draw up agreed and well-founded recommendations. A single person should be selected from this committee to be the expert spokesperson and set out the scientific and technical knowledge on which the health authority bases its decision-making so as to avoid mixed messages being given to the system and the public.

System

R18. Strengthen the health authority's governance and leadership to foster alignment, coordination and/or partnership of healthcare institutions and health system resources.

R19. Enhance interdepartmental strategies in a crisis, especially in the field of education, social services, employment and the economy.

R20. Increase health funding to the extent needed to achieve explicit and measurable targets for improving equity, quality and safety, coordination and efficiency, and prioritise actions and benefits based on added value.

R21. Enhance public health by identifying and addressing weaknesses, especially in terms of resource availability, to better dovetail with the health system and give more prominence to the community.

R22. Add global health issues which may impact the public's health to the health policy agenda.

Recommendations for shaping the health system in the post-COVID-19 crisis era
R23. Guide the primary and community care model proposed by the Health Advisory Council, bearing in mind the need for a balance between person-centred and community-centred care.
R24. Implement the new model of care for social and health needs proposed by the Health Advisory Council, balancing the model of person-centred care with the indispensable community-centred care approach which has been shown to be particularly appropriate during the pandemic.
R25. Address the weaknesses of the residential care model by achieving a balance in management between the health and social welfare ministries concerned with sufficient financial, human and material resources to meet healthcare needs while not medicalising responses to social needs.
R26. Draw up protocols and guidelines with explicit and unambiguous instructions, which include ethical standards for care in a health crisis and are aware, that prioritisation and, where necessary, rationing should ensure equity and avoid disparities in criteria when resources are limited.
R27. Set up a forum for ethical thinking and discussion to make recommendations which will provide a model and guide for supporting people in institutions, especially in the end-of-life stage, in an emergency. The recommendations should ensure equity and be based on humanitarian and dignified death principles.
R28. Set up a group under the auspices of the Catalan Bioethics Committee which will oversee ethical issues in processing confidential data and information.
R29. Set up venues or groups for discussion, decision-making and drawing up recommendations with all stakeholders, especially in a crisis, on the limits of healthcare intervention and the conflicts arising between individual rights and the common good or the health of the community.
R30. Fast-track the implementation of strategies for transforming the system mapped out beforehand but yet to be put into practice, including prior review and inclusion of the experience gained during the crisis while avoiding duplicities.
R31. Develop, test and implement the technological tools and options which support decision-making in governance, planning, management and care.
R32. Draw up a framework to guide and organise research and innovation in an emergency to identify the needs to be addressed, how they should be met and how to fund the response.
R33. Drive and promote production capacity in lockstep with supply and early public procurement to ensure that materials and medicines are always available and set up agencies authorised to certify them.

Source: Authors' own compilation.

4.1. Responding to the immediate impact

R1. Draw up a care plan for the public, which is integrated and consistent with the rest of the strategies laid down in mental health care to address the impact of the crisis on the mental health of people in general and of vulnerable groups in particular.

The COVID-19 pandemic has had and is having adverse consequences for people's health with a particular impact on mental health. The public has experienced painful, disconcerting and stressful experiences (Codagnone et al., 2020; Ho, Chee, & Ho, 2020; Holmes et al., 2020; Vieta, Pérez, & Arango, 2020) which must be addressed as a matter of urgency.

A care plan for the public has to be drawn up whose strategic strands are mapped out in the light of the mental health care needs which have emerged due to the extremely adverse health scenario seen over recent months. When drawing up this plan, particular care must be taken to ensure that its strategic strands and actions always chime with the mental health care model defined by the Ministry of Health. This means it will have to be aligned with the Mental Health and Addictions Master Plan and the Comprehensive Plan for the Care of People with Mental Disorders and Addictions once they have been brought into line with the new situation.

It should also be borne in mind that action on mental health is most effective in the settings closest to where people with mental health and emotional balance problems live. The plan should therefore ensure equity by providing a general framework of measures which makes it easier to implement actions consistent with the diversity of social and economic situations and the environment where people live and also with the special features of vulnerable groups. Here special care needs to be taken with children and teenagers, overburdened carers, the elderly and people who have previously had mental health conditions.

The active engagement of the public as the main stakeholder enhances the quality of the plan and its effective implementation. The views expressed by vulnerable groups should be reflected in the decision-making process in order to meet their expectations in the best possible way.

R2. Draw up a care plan for professionals to mitigate the consequences of the emotional and physical impact of the care they have provided to individuals and communities during COVID-19.

People who have directly cared for people with symptoms compatible with COVID-19 and their families during the pandemic months have experienced unexpected and unimaginable situations. These situations have taken a physical and emotional toll on them which the health authorities need to deal with (Ho et al., 2020; Holmes et al., 2020; Vieta et al., 2020).

Caring for people who have to look after the health and wellbeing of their fellow citizens is always an ethical duty for national health system leaders. This duty has become an urgent priority in the immediate aftermath of the COVID-19 pandemic.

The emotional wellbeing of healthcare professionals has a direct impact on the wellbeing of the people they serve.

This situation needs to be addressed by devising a care plan which provides a fair response to all healthcare professionals in this particular position. However, the plan additionally has to be designed with a broader perspective which also fosters structured emotional support systems for professionals and teams.

As mental health services have already seen a surge in demand for support from their peers in other parts of the system, the model of care meeting this need should be planned, implemented and appropriately resourced. The model must offer a specific response yet it should also aspire to move towards a model of structural care in the system.

R3. Draw up specific and transparent common criteria to include them in the guidelines to be given to healthcare facilities and professionals and prioritise both delayed and newly generated care.

Non-COVID healthcare is being resumed in a scenario where pre-pandemic waiting lists have lengthened with greater delays than would otherwise have been expected.

Restrictions, interrupted care and worsening living conditions after the pandemic are expected to lead to deterioration in the health status and quality of life. People with new health conditions which could not be attended to will be joined by people who, despite feeling ill, preferred to wait before going to a health facility and also by others with risk factors and chronic health conditions which are poorly controlled or decompensated. People experiencing the after-effects of COVID-19 will also need to be cared for.

In this situation, priority should be given to delayed and new care on the basis of explicit and transparent common criteria for healthcare facilities and professionals in order to ensure equitable, safe and quality care. These criteria should be drawn up by multidisciplinary teams made up of health professionals (management and care staff), bioethics professionals and the public. Care must be taken to avoid the exclusive use of economic efficiency criteria and to build in equity, health and welfare outcomes, satisfaction and quality of life principles. It needs to be borne in mind that one of the aspects most deferred by the emergency has been health prevention and promotion. It is essential to keep preventive programmes and educational strategies for population groups on track, for example by harnessing virtual environments for group educational activities.

The criteria should be measurable and determine the resumption of the healthcare system's operations based on the epidemiological circumstances while applying knowledge and monitoring it to prevent or deal with new incidents. Hence it is essential that public health standards are included, especially in terms of preventing communicable diseases.

The public should play a key role in drawing up the criteria as co-responsible stakeholders and therefore also as a partner in the decision-making process.

R4. Ensure that essential healthcare and social structures, resources and channels are available and ready in case of new outbreaks.

The COVID-19 epidemic is epidemiologically different from previous epidemics. It has led to generalised isolation, quarantine, social distancing and lockdown measures and the adjustment of the whole health system as allowed by the epidemiological criteria, followed by easing and lifting of lockdown with the warning of new outbreaks. The short-

term scenarios suggest the likelihood of outbreaks, which may range from mild and controlled ones to a new pandemic with consequences going beyond the ones experienced during the first and second quarters of 2020.

Which structures and channels put in place during the pandemic have been most efficient needs to be examined so that the constructive ones can be improved and replicated at the speed required to deal with a sudden resurgence. At the same time, which new structures, channels and measures would be called for in this case has to be decided.

The flexibility and resilience shown by the system should be explored and harnessed to stop future infections from once more putting it under unsustainable pressure. Mechanisms for early detection and efficient diagnosis of COVID-19 and the resources needed (with and without hospitalisation) to care for people with a confirmed diagnosis and their contacts are crucial. The shared responsibility of public health and primary care must add epidemiological surveillance capacity and community care and follow-up.

R5. Identify and document innovations implemented during the crisis which have added and can continue to add value to the health system, assess and select the ones that are scalable, and draw up a feasible implementation plan.

Pandemics have been a driving force for innovation in diagnosis, treatment, use of personal protective equipment (PPE), information technology and manufacturing (Frazer, Shard, & Herdman, 2020). They have also enabled progress to be made in translating data intelligence into epidemiological surveillance by using prediction algorithms and mechanisms for epidemiological identification, tracking and tracing of the disease. Likewise, the COVID-19 health crisis has led to calls for action and the implementation of innovative solutions.

The balance between the quality and safety of care and protection of professionals has underpinned the proactive redesign of the way in which the public is served. These innovations have been led by professionals and companies inside and outside the healthcare sector in a markedly collaborative approach. The purpose has been to deliver the best option for people and professionals with innovative organisational, process and technological solutions. Drawing on experience, adding aspects which can be sustained

should be considered (Lee, 2020) provided that they meet equity, efficiency, quality and safety in care standards, include ethical guidelines and are geared towards health and quality of life outcomes.

Identifying, documenting and evaluating innovative system solutions, gauging their value and assessing whether they are scalable to the system as a whole is essential if they are to be exploited. Armed with this knowledge, an implementation plan needs to be drawn up that is feasible across the whole region while steering clear of territorial variability. This deployment plan additionally needs to be accompanied by a regulatory framework and streamlined certification mechanisms for its implementation.

4.2. Public

R6. Map out and prioritise the development of social and health protection strategies targeted at caring for vulnerable people.

The impact of the COVID-19 healthcare crisis on the social determinants of health has been far-reaching, disproportionately affecting vulnerable people (World Health Organization, 2020): children, older people, women, carers, people with disabilities, people with mental illness, etc. These people have seen their often already limited access to social, health and education services disrupted.

Likewise, a recent Agency for Healthcare Quality and Evaluation report (AQuAS, 2020) on socioeconomic inequalities and the potential association of detected cases with mortality due to COVID-19 in Catalonia concluded that people with a low socioeconomic level have higher rates of COVID-19 cases and higher mortality than people with a higher socioeconomic level.

In view of the evidence that COVID-19 has hit the most vulnerable groups hardest and that the impact of the pandemic and lockdown has also been most adverse for them, the authorities need to take emergency measures to address this issue. The measures

must provide an integrated and comprehensive response to health and social needs while maintaining the principle of subsidiarity.

These measures should ensure the continuity of essential social and healthcare services which are both coordinated and measurable. At the same time, it is necessary to establish mechanisms for participation in the design, implementation and evaluation by the people to whom the strategies are addressed.

Awareness campaigns also need to be kept up to make the public at large, and vulnerable groups in particular, aware of the importance of using hygiene and social distancing measures. These measures must be clearly, concisely and continuously publicised.

R7. Acknowledge and harness the ability shown by the public to share responsibility by building it into the process of identifying areas for improvement in the system.

The role of the public has been crucial at a time when unprecedented large-scale changes in behaviour have been needed. People have been responsive and helpful in implementing measures during the pandemic and have made significant efforts such as thelockdown.

The public have also taken decisions individually and collectively on a day-to-day basis to tackle the healthcare, social, educational and economic crisis. And they have done so in a spirit of solidarity, even when faced with uncertainty, concern and at times extreme precariousness. The public have played an active and decisive role, whether they are healthy and self-sufficient people living alone or people who are family members and carers of other people, whether institutionalised or not (children, the elderly, people with disabilities, etc.), or neighbours or volunteers (people living alone, people at risk of social exclusion, children and women in situations of gender violence, etc.).

It is in this setting that the public, increasingly educated and informed, discerning and independent and sharing responsibility, wants transparent governance. People need to have all information of public interest available to them in a way that is understandable, ongoing and up-to-date about what is happening so they can get involved. This will

enable them to help out and be a partner in improving the health and welfare system, as they have done in the fight against coronavirus transmission, with responsibility and commitment.

Mechanisms to build on their experiences and preferences need to be explored, activated and maintained in order to move forward in joint participation. Their experiences are essential in identifying areas for improvement in the health and welfare system and how institutions should respond to the healthcare crisis. Likewise, monitoring and evaluation mechanisms must be put in place to ascertain the impact of this participation and to ensure communication and feedback in a framework of transparent governance.

4.3. Professionals

R8. Recognise by means of tangible structural measures the proven worth, commitment and work done by all health and social system professionals engaged in the care, management and planning of the response to the COVID-19 crisis.

The successful outcomes of the work performed by organisations in the health and social system depend to a large extent on the motivation, talent and knowledge of their professionals. The crisis brought about by COVID-19 has meant that system managers and society as a whole have become aware of what these professionals can do. In an exceptional situation, they have delivered a direct and immediate response by putting into practice their acquired knowledge based on the core values of their profession.

This important lesson means that decision-makers can no longer put off implementing effective structural strategies for recognising all the professionals in the system. Mechanisms need to be put in place to turn these strategies into tangible actions that go beyond mere financial recompense.

Immediate action is needed. The many widely agreed proposals for recognition of professionals must be put into effect. These measures should also be tailored to the current situation and the vision of the future of the country and of the territory. We need to take into account the latent threat of new and unpredictable crises which COVID-19 has made us more aware of.

The vast majority of these recognition strategies have already been acknowledged by the Ministry of Health and by organisations representing professionals and professionalism (scientific societies, professional associations, employers' associations, social partners and representatives of the public). Many of them coincide and so it may be concluded that they are widely endorsed.

Health professionals, who work with professionalism in care and also in management, teaching, research and innovation, should share responsibility for decisions about health strategies. They ought to play a key role in prioritising which ones are to be put in place, how they are to be implemented and how their impact on people's health and wellbeing is to be assessed. In line with their engagement and commitment, professionals will be afforded financial and also professional and social recognition. It is thus essential that they are involved from the outset in the decision-making stage and that they remain so until the end.

All the agreed strategies are related to key issues. They include individuals, teams, services, facilities and organisations being independent in a broad sense and in their various aspects, i.e. clinical, organisational, economic, professional, etc.

R9. Redesign training to factor in attitudinal issues based on humanistic values and critical thinking, partnership with other disciplines, adaptability and resilience in order to build the skills required to meet people's needs.

Training is both a duty and a right for professionals and is of the utmost importance. Health professionals should remember that they have to continue learning until the end of their professional lives.

Training is a key factor in the system as the main mechanism for gaining skills given that the quality and safety of health services rely heavily on the expertise of their

professionals. The pace of change in the health and wellbeing needs of individuals and communities makes it imperative that knowledge is constantly updated to acquire the competencies needed to deliver appropriate responses to the public. Training is therefore the driving force behind professionalism.

Ensuring outstanding training in the health sciences involves joint efforts by the people in charge of education (teachers) and health (health workers) who have to plan and run professional training courses and also undergraduate and postgraduate university programmes. Training managers should be aware of the problems that professionals have to deal with and their determining factors and take a long-term view. Extended and complex study periods are needed to map out responses to people's changing needs. Training should be planned by making an effort to envisage future scenarios for each speciality.

Progress needs to be made in a training framework that equips professionals to work in multidisciplinary teams by promoting collaborative practices and building innovation into teaching. Teaching innovation is essential to ensure that teaching does not once more grind to a halt in a crisis. However, e-learning for skills acquisition should not be overused in training areas which call for face-to-face instruction.

A balance must be drawn between specialised generalist training for medical and nursing professionals (with the ability to care for people throughout the lifecycle and especially in situations of chronicity, complexity, fragility or old age) and training for professionals in other specialities (with the ability to address problems that call for highly specific knowledge within their speciality).

In Catalonia, the Ministry of Health has taken a proactive approach to training professionals in the Professional Dialogue Forum, a meeting point for professionalism. Training for health professionals has been addressed within this framework by introducing the principles set out above and operational conclusions have been reached which will enable training policies for these professionals to be implemented in the short and medium term.

Implementing and rolling out the Ministry of Health's new training policies should be fast-tracked in response to the current pandemic. The strategies chosen will have to be reviewed and the lessons learned taken into consideration in order to upgrade them.

4.4. Organisations

R10. Ensure that the health and social system structures and professionals are sized to avoid systematic and continuous high case loads and can therefore respond in an emergency.

The international community emphasises the need to scale up the capacity and resilience of health systems (European Council, 2020). The purpose is to achieve sound health systems not only to cope with health emergencies but also to provide a response to the public on a regular basis. This means that adequate funding and a suitably sized, recognised, trained and refreshed team of professionals are needed as a matter of urgency. Robust primary care, sufficient specialised care, enhanced public health and integrated social and health care are also essential.

The health and social system structures and professionals required for universal, fair, inclusive, efficient, high-quality and safe care have to be determined. This should be in addition to exploring and harnessing the flexibility and pliability shown by the system referred to above in order to avoid straining it to the point of breakdown both in exceptional times and also as part of normal practice.

A roadmap should also be drawn up involving planners, managers, professionals and the public to implement measures which ensure a sustainable transition towards this health and welfare system with shared responsibility. The public's needs, preferences and expectations have to be taken into account along with the best possible development of professionals under normal conditions and also in emergencies while avoiding a generalised and continuous increase in case load.

R11. Build on the flexibility shown by the system during the crisis by implementing measures to overcome barriers (administrative, cultural and attitudinal) and adapting and developing the roles of professionals and organisations.

Flexibility calls for capacity-building to make new strategic choices and is therefore central to the transformation of the health and welfare system which has to accommodate the changing needs, preferences and expectations of individuals and

communities. A paradigm featuring a flexible system, organisations and professionals, optimal scale-up strategies, plans and actions, and safe and quality care is crucial.

In Catalonia, there is a flexible health system which makes it possible to build a culture of innovation. Organisations and professionals should continue to be innovative in the quest for quality, safe and efficient solutions to the challenges they face in the performance of their duties. Innovation is essential to deliver quality and safe services to people and communities which at the same time enhance efficiency in the use of resources.

Flexibility leads to a health system which is more accessible to the public by providing quick and planned responses which are available to professionals and the public to meet their needs under normal conditions and also in health emergencies.

The strategies for greater flexibility that have been identified and have made it possible to overcome administrative, cultural and attitudinal barriers must be set up and implemented in the healthcare system.

Flexibility in the actions taken by professionals should be accompanied by independence and shared responsibility and means that their roles have to be tailored to the varying needs of individuals and communities by augmenting the skills of each of the professions.

The legislative framework and funding need to be fine-tuned in this respect so that flexibility permeates supply (organisations and workers) while ensuring equity, quality, efficiency and safety in the health and wellbeing of people and professionals.

R12. Set up well-structured epidemiological and clinical information systems which exploit the full potential of new technology with utmost respect for confidentiality and citizens' rights while refraining from any measures which may be discriminatory or exclusionary.

Managing a health emergency such as a pandemic calls for reliable, understandable, regular and up-to-date information to make decisions quickly and appropriately in each situation. However, a common feature of managing the crisis has been a mix-up with the numbers in relation to cases, contacts and the availability of social and health

resources. This has brought the information systems (IS) of the health and welfare system into the spotlight.

Comprehensive and integrated IS are an essential tool for assessment, planning, intervention, evaluation and implementation of improvements in health and welfare systems. Good IS management increases the ability to take coordinated and preventive action and also to minimise errors. Epidemiological, clinical and social IS have to be improved and integrated to ensure robust and reliable data are gathered, processed and stored and information is made available which is useful for decision-making, especially for managing and coping with a health crisis such as the one we are experiencing. Furthermore, Catalonia needs to bolster the capacity of its epidemiological IS to share information with other domestic and international IS and gain feedback.

Catalonia has technology with the potential to manage the current crisis, plan a way out of it and cope with it over the medium and long term. In this respect, IS should be tailored and developed with an integrated and inclusive, effective and forward-looking approach in order to analyse the impact of the crisis in clinical and epidemiological terms (cases, contacts, hospital admissions, intensive care unit admissions, discharges and mortality) and also include information which makes it possible to relate these data to the social determinants of health, the impact results of the measures taken, the behaviour of the stakeholders involved, etc.

Just as the technologies have the potential to deliver a comprehensive and integrated IS, they should also be used in the Catalan health system with due consideration for ethical issues. This will have to be done with care while safeguarding one of the essential issues to be protected: data privacy and confidentiality. Measures which may be discriminatory or exclusionary should always be shunned with the utmost respect for confidentiality and the rights of the public.

R13. Design and deploy a balanced scorecard for the health system with prior review and adaptation to the new circumstances of the action plan and which should feature useful and understandable information to learn about and track health and social facilities and resources and enable alignment of the system's stakeholders, decision-making, evaluation and transparency.

Effective decision-making should be properly documented and anchored in reliable and relevant data to achieve pre-determined objectives and strategies. Gathering, processing and sharing information structured in a decision-making information system is essential for coordinated action by all players in the system.

Just as comprehensive and integrated information systems are needed in order to take quick and appropriate action at all times, this will only be possible if a robust, responsive and reliable balanced scorecard is in place with measurable objectives to support decision-making at all levels and across the region.

The balanced scorecard featuring clinical, epidemiological and social information about the entire region and social and health resources is to be drawn up in line with needs and the strategies put in place to respond to a crisis. This will include setting out tangible short, medium and long-term targets and measuring performance using clear and practical indicators.

Meticulous assessment of the situation will enable swift action and planning and provide the rationale for deciding which actions add value and which do not. This assessment brings clarity and a cross-cutting approach to processes, aligning all stakeholders and providing information to the public about the impact of government strategies. Transparency which makes the data and forecasting models used to manage the crisis understandable fosters the engagement and commitment of all concerned (the public, professionals, managers, etc.).

It also has to be ensured that this information in the form of results has an impact on regulations, service procurement and the payment system to avoid constraining care processes and provide the tools needed to enable them to be implemented.

R14. Drive the development of technology geared towards remote care by harnessing the adaptability shown by professionals and the public, especially in primary care, and in proportion to the need for physical interaction.

The health emergency and the decisions taken, especially in terms of social distancing to stop the spread of the virus, have hastened the introduction of creative online measures to prevent face-to-face meetings between people. The online approach has

enabled many people to remain in touch with their key professionals, especially in primary and community care (PCC), but it has also left many of them stranded.

Recent experience has shown the benefits and advantages of telemedicine. This means it is an excellent option which has been viewed and experienced in a positive light by many of its users (public and professionals) as it has helped to protect them and curb the spread of the virus.

The trend now is to seize the moment and the extent to which the public and in particular professionals have adapted in order to mainstream e-health, especially in PCC. The role of consultancy, coordination and liaison, home-based care and telecare needs to be developed rooted in a firm commitment to harnessing the benefits of remote care.

In this context, planning and implementing virtual care is essential under normal conditions and would also be needed in future health emergencies. However, virtual care cannot replace the face-to-face care required in a significant number of health interventions.

Rolling out technology to support remote care has to be promoted. This care should be fair and inclusive, take into account ethical issues and also give a high quality, safe and efficient response. It is essential to find a balance between in-person and virtual care by examining them in detail and deciding what can be delivered remotely and what has to be provided face-to-face. The human qualities of contact and close communication are often essential when looking after people.

Resolving problems with technological tools which enable virtual care should be promoted since this is an opportunity to improve care for people and one which might increase the time available for face-to-face visits.

R15. Fast-track the rollout of home-based care as an alternative to hospitalisation or institutionalisation by drawing on the experience gained during the crisis. The quality of the rollout and evaluation of the impact of this model of care on the family unit should be monitored.

Home-based care (HC), a community intervention which takes place where people live, has become extremely important during the COVID-19 crisis as it has been the setting

of choice for care. It has been driven by the need for social distancing which has meant people have been in lockdown in their homes.

Just as the virtual environment has enabled many people to keep in touch with their key professionals from afar, HC has made it possible to continue caring for some people who have needed it at home with nurses playing a crucial role as essential professionals in terms of promotion, prevention and care that is close to people's surroundings. Further promotion is needed of a model of holistic care which is integrated into the community, made up of professional teams with a high degree of self-management and where home services are supported by established community social care networks, normally run by local authorities.

Even though HC has had a prominent role, it is essential to find out whether it has reached everyone who has needed it, especially vulnerable people (children, the elderly, people with disabilities, with chronic health conditions, with complex needs, people at the end of their lives, etc.). It is also crucial to learn about outcomes, the impact on the family and carers of people who need help, regional variations and other issues. This evaluation will make it possible to identify potential shortcomings and take measures to improve care. Stepping up HC inevitably entails bolstering PCC which is the pivot of the health system (Consell Assessor de Salut, 2019b). Likewise, the other healthcare services should provide the support needed for equitable, quality, safe and efficient home-based care and ensure continuity of care.

Health and social care also need to be fully integrated in order to deliver comprehensive home-based care to people with social and health needs, their families and carers. In line with the recommendations on this issue published by the Health Advisory Council, it is essential that the joint work of the social and health PCC practitioners and the other ministries involved includes and shares decisions on care with the people concerned and their families while respecting their preferences and values and keeping them in their usual setting, preferably their home (Consell Assessor de Salut, 2019b). Individuals and their families also need to have key professionals who can resolve all care issues in a coordinated manner so that continuity of care is assured regardless of the kind of service.

To this end HC approaches must be reviewed and the lessons learned during this period taken on board. Implementation of a comprehensive and integrated home-based care

development plan also needs to be fast-tracked. This plan has to be jointly drawn up by families and carers and social and healthcare professionals. The capacity of immediate social networks to enhance support, help and comfort for those in need should also be acknowledged and harnessed.

R16. Draw up a crisis management plan which comprehensively and in detail covers the process undergone during the crisis and which documents and examines experiences and on the basis of the results establishes protocols for them.

Health emergencies are often associated with unforeseeable crises. It is essential that a specific plan is in place in order to cope with and be ready for these contingencies.

The experience and lessons learned from the COVID-19 crisis should inform enhanced emergency management. They will be helpful in providing a documented, planned, quick and safe protection, prevention and care response to the public in the future.

The crisis plan is to be drawn up on the basis of the lessons learned and provide guidance for all system stakeholders. It forestalls the feeling of loss of control which may be experienced in these situations along with any potential indecisiveness or mistakes by steering everyone involved and counteracting the negative impact of the crisis.

The crisis management plan should envisage and include the following: managing strategic critical stocks (medical devices, technology, diagnostic products and medicines), secure channels for acquiring and distributing materials and resources, production capacity, deployment of professionals, civil actions (field hospitals, adapting health facilities and public spaces, etc.), updating guides (especially diagnostic, care and bioethical guides), coordination processes in the regions and community action with public agencies, public and internal communication channels and models, and a clear model of crisis governance (committees and decision-making circuits).

This plan should be drawn up with special attention to vulnerable groups, health workers, key service personnel and the first symptomatic individuals and their contacts, especially in schools, social and health services, prisons, etc.

R17. Set up a crisis advisory committee, which is diverse and made up of recognised experts in the field, in order to draw up agreed and well-founded recommendations. A single person should be selected from this committee to be the expert spokesperson and set out the scientific and technical knowledge on which the health authority bases its decision-making so as to avoid mixed messages being given to the system and the public.

Apart from its exceptionality, managing a crisis on the scale of the pandemic poses a particularly complex scenario where decision-making has to be based on scientific knowledge.

A range of experts in the field from various disciplines are needed to compile, structure and convey this knowledge. As the European Council notes (European Council, 2020), a crisis similar to the one we have experienced calls for a large-scale change in behaviour and harnessing knowledge from other disciplines. Here, for example, the social sciences can help bring human behaviour into line with epidemiological recommendations and ones from public health experts.

Once this group of experts, which could be called a crisis advisory committee, has been set up, its membership must be announced. As a transparency issue, the public and healthcare professionals should be able to learn about the people who make up the group along with information about their professional background. One of the members of the crisis advisory committee with communication skills should be selected as its spokesperson.

Raising the profile of scientific leadership in decision-making is important, but equally so when these decisions and/or measures are explained to the public.

4.5. System

R18. Strengthen the health authority's governance and leadership to foster alignment, coordination and/or partnership of healthcare institutions and health system resources.

Health authorities, in this case the Ministry of Health, have a duty and responsibility to implement an approach in their strategies which is focused on individuals and communities and to arrange health and welfare systems to ensure that everyone is protected and feels safe in all circumstances.

Governance lays down the strategic lines and actions guiding the health system in Catalonia and has to be conducted with transparency and effective and visible leadership. Genuine participation by all health system stakeholders, including professionals and the public, is required to make it effective.

The Catalan health system is increasingly complex, and in a constantly changing social and economic situation it needs robust leadership at all tiers which has the capacity to implement healthcare policies. Such leadership calls for the centralisation of decision-making rooted in a global vision and primarily ensuring equity. It also ought to be coupled with leadership in the settings which are closest to the place where people are to be cared for.

Leadership in organisations should be undertaken with full respect and consideration for the immense diversity of stakeholders who share and interact in a healthcare system as complex as Catalonia's. Co-responsible citizens, committed professionals and institutions aligned within a common framework need clear guidelines, commitment and leadership along with a cross-cutting regulatory, funding, supply and evaluation framework which is tailored to people's health needs.

R19. Enhance interdepartmental strategies in a crisis, especially in the field of education, social services, employment and the economy.

The joined-up action of the individual areas of a government has become crucial, especially recently given the cross-cutting nature of the actions and the need for a comprehensive view of people. This calls for ongoing interaction between government ministries and shared specification of interdepartmental strategies.

The health emergency triggered by the pandemic and the measures put in place have spilled over into areas of enormous public importance such as health, education, social services, jobs and the economy. The impact has been devastating for the health and wellbeing of individuals and communities.

The closure of face-to-face schools delivering all kinds of education for all school ages and diverse profiles has had a major impact on the educational model and on social issues for everyone, in particular children and teenagers. Likewise, the pandemic has hit the social services, especially for the elderly, people with disabilities, people with mental illness, children and teenagers. It has additionally had a significant impact not only on the people concerned but also their families and carers. By the same token the economic and financial consequences are and are forecast to be shattering.

The pandemic and its effect above all in the educational, social and economic arenas has affected and will continue to affect everyone, further exacerbating the position of vulnerable groups and directly impacting the basic needs of people living in poverty and at risk of social exclusion.

All areas touched by the health crisis are also key determinants of people's health. Many of the policies and programmes which directly influence health have their roots in other fields and this feeds back into a situation which calls for coordinated and streamlined interdepartmental political action. This action should be based on the available learning and evidence and include a cross-cutting and integrating view of the measures to be implemented and the plans and programmes to be reviewed, amended or set up. Likewise, there is a broad consensus about health in Catalonia which ensures the commitment and resolve of all stakeholders and drives the transformation of the health and welfare system, a transformation called for before the COVID-19 pandemic and which is even more necessary in the post-pandemic period.

The Ministry of Health has to lead and deepen interdepartmental strategies that impact people's health and wellbeing and needs to generate a positive climate conducive towards building a national consensus for cross-cutting health approaches which can be aligned with an essential national agreement for people's education and wellbeing.

R20. Increase health funding to the extent needed to achieve explicit and measurable targets for improving equity, quality and safety, coordination and efficiency, and prioritise actions and benefits based on added value.

Sustainability is one of the main challenges facing the healthcare system. At present it is primarily financed through taxes, although to a much lesser extent there are some out-of-pocket payments by patients.

The system has been underfunded since the transfer of health responsibilities in 1981. This results in a chronic and unsustainable deficit of around 10% of the annual public health budget. Some of these failings are the result of the shortcomings of the regional financing model.

Health expenditure in Catalonia is not proportional to its wealth. As Professor of Economics Guillem López-Casasnovas notes in his latest book (Lopez Casasnovas & Casanova, 2020), if Catalonia had the same financing system as the Basque Country, the annual health budget would be around €2.5 billion (a 23% increase on the actual budget for 2019). Likewise, if the average share of public health expenditure in relation to Spain's mean GDP (6.39%) were applied to Catalonia's GDP, this would result in an additional €4 billion. A similar calculation made in the international context to put Catalonia on an equal footing with countries which have a similar GDP would yield a deficit coming to between €4.6 and €6 billion.

Against this backdrop of underfunding, measures were taken in 2011 to tackle the recession. The health budget was substantially cut and this led to a fall in rates and procurement and a review of the system's infrastructure and technology renewal plans.

Although these measures began to be reversed in 2016, this lack of investment has had a major impact on the COVID-19 crisis. It has undermined the ability to recover from waves such as the one triggered by this health emergency which has called for the

availability of healthcare professionals, critical care beds, personal protective equipment and a range of materials (protective materials, testing equipment, mechanical ventilation devices, etc.).

Improving health system funding has to be addressed as a matter of urgency. This is challenging because long-term underfunding is compounded by: increased spending due to the faster development of new technological devices, new drugs, new prostheses and new medical devices, and the pressure to make them available; the growing demand for health care; and the ageing population and increasing prevalence of chronic diseases.

However, increased resources should be coupled with the introduction of mechanisms and tools for systematic evaluation of the cost-effectiveness of benefits (devices, drugs and other products) and models of care.

R21. Enhance public health by identifying and addressing weaknesses, especially in terms of resource availability, to better dovetail with the health system and give more prominence to the community.

Public health (PH) is the science and art of organising and directing collective efforts to protect, promote and restore the health of a community's inhabitants (Piédrola Gil, 2015). Epidemiological surveillance is a core role of PH and helps to design strategies to prevent the spread of disease and plan resources to improve the health of the public.

The COVID-19 pandemic involving an infectious communicable disease has turned the spotlight on the position of public health, underlining the need for a properly structured and equipped network to detect and warn of the spread and impact of any pathogen. In this health emergency, there has also been greater awareness that person-centred care is not enough and that community-centred care must also be stepped up (Nittas & von Wyl, 2020). Experts and international organisations also point out that detecting, tracking and tracing all cases whether asymptomatic or symptomatic is crucial to making a precise assessment of the situation and determining the level of community transmission.

In Catalonia, shortcomings in managing the pandemic have become apparent and need to be swiftly rectified. The Epidemiological Surveillance Network of Catalonia (XVEC) in partnership with the Centre for the Coordination of Health Alerts and Emergencies (CCAES) needs to step up monitoring and evaluation mechanisms in line with the information available.

Greater coordination is needed between PH and primary and community care (PCC) by joining forces to deliver a coordinated response. Monitoring epidemiological changes, the effectiveness of PH and PCC strategies and their acceptance by the population should be increased.

While awaiting a vaccine and developing effective treatments for COVID-19, intensive tracking and tracing of the disease is essential in order to learn about its consequences, make decisions and implement measures based on unambiguous evidence and standards. The benefits of technology should also be harnessed to improve case detection and alerts and trace contacts while respecting data confidentiality.

The Ministry of Health needs to redouble its efforts to put in place effective communication channels and build its capacity to gather, process and share reliable information through a robust information system. Communication is essential to provide all system stakeholders with seamless understanding of the situation, its consequences, the measures being taken and their impact. This will make it possible to keep control and encourage the engagement of the public, professionals, managers and the whole system and involve them in the process. It also helps to maintain credibility and not raise undue alarms while delivering an outbreak alert and management system which prevents and minimises the spread of communicable diseases. Technical audits are also needed to identify key areas for improvement.

R22. Add global health issues which may impact the public's health to the health policy agenda.

Global health becomes relevant in a world where health issues cut across all kinds of borders (geopolitical, social, economic, cultural, etc.) and where the determinants of health are critical.

There are several permanent threats in this respect, and communicable diseases are a good example. In 2019, the WHO reported a global total of 1,483 epidemics in 172 countries over the previous eight years (2011-2018) (Global Preparedness Monitoring Board, 2019). The reports were already warning of the possibility of the swift and lethal spread of a respiratory pathogen which might kill between 50 and 80 million people with an unprecedented economic impact (Global Preparedness Monitoring Board, 2019).

In the COVID-19 pandemic, which has been brought about by a previously unknown pathogen, the degree of readiness and the government measures implemented by countries has varied (Chaudhry, Dranitsaris, Mubashir, Bartoszko, & Riazi, 2020) and might have been more effective had they been shared (diagnostic testing, lockdown, case tracking, social distancing, etc.). The forecasts, scenarios and uncertainty about this pandemic and future epidemics and pandemics underline the need to organise a global response to get health systems ready on a worldwide scale. Catalonia has to seek out mechanisms for participation in drawing up global responses to future crises in which healthcare systems will take on special relevance given the need to look after the health of people resulting from them.

Putting global health issues on the health policy agenda means taking action under the principles of solidarity and respect in a coordinated and networked way, with public health at the centre and implementing evidence-based measures. To this end, we need to strive to accept what global health is and entails and add it to the political agenda. Coordination and partnership policies for international networking should be drawn up to enable the authorities and all the stakeholders concerned to get involved.

In Catalonia, the Ministry of Health has to be very much aware of this global reality in order to keep abreast of developments in the world, seeing the challenges and acting proactively on the universal determinants of health which will inevitably impact us in order to maintain and improve the health and wellbeing of the population.

R23. Guide the primary and community care model proposed by the Health Advisory Council, bearing in mind the need for a balance between person-centred and community-centred care.

The crisis triggered by the pandemic and the subsequent outbreaks, with and without community transmission, has brought primary and community care (PCC) to the fore in resolving, containing and tracking the disease.

PCC has teamed up with public health to share responsibility for detecting, treating, tracking and tracing cases. Support for nursing homes, field hospitals and customised hotels has been kept up and more cases have been diagnosed. In lockstep, PCC, which for years has been working to step up its responsiveness especially in caring for people with chronic illnesses and others at risk of them, has also continued to keep in touch with its target population and attend to them (generally through virtual visits or home-based care). It has intervened by providing care and containing. Now there is also prolonged follow-up of everyone who has had the disease and continues to present chronic symptoms.

The Health Advisory Council (HAC) analysed the situation and made recommendations before COVID-19 to guide the model of primary and community care and address the model of care based on a local approach (Consell Assessor de Salut, 2019b). The HAC report noted the need to maintain PCC as the hub of the health care model by bolstering community health care and striving to reduce health inequalities while ensuring it is accessible, cross-cutting and longitudinal with a clear focus on the public and professionals. It also stressed its essential integration with public health and the social sphere along with the need to increase funding and implement the service portfolio. The recommendations additionally looked at assessment, teaching, research and innovation and harnessing information technology to ensure PCC is ready and well equipped to tackle current and future challenges.

The HAC refers to the document published in 2019 which it considers to be valid. PCC has to be stepped up so that it continues to reach the whole population and the quality and continuity of care need to be safeguarded with protective, preventive and care interventions at both the individual and community level. PCC is viewed as a key component in the transformation of the Catalan health and welfare system. It is

particularly important for bolstering the system's twofold approach: for people and for communities.

Likewise, PCC needs to take on board the lessons learned and the innovations resulting from the pandemic by building measures such as remote care into regular practice, albeit with due concern and respect for the needs of direct face-to-face interaction. The key role of nurses as essential professionals in promotion, prevention and community-based care for the public should also be leveraged and other professionals are additionally to be added on a structural basis.

R24. Implement the new model of care for social and health needs proposed by the Health Advisory Council, balancing the model of person-centred care with the indispensable community-centred care approach which has been shown to be particularly appropriate during the pandemic.

The COVID-19 health emergency has brought to the fore the need to fast-track the transformation of the health and welfare system in order to improve the response to people's social and health needs, preferences and expectations. Once again it has been shown that it is crucial to ensure continuity of care across essential social and healthcare services to look after people and vulnerable groups in particular.

The Health Advisory Council (HAC) analysed the situation and made a proposal before COVID-19 for guidelines on the model of care for people with social and health needs (Consell Assessor de Salut, 2019a). At that time, there was a general political consensus identifying the integration of care as a key component in the transformation of the health and welfare system despite the lack of agreement on how to accomplish it.

The HAC proposed a specific approach to move towards comprehensive and integrated social and health care. It explained there was need for "an instrument with the capacity for innovation should be put in place to transform the relationship between the various levels of intervention and engage all the stakeholders. [...] This body meets the need for an instrument that exercises social and health authority by making inter-sector and inter-governmental coordination effective in a way that is dependent on but differentiated from the current structure of government administration. This will make it possible to deliver effective, agile and flexible solutions to the needs and challenges posed by people with

social and health conditions. [...] Consequently this body should have a specific budget, the capacity to determine service procurement or, failing that, social and health resource allocation, and be responsible for accountability to ensure fair, quality and efficient social and health care" (Consell Assessor de Salut, 2019a). This idea has been supported by the recent recommendations of the World Health Organisation on post-COVID reforms. The WHO calls on countries' health systems to move towards more integrated governance of social and health care (Preventing and managing COVID-19 across long-term care services: Policy brief, 2020).

It is imperative that people are attended to on the basis of the perception of a one-stop care system which resolves their problems. Similarly, it is also essential that professionals can pursue their careers with the conviction and confidence that they have the backing of an organisation which helps them to find solutions and does so following principles of equity, quality and efficiency.

R25. Address the weaknesses of the residential care model by achieving a balance in management between the health and social welfare ministries concerned with sufficient financial, human and material resources to meet healthcare needs while not medicalising responses to social needs.

COVID-19 has had a devastating impact on older people and people with co-morbidities such as diabetes, respiratory diseases and other chronic health conditions (Heymann & Shindo, 2020). The effect has been even more significant when these people were in long-term care facilities, especially in nursing homes, where there have been high transmission and mortality rates due to COVID-19. Experts from a number of countries identify common features in long-term care models focused on infrastructure, organisational models and human resource inputs as key points for improvement (Inzitari et al., 2020). Studies also link more nurses and better quality nursing home care outcomes with the potential to better control the spread of the novel coronavirus and reduce deaths (Li, Temkin-Greener, Gao, & Cai, 2020).

Nowadays the profiles of older people, people with disabilities and people with mental health conditions who are cared for in a residential setting are very different from what they were in the 1980s. Changes in the complexity of the health and social state of residents mean that the residential model has to be reformulated. Care for these people

should retain the social and health aspect and be based on the degree of complexity of the care they require. Residential services have to be reorganised to deliver varying levels of care depending on the social and/or health needs of each person.

Residential care needs to continue to evolve with a key role for nursing care and the inclusion of a range of health professions, close cooperation between primary and community social and health care and a holistic view of people. Under no circumstances should social problems be treated as medical issues or health needs be addressed by the social services system. In the current situation, health managers ought to engage more with providing comprehensive and integrated care for people who need residential and/or long-term care resources which deliver greater safety.

The roles of the residential model and the essential intermediate care model must be clarified, specified and marked out in order to avoid mistakes in interpretation and ensure that people receive care without having to worry about who is providing it.

The Health Advisory Council noted in previous reports the need for residential care to shift towards other options with specification of different levels of intensity of support, more healthcare-oriented depending on people's needs, and consistent with the community and local approach (Consell Assessor de Salut, 2019a).

R26. Draw up protocols and guidelines with explicit and unambiguous instructions, which include ethical standards for care in a health crisis and are aware, that prioritisation and, where necessary, rationing should ensure equity and avoid disparities in criteria when resources are limited.

One of the toughest experiences of the pandemic has been addressing the prospect of having to prioritise resources when they are limited and have to reach everyone who needs them. Public fears, media publications, social media discussions and other factors have led to social anxiety about the possibility of sudden and large-scale demands on critical resources, although partnerships and solidarity between sectors have made it possible to quickly alleviate shortcomings in devices and facilities.

This situation has drawn attention to protocols and guidelines, especially in terms of end-of-life care and the patient's age to rule out their access to a life support resource. These guidelines and protocols, most of which were available and used prior to the

pandemic under clinical standards to help professionals assign priorities in access to life support measures and avoid pointless further treatment for the sake of people's comfort, have come under the public microscope.

The Ministry of Health needs to ensure a fair, inclusive, quality, safe and efficient care model by putting in place strategies and procedures to encourage and facilitate evidence-based protocols and guidelines. This model should devise responses to people's needs by providing professionals with tools to help them make decisions in a health crisis. The protocols and guidelines ought to provide the system's professionals with explicit and unambiguous instructions which avert differences in action and regional variability in health outcomes.

These instruments should reflect the ethical aspects of healthcare and personal wellbeing that cut across the entire system. Rigorous, consensus-based protocols and guidelines must be drawn up to address issues such as prioritising resources in health crises when such resources are limited.

The public must be involved in the process of devising these protocols and guidelines in order to build in their experiences, preferences and expectations. Regular forums must also be set up for their participation in the debate on the ethical aspects of situations which shape people's health and wellbeing.

Communication campaigns are also needed to ensure transparency and make the protocols, guides and guidelines available in way that is understandable. This also prevents the feeling of lack of leadership and coordination in sensitive and cross-cutting aspects such as the application of best practices.

R27. Set up a forum for ethical thinking and discussion to make recommendations which will provide a model and guide for supporting people in institutions, especially in the end-of-life stage, in an emergency. The recommendations should ensure equity and be based on humanitarian and dignified death principles.

The COVID-19 crisis has been especially shocking in the case of older people whose "home" is a residential facility, a place where there is more vulnerability and added risk due to the dependency and co-morbidity of most of its users; elderly people, often with

different basic pathologies, varying degrees of dependency and needs, polypharmacy, etc. Against this backdrop and at the peak of the pandemic with limited resources, the age factor was also relevant as another criterion to be factored into decision-making and in many cases it meant that a hospital referral or access to a respirator was not indicated, not always with sufficient clarity or justification and giving rise to the idea that the elderly no longer count for the system and are excluded. On many occasions this criterion was undoubtedly the right one due to the basic situation of the sick person and the low expectations of survival, yet the fact of not having clear guidelines or unity of action has helped to generate a false picture that the elderly were not a priority.

As a result, many people have died in nursing homes and health centres alone, without any support from their families or loved ones, without being able to say goodbye, and the families have only been given information by phone and this has unquestionably led to difficult grieving. Moreover, people who have not fallen ill or who have recovered from COVID-19 have also endured considerable loneliness for months, unwarranted isolation in rooms with no contact other than the nursing home staff, with little or no information and feeling imprisoned in their homes even when the rest of the population was already easing and lifting lockdown. For the sake of protection, older people have probably been treated more unfairly than the rest of the population.

All this lived reality makes it essential to set up this multidisciplinary discussion forum with input from health and social care professionals and also in particular from experts in ethics. They need to lay down guidelines and suggestions which with utmost respect for people's dignity and independence and based on principles of justice and equity enable professionals to take a better and more humane approach in the nursing home setting in a future health crisis.

R28. Set up a group under the auspices of the Catalan Bioethics Committee which will oversee ethical issues in processing confidential data and information.

As has been mentioned in other recommendations, managing the health data monitored to track the pandemic has been an aspect noted by the public, who have been both open and cooperative in helping to track the epidemiological data. However, health information is highly sensitive and sufficient precautionary measures have to be taken

to ensure its security and confidentiality and that it is not used for purposes other than the initial one warranting its collection.

In the COVID-19 pandemic a lot of information has been given to the public about apps and other tracking mechanisms to seek their cooperation, but very little in terms of transparency, explanations of data management mechanisms, what they are used for, etc. Likewise, this whole issue takes on even greater prominence in the discussion about population screening with serology testing, tests for detecting the disease, accreditation of immunity, etc., and the government has a duty to ensure that any measure to be implemented is first vetted for ethical propriety and respect for people's basic rights.

Hence it is essential to have an agency or organisation tasked with this mission which is consulted about and analyses any measures to be taken in this area. While it is true that the Catalan Data Protection Authority is already in place, its role is restricted to reviewing compliance with the legal framework and not everything allowed by the regulation is always ethically acceptable or has to have its scope and proportionality weighed up.

A committee or group associated with the Catalan Bioethics Committee, whose members might also include data experts, would provide the confidence that data protection is safeguarded in legal terms and also that the measures to be put in place are ethical. Some years ago, the Catalan Bioethics Committee had an independent standing committee called the Processing Confidential Information Advisory Committee (CATIC). It is suggested that it should resume its operations with a revamped membership and a clearly specified mission and objectives.

R29. Set up venues or groups for discussion, decision-making and drawing up recommendations with all stakeholders, especially in a crisis, on the limits of healthcare intervention and the conflicts arising between individual rights and the common good or the health of the community.

The pandemic has stirred consciences and raised concerns about the limits of science, technology and ethics in human healthcare. At the same time, government actions to address the COVID-19 pandemic have led to conflicts between individual rights and

collective interests which often already come up against each other in a range of situations.

Against this background, an in-depth debate is needed about the limits of healthcare intervention among all the stakeholders involved in the protection and promotion of health, disease prevention and care for people with health needs: the public, professionals, managers, planners, experts in ethics and so on.

Agreed values need to be put in place to assess the ethical aspects of healthcare and public health interventions. From the standpoint of values, a balance can be found between individual rights and collective interests when taking measures which have a significant impact on everyone. Respect for the basic rights of individuals must be safeguarded by not taking measures which may be discriminatory or exclusionary while observing the principle of proportionality under all circumstances.

R30. Fast-track the implementation of strategies for transforming the system mapped out beforehand but yet to be put into practice, including prior review and inclusion of the experience gained during the crisis while avoiding duplicities.

The crisis has pushed countries' healthcare systems to the brink, forcing them to bring in major changes in a short period of time to deliver immediate responses to emerging needs. Some of these changes were not made from scratch. In many cases, the solutions which have been deployed over the past few months were based on strategic frameworks which had already been drawn up but not yet rolled out.

The backdrop of the healthcare crisis has made it possible to drive forward and reassert the need to implement changes envisaged beforehand and shared by the Health Advisory Council. The key components of the transformation include the participation of citizens in public policies, the participation of professionals in the system's strategies, planning and training for professionals, the role of primary and community care, the new public health model and social and health care integration.

The changes kicked off in the course of the crisis need to be pushed forward and further entrenched. This will involve implementing all the strategies and working towards a genuine makeover of the health and welfare system in order to deliver care which is

comprehensive and integrated, fair, inclusive, high quality, safe and efficient. All these changes will have to be matched by progress in funding, the service portfolio, research and innovation and public-private partnerships.

R31. Develop, test and implement the technological tools and options which support decision-making in governance, planning, management and care.

The COVID-19 pandemic has prompted faster progress in putting in place technological tools and options which were expected to take years to implement or develop and which have been crucial in managing the crisis. Examples include:

- Telemedicine to enable virtual (not face-to-face) care, thus avoiding physical meetings and reducing the risk of disease transmission.
- Artificial intelligence in studying the virus's behaviour, predicting new outbreaks, preventing its spread, protecting professionals, etc.
- Collaborative innovations which have brought together various sectors, the open source community, etc., with enormous potential for generating ideas and innovations.

In Catalonia, developing, testing and rolling out safe and evidence-based technology tools and options needs to be fostered. Technology should help to move forwards in equity and inclusiveness while addressing ethical issues and the provision of safe and efficient quality care. It is about building intelligence into the data without dehumanising care.

This, however, calls for high quality data and robust information systems and explicit advocacy for confidentiality, transparency and accountability in the use of the data. The main barriers to implementation such as interoperability and security problems also need to be overcome.

The technologies used in health and wellbeing for people need to be thoroughly assessed. Here it is crucial to restore the role of the Catalan Agency for Healthcare Quality and Evaluation (AQuAS) as an independent technology assessment agency

which recommends and guides the uptake of the best technologies for the health and welfare system.

A regulatory framework also needs to be put in place for accrediting and tailoring the payment system for mainstreaming telemedicine, artificial intelligence and collaborative innovations to improve the system's response to people's health and social needs.

R32. Draw up a framework to guide and organise research and innovation in an emergency to identify the needs to be addressed, how they should be met and how to fund the response.

The scientific community is used to international collaboration, and in the COVID-19 era it has dramatically stepped up its teamwork. An immense, unprecedented and joint effort has been made to work together and make headway in the search for treatments and vaccines on a worldwide scale. The pandemic has prompted sharing scientific knowledge, often for free, which has allowed collaborative research projects to move forwards and be approved and implemented quickly.

The world has realised that knowledge, teaching, research and innovation, all rooted in core bioethical principles, are crucial to addressing problems of this magnitude. The public, researchers, research bodies and institutions, regulatory agencies, ethics committees, etc. have joined forces for a common goal. This awareness has been the catalyst for the deployment of resources at all levels. In Catalonia, specific resources have been allocated immediately through competitive calls. This approach should be sustained well beyond the crisis.

The value of research and innovation and of the stakeholders involved should be underscored, yet the point also needs to be made that not anything goes. Quality control mechanisms for research in a health emergency have to be put in place. Discretion in research practices and conflicts of interest should be eschewed and the interests of the community along with the individual rights of the people involved in this research need to be upheld in their entirety. Working against the clock has meant that treatments have been fashioned as drugs have been tested using the trial-and-error method in the absence of alternatives. The results need to be sorted and translated into protocols and guidelines to ensure best practice and safeguard quality and safety.

Likewise, the results of health policy research and innovation should be reflected in planning and management guidelines based on the study of the effectiveness of measures taken to curb the pandemic (Nussbaumer-Streit et al., 2020; Park, Cook, Lim, Sun, & Dickens, 2020). The results and new questions will be used to set future research strands in planning, management, prevention and care in a health emergency. They should additionally provide the groundwork for shaping Catalonia's industrial network to ensure that solutions to health needs guide its operations.

The other side of the coin in this pandemic has been the neglect of many other aspects, areas and strands of health research which seemingly had no direct impact on the effects of COVID-19. Research geared towards tackling a crisis and its causes has to be combined with other research strands which are also priorities.

Catalan research centres have a great ability to adapt to innovation, and investment is needed to make them even stronger and more competitive and ensure that people's talent is channelled into research itself rather than into hunting for resources and defending their use.

R33. Drive and promote production capacity in lockstep with supply and early public procurement to ensure that materials and medicines are always available and set up agencies authorised to certify them.

The health emergency brought about by COVID-19 has led to a huge and unforeseen rise in demand for treatment, equipment and materials. This has been one of the main concerns and occupations of governments and healthcare officials during the toughest times of the pandemic. Shortages of essential materials and medicines have heightened the risks for professionals and the public and made it more difficult to curb the spread of the virus around the world.

Production and distribution capacity is crucial to ensure agencies and people tasked with curbing a crisis have the critical resources they need. Future scenarios suggest that structural provision must be made for the availability of essential materials and medicines to deal with potential outbreaks, epidemics and pandemics whatever the pathogen or causal factor (known or unknown).

A balance has to be found between compelling international collaborative production and driving domestic production. However, experience has shown that boosting domestic production capacity is fundamental in the face of competition which leads to market shortages and disproportionate price increases.

Catalonia's scientific expertise and industrial network mean it can lead domestic production solutions to meet its peoples' needs while also standing in solidarity with others insofar as possible. Knowhow, experience and production capacity should be catalysts to bolster existing production mechanisms and set up new ones.

The Ministry of Health will have to draw up a needs plan for treatments, equipment and materials and make it available to the business community to guide and drive responsible production which delivers appropriate responses in a crisis.

Safeguarding people's safety means safeguarding the production quality of materials and medicines. It is essential to have domestic agencies in place to approve and certify medicines and materials. Recent experience has demonstrated the need to fast-track approval and certification procedures and processes so they can be completed in the shortest possible time while still ensuring absolute quality and safety.

The healthcare authority should draw up a forecast covering various scenarios in terms of needs for materials, equipment, medicines and pharmaceutical products so their production can be matched to demand.

5. References

Chaudhry, R., Dranitsaris, G., Mubashir, T., Bartoszko, J., & Riazi, S. (2020). A country level analysis measuring the impact of government actions, country preparedness and socioeconomic factors on COVID-19 mortality and related health outcomes. *EClinicalMedicine*. https://doi.org/10.1016/J.ECLINM.2020.100464

Codagnone, C., Lupiañez-Villanueva, F., Liva, G., Folkvord, F., Bogliacino, F., Charris, R., … Reith, G. (2020). *Estudio sobre los efectos del Covid-19 y el confinamiento en Italia, España y Reino Unido. Primera ola*. Retrieved from https://open-evidence.com/wp-content/uploads/2020/05/20-05-10-COVID19-Open-Evidence-1-wave-ES.pdf

Consell Assessor de Salut. (2019a). *Orientacions sobre el model d'atenció a les persones amb necessitats socials i sanitàries*. Barcelona. Retrieved from https://canalsalut.gencat.cat/web/.content/_Professionals/Consells_comissions/consells_assessor_de_sanitat/cas-necessitats-socials-i-sanitaries.pdf

Consell Assessor de Salut. (2019b). *Recomanacions estratègiques sobre el model assistencial d'atenció primària i comunitària.* Barcelona. Retrieved from https://canalsalut.gencat.cat/web/.content/_Professionals/Consells_comissions/consells_assessor_de_sanitat/cas-apic.pdf

European Council. (2020). *Joint European Roadmap towards lifting COVID-19 containment measures*. Retrieved from https://www.consilium.europa.eu/media/43076/26-vc-euco-statement-en.pdf

Frazer, J. S., Shard, A., & Herdman, J. (2020). Involvement of the open-source community in combating the worldwide COVID-19 pandemic: a review. *Journal of Medical Engineering & Technology*, 1–8. https://doi.org/10.1080/03091902.2020.1757772

Global Preparedness Monitoring Board. (2019). *A world at risk: annual report on global preparedness for health emergencies*. Geneva. Retrieved from http://apps.who.int/iris

Heymann, D. L., & Shindo, N. (2020, February 22). COVID-19: what is next for public health? *The Lancet*. Lancet Publishing Group. https://doi.org/10.1016/S0140-6736(20)30374-3

Ho, C. S., Chee, C. Y., & Ho, R. C. (2020). Mental Health Strategies to Combat the Psychological Impact of COVID-19 Beyond Paranoia and Panic. *Annals Academy of Medicine, Singapore*.

Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., … Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*. Elsevier Ltd. https://doi.org/10.1016/S2215-0366(20)30168-1

Inzitari, M., Risco, E., Cesari, M., Buurman, B. M., Kuluski, K., Davey, V., … Bettger, J. P. (2020). International COVID-19 Palliative Care Guidance for Nursing Homes Leaves Key Themes Unaddressed. *Journal of Pain and Symptom Management*, 1–5. https://doi.org/10.1016/j.jpainsymman.2020.04.151

Lee, T. H. (2020). Creating the New Normal: The Clinician Response to Covid-19. https://doi.org/10.1056/CAT.20.0076

Li, Y., Temkin-Greener, H., Gao, S., & Cai, X. (2020). COVID-19 infections and deaths among Connecticut nursing home residents: facility correlates. *J Am Geriatr Soc*. https://doi.org/10.1111/jgs.16689

Lopez Casasnovas, G., & Casanova, M. (2020). *La malaltia de la sanitat catalana: finançament i governança*. PROFIT editorial.

Nittas, V., & von Wyl, V. (2020). COVID-19 and telehealth: a window of opportunity and its challenges. *Swiss Medical Weekly*, (150), w20284. https://doi.org/10.4414/smw.2020.20284

Nussbaumer-Streit, B., Mayr, V., Dobrescu, A. I., Chapman, A., Persad, E., Klerings, I., … Gartlehner, G. (2020). Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. *Cochrane Database of Systematic Reviews*, *2020*(4), CD013574. https://doi.org/10.1002/14651858.CD013574

Park, M., Cook, A. R., Lim, J. T., Sun, Y., & Dickens, B. L. (2020). A Systematic Review of COVID-19 Epidemiology Based on Current Evidence. *Journal of Clinical Medicine*, *9*(4), 967. https://doi.org/10.3390/jcm9040967

Piédrola Gil. (2015). *Medicina preventiva y salud pública. 12th Edition*. Retrieved from https://www.elsevier.com/books/piedrola-gil-medicina-preventiva-y-salud-publica/fernandez-crehuet-navajas/978-84-458-2605-8

Preventing and managing COVID-19 across long-term care services: Policy brief. (2020). Geneva. Retrieved from (WHO/2019-nCoV/Policy_Brief/Long-term_Care/2020.1). Licence: CC BY-NC-SA 3.0 IGO

Vieta, E., Pérez, V., & Arango, C. (2020). Psychiatry in the aftermath of COVID-19. *Reprinted from Rev Psiquiatr Salud Ment*, 2020. https://doi.org/10.1016/j.rpsm.2020.04.004

World Health Organization. (2020). *COVID-19 Strategy update*. Geneva. Retrieved from https://www.who.int/docs/default-source/coronaviruse/covid-strategy-update-14april2020.pdf?sfvrsn=29da3ba0_19&download=true

6. Members of the Health Advisory Council

Members of the Health Advisory Council:

- Manel Balcells Diaz, Chair
- Xavier Bonfill Cosp
- Joan Lluís Borràs Balada
- Carme Borrell Thió
- Pere-Joan Cardona Iglesias
- David Elvira Martínez
- Pilar Espelt Aluja
- Alícia Granados Navarrete
- M. Cristina Martínez Bueno
- Ramon Pujol Farriols
- Núria Terribas Sala

Technical Secretariat and drafting of the document:

- Iria Caamiña Cabo
- Elena Calvo Valencia
- Carme Planas Campmany