Review Article

How to anticipate and control possible future health crises through foresight approaches using the COVID-19 pandemic crisis?

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Abstract

Prospective studies have evolved towards a more integrated, complex, and diachronic way of thinking about the future. What is the future? It is a set of possibilities, delimited by what we think is impossible (limits of plausibility) and by the difficulty of estimating the degree of plausibility of an event in a V.U.C.A. period. The term V.U.C.A. refers to the four characteristics that reflect the world according to military thinking: Volatility; Uncertainty; Complexity; Ambiguity. The COVID-19 crisis is an example of V.U.C.A with an uncertain situation. Foresight is a discipline that allows us to understand the forces at work in the construction of the future. Resolutely oriented towards action, it aims to enlighten the choices of the present by exploring possible futures. Strongly linked to strategy, it allows the determination of a desirable future, a vision, and the implementation of the means to achieve it. Foresight is exploratory (of possible futures), normative (creating a chosen future), quantitative (using statistical data), and qualitative (using survey data). Foresight does not foresee, it anticipates. Prospective approaches could be used more in particular in the field of health to define more or less pessimistic scenarios in order to define strategies of anticipation of futures that we do not want to see happen. The foresight for pandemics and epidemics initiatives can create a space for dialogue and bring together diverse perspectives and lived experiences.

We emphasize in this communication the potential benefits and outcomes of foresight thinking, such as improved resilience, better resource allocation, and effective response strategies.

The COVID-19 crisis, an example of V.U.C.A world

From a search for certainties about the future (forecasting), and in response to the growing complexity and uncertainties of subjects and issues, prospective studies have evolved towards a more integrated, complex, and diachronic way of thinking about futures.

Thinking about the future allows us to get out of the daily routine and short-term objectives and to give ourselves the capacity to be actors of our future. This approach is not always in the minds of decision-makers as our environment and education do not put us in a position to think easily about different futures. Thinking about the future forces us to disrupt our present [1].

What is the future? It is a set of possibilities, delimited by what we think is impossible (limits of plausibility) and by the difficulty of estimating the degree of plausibility of an event in a V.U.C.A. period. The term V.U.C.A. refers to the four characteristics that reflect the world according to military thinking: Volatility; Uncertainty; Complexity; Ambiguity. It aims to describe an uncertain world [2].

The COVID-19 crisis is an example of V.U.C.A. situation [3-5]: Volatility (COVID-19 has spread at an impressive rate around the world ; Uncertainty (for a long time we did not have vaccines or effective curative treatment, we have suffered the number and intensity of the "waves", we do not know if the barrier measures or other administrative measures are still necessary, if the virus will mutate...) ; Complexity (Each state

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has managed this pandemic in its own way, which has not allowed for a global, international management of the crisis The dimensions to be taken into account (sanitary, economic, political, social, environmental…) have made complex the analysis of the situation and the search for solutions ; Ambiguity (The diversity of sanitary, economic and social interests have generated paradoxical situations, such as the obligation for students to wear masks in class while they are exempted at lunch, the obligation to respect the one meter distance that cannot be respected in public transport, a qualification of non-essential products that is based on criteria that are not necessarily logical for all).

The contribution of foresight to anticipate and control futures

Foresight is a discipline that allows us to understand the forces at work in the construction of the future. Resolutely oriented towards action, it aims to enlighten the choices of the present by exploring possible futures. Strongly linked to strategy, it allows the determination of a desirable future, a vision, and the implementation of the means to achieve it. Foresight is indeterministic and humanistic. Its objective is to solve new problems, even before they arise, if possible, thus making it possible to build a better world. Its general method is to analyze, understand and produce the forces of change. To do this, it uses the collective intelligence of the world. Foresight is exploratory (of possible futures), normative (creating a chosen future), quantitative (using statistical data), and qualitative (using survey data). Foresight does not foresee, it anticipates. Anticipation is not a goal in itself but an intermediate step that must lead to the development of levers for action. The future depends in part on the decisions we make here and now. Anticipating a catastrophe allows us, if not to avoid it, at least to limit its human cost. In a dialectic of the present and the future, the anticipating subject acts on the anticipated object.

Foresight uses different successive approaches as an example: 1) The "Understand-Anticipate-Propose" meta-method has the merit of simplicity and the ability to integrate all the tools of French and foreign foresight [6,7]. It consists of three distinct cognitive steps: understanding, anticipating, and proposing action. Each of these stages has its own characteristics for thinking about the future and can produce a specific type of study (such as a diagnosis for comprehension, a scenario for anticipation, and a strategic analysis for the proposal for action). However, it is the integrated process, in its entirety, that gives meaning to future thinking; 2) The morphological analysis was subsequently incorporated into the scenario methodology.

Thinking about the future to anticipate health crises through the example of the COVID-19 pandemic

Foresight is action-oriented. Central to foresight is participatory ownership, to embrace a variety of alternative futures imagined through active engagement in scenario planning. In the business world, future-preparedness depends on corporate foresight, with striking evidence of the superior performance of "future-prepared" firms [8,9]. In

this context, the Scientific Advisory Group for Emergencies (SAGE) published in February 2022 medium-term scenarios to illustrate the possible evolution of the COVID-19 pandemic in the UK. The four medium-term scenarios (12 months - 18 months) scenarios proposed, positioned on a scale of "Best - Optimistic - Pessimistic - Worst", were built exclusively around the evolution of the virus components and its circulation [10]. In March 2021, the International Science Council (ISC), in partnership with the WHO and the United Nations International Strategy for Disaster Reduction (UNDRR), built three scenarios positioned on a "Best - Probable - Worst" scale [11]. Those scenarios take into account more diverse factors of change such as the economy, governance, geopolitics, society, environment, and science and technology. In France, the French High Council for public health (HCSP) defined five different COVID-19 crisis scenarios: 1) living with the virus; 2) a pediatric crisis; 3) the normality of the crisis; 4) return to an epidemic situation similar to that of March 2020 and 5) the ultra-crisis [12]. Twenty-eight global guidelines were described to help public decision-making to anticipate the further evolution of the COVID-19 pandemic in France.

What could be tomorrow's future and crises to face the transition from a world 1.0 to a world 2.0 by crossing the uncertainties linked to the V.U.C.A. period?

The term VUCA was coined almost 30 years ago by management advisors and popularized by military strategists. This concept dominated the business world and boardrooms during the last 20 years. It has been useful to describe the times we have lived in so far and helped us to understand the first impact of the pandemic situation. Is the new acronym B.A.N.I [13] with B for Brittle, A for Anxious, N for Nonlinear, and I for Incomprehensible about to replace V.U.C.A.? This new world corresponds to situations in which conditions are not simply unstable, they are chaotic. Situations in which the outcomes are not simply difficult to predict, they are completely unpredictable. The incomprehensible, finally, occurs when a non-linear and interconnected crisis, like a pandemic, borders on the absurd. When neither data nor explanations allow us to make sense. Policymakers try to find answers but the answers don't make sense. At this ultimate stage, it is difficult to distinguish the signal from the noise. This incomprehensible situation would be the result of the information avalanche. The B.A.N.I. world would be at the heart of the artificial intelligence systems we are building.

Collective pandemic preparedness

In the foresight initiative, core pillars and key themes have been identified that offer practical ways forward. Trust, solidarity, and equity, as well as sustainable development, are the principles and values that determine our future actions. These pillars are crucial to guiding preparedness for future pandemics. In addition, the process brought to light five key themes [9]. Each theme offers an area of focus that collectively ensure pandemic preparedness. The five themes identified by the WHO are the followings:

1. Science, policy, and environment. A sound base of scientific evidence must be developed and communicated

for transparent translation of knowledge into policy and practice. A One Health approach should be higher on the agenda in this interconnected world, where the health of people is closely related to the health of animals and to our shared environment.

2. People, communication, and education. Engagement for preparedness includes fostering trust and actively engaging communities to protect health and well–being. Foresight shows the need to recognize, respect, and learn from the knowledge held in various cultural, religious, generational, and other groups. It is particularly important to involve youth, the owners of the future. Education empowers people to choose and act on safe behavior.

3. Economy, infrastructure, and systems. Strengthened, resilient systems are necessary to respond to shocks, both known and unknown, to save lives and livelihoods while ensuring essential services in all sectors. Organizations and institutions must be designed for a desirable future and funded accordingly.

4. Technology and innovation. Technology is important for realizing ambitions. We must harness innovation for equity from the global to local level.

5. Leadership and collaboration in preparing for future pandemics. We must champion equity, foster trust and uphold transparency and accountability from the highest levels of decision–making. Sharing data, knowledge, and solutions is crucial to ensuring global solidarity.

Conclusion

In stable contexts, we can rely on the tried and true practices of planning and analysis. When the future, not to mention the present, is uncertain and unpredictable, we must make a mindset shift toward preparing and entering a state of readiness. Leaders in sanitary or industry environments can use a prospective approach to anticipate difficulties and for decision–making. Prospective approaches could be used to define more or less pessimistic scenarios in order to define strategies of anticipation of futures that we do not want to see happen (Natural disasters, global health crises, supply chain disruption such as drugs and vaccines, labor disputes, technology breach, geopolitical instability, and ethics Scandal). Sanitary future crises could probably be environmental and climatic (water, exposure of populations to toxins/pesticides, global warming), military or nuclear (armed conflicts, overexploitation..). For example, with climate change and the risk of drinking water shortages for the most vulnerable populations, particularly in developing countries, governments should anticipate strategies for environmental water monitoring and epidemiological surveillance of cases of hepatitis A, typhoid, cholera, and polio, in order to identify logistical scenarios for possible vaccination campaigns if the epidemiology of these diseases changes.

We would not have the excuse of inexperience that was used in the spring of 2020 for infectious next pandemics. Have we entered an era of epidemic pandemics? Anticipation and foresight are more than ever a responsibility, the nature of which is indissolubly ethical and political.

Key messages and the way forward

The foresight for pandemics and epidemics initiatives can create a space for dialogue and bring together diverse perspectives and lived experiences. The foresight approach offers a reflection on the complex reality through which we all move and provides an opportunity for thinking ahead about the actions that must be taken now to achieve the world we want in the future. The Foresight dialogue confirmed that advancing the sustainable development goals will strengthen epidemic and pandemic preparedness in our interconnected world. Foresight allows us to imagine approaches grounded in equity, trust, and solidarity. In doing so, we become better prepared to detect and respond to future threats. While some say that "hindsight is 20/20", we must now make every effort to develop foresight to bring to the world a safer, more equitable, better–prepared future.

References

1. Goux-Baudiment F. A Foresight Overarching Method: Looking for a Way to Bridge the Gap. World Futures Review. 2016; 8:12-23. doi:10.1177/1946756715627372.

2. Center UAH and E. Who first originated the term VUCA (Volatility, Uncertainty, Complexity and Ambiguity)? - USAHEC Find your answer. Link: Who first originated the term VUCA (Volatility, Uncertainty, Complexity and Ambiguity)? - USAHEC Find Your Answer (libanswers.com) (Accessed June 2023).

3. Murugan S, Rajavel S, Aggarval AK, Singh A. Volatility, Uncertainty, Complexity and Ambiguity (VUCA) in Context of the COVID-19 Pandemic: Challenges and Way Forward. International Journal of Health Systems and Implementation Research 2020; 4(2). Link : Volatility, Uncertainty, Complexity and Ambiguity (VUCA) in Context of the COVID-19 Pandemic: Challenges and Way Forward | International Journal of Health Systems and Implementation Research (ahsas-pgichd.org) (Accessed June 2023).

4. Neeraj S. Leading in a VUCA World: Lessons from Covid-19. IUP Journal of Business Strategy 2021;18: 2:49-54. Link The IUP Journal of Business Strategy | Magazines | Journals | Books and Articles (iupindia.in) (Accessed June 2023).

5. Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention. JAMA. 2020 Apr 7;323(13):1239-1242. doi: 10.1001/jama.2020.2648. PMID: 32091533.

6. Goux-Baudiment F. "De l'attitude à l'action prospective : une méta-méthode " in Guyot Jean-Luc, Brunet Sébastien (Eds), [Constructing futures - Epistemological and methodological contributions to the foresight process], Namur : Presses Universitaires de Namur. 2014; 93-148.

7. Lepelletier D, Souhard C, Chidiac C, Chauvin F, Mansour Z. Syndemic analysis of the pandemic COVID-19 crisis: a multidisciplinary "Understand-Anticipate - Propose" meta-method. Arch Public Health. 2022 Aug 19;80(1):193. doi: 10.1186/s13690-022-00951-x. PMID: 35986363; PMCID: PMC9388984.

8. Pir S. The importance of foresight: Why intuition and imagination will be critical in the future of work. Forbes, 25 March 2019 (https://www.forbes.com/sites/sesil-pir/2019/03/25/the-importance-of-foresight-why-intuition-and-imagination-will-be-critical-in-the-future-of-work/?sh=13f5d40d79ee).

9. WHO. A WHO Foresight Initiative: Imagining the future of pandemics and epidemics in the next 5 years. Link: WER9708-55-59-eng-fre.pdf (who.int) (Accessed Juin 2023).

10. Covid-19 Medium-Term Scenarios, Scientific Advisory Group for Emergencies, Feb. 2022. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1054323/S1513_Viral_Evolution_Scenarios.pdf (Accessed June 2023).

11. Skegg D, Gluckman P, Boulton G, Hackmann H, Karim SSA, Piot P, Woopen C. Future scenarios for the COVID-19 pandemic. Lancet. 2021 Feb 27;397(10276):777-778. doi: 10.1016/S0140-6736(21)00424-4. Epub 2021 Feb 16. PMID: 33607000; PMCID: PMC7906624.

12. High Council for public health (HCSP). Report on foresight and points of vigilance in times of health crisis. Link: https://www.hcsp.fr/Explore.cgi/avisrapportsdomaine?clefr=1236 (Accessed June 2023).

13. BANI – How To Make Sense Of A Chaotic World? (Accessed June 2023).