

The governance of data (re)usability: what do we learn from the SARS-CoV-2 pandemic.

It has become clear in this pandemic that in addition to epidemiological and microbiological data (the first public health priority!) a range of additional data is critically needed for informing control policies and protecting society against unnecessary and impairing economic interventions.¹ A few examples that will be broadly recognized are: geo-data that makes visible the overall movement of people and pathogens, quantitative data about hospitalization and burden on Intensive Care capacities, qualitative data about (un-)successful treatment and burden of disease, but also social, cultural, economic and environmental data for surveilling the distribution and stratification of infection as well as the understanding of emergence and transmission routes.^{2,3,4}

Since the enormous progress of technologies and capacities for smart data warehousing, many of these adjacent data are available in existing databases or can be gathered through innovative platforms.⁵ But efforts to open them up, or the actual development for pandemic surveillance and control, encounters many legal, ethical and economic uncertainties, causing critical delays or full-stop barriers. The development of track and trace apps for the early warning of individuals is but one relatively small example.⁶ In this regard the lesson already learned is that many, if not all countries struggle with the same search for legal basis and governance structure, to open up these rich data for the protection of the public's health.⁷ In the future, this available adjacent data and information should be recognized and shared as essential for control-policies and decisions on countermeasures, in addition to epidemiological and microbiological data.

We must however realize, that to date even the sharing of these traditional epidemiological and microbiological data during global public health crises is not clear-cut. The key legal framework for global sharing during public health emergencies of international concern are the International Health Regulations (IHR) that define the obligation for Member States to share with WHO, within 24 hours, all relevant "public health information". Nevertheless, among the list of data types the biological materials and sequence data of pathogens are not mentioned and are heavily disputed.⁸ The COVID-19 pandemic should lead us here to a fast and clear decision: although we recognize the complexity of this endeavor, we fully support the calls for extending the obligations under the IHR, and make the rapid sharing of these pathogen resources irrefutably obligatory.

¹ Heymann, D. L. (2020). Data sharing and outbreaks: best practice exemplified. *The Lancet*, 395(10223), 469-470.

² Lipsitch, M., Swerdlow, D. L., & Finelli, L. (2020). Defining the epidemiology of Covid-19—studies needed. *New England journal of medicine*, 382(13), 1194-1196.

³ Bedford, J., Enria, D., Giesecke, J., Heymann, D. L., Ihekweazu, C., Kobinger, G., ... & Ungchusak, K. (2020). COVID-19: towards controlling of a pandemic. *The Lancet*, 395(10229), 1015-1018.

⁴ Allam, Z., & Jones, D. S. (2020, March). On the coronavirus (COVID-19) outbreak and the smart city network: universal data sharing standards coupled with artificial intelligence (AI) to benefit urban health monitoring and management. In *Healthcare* (Vol. 8, No. 1, p. 46). Multidisciplinary Digital Publishing Institute.

⁵ Blomberg, N., & Lauer, K. B. (2020). Connecting data, tools and people across Europe: ELIXIR's response to the COVID-19 pandemic. *European Journal of Human Genetics*, 1-5.

⁶ Lucivero, F., Hallowell, N., Johnson, S., Prainsack, B., Samuel, G., & Sharon, T. (2020). Covid-19 and Contact Tracing Apps: Ethical challenges for a social experiment on a global scale. *Journal of bioethical inquiry*, 1-5.

⁷ McKee, M., van Schalkwyk, M. C., & Stuckler, D. (2019). The second information revolution: digitalization brings opportunities and concerns for public health. *European journal of public health*, 29(Supplement_3), 3-6.

⁸ Rourke, M., Eccleston-Turner, M., Phelan, A., & Gostin, L. (2020). Policy opportunities to enhance sharing for pandemic research. *Science*, 368(6492), 716-718.

In addition to that and using the momentum, the global community should also consider in the same IHR framework, to call upon all nations to open up and regulate the use of essential community data in a FAIR and equitable way, for the surveillance and control of epidemics and pandemics, as is shortly also being proposed in new EU legislation on cross border health threats.⁹

⁹ Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on serious cross-border threats to health and repealing Decision No 1082/2013/EU; Brussels, 11.11.2020, COM(2020) 727 final, 2020/0322 (COD)