



## Integrating Science into Policy – Which Systems Work Best?

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A central challenge in combatting infectious diseases lies in integrating scientific knowledge into policymaking, so that decisions on public policies are informed by scientific insights<sup>1,2</sup>. Public policy research is devoted to the analysis of policymaking processes, particularly the relevant actors who influence public policies and the structures within which they do so. In this regard, several questions arose during the COVID-19 pandemic: Which scientific policy advisory structures are best suited to ensure functioning science-policy interactions in public health crises? In what way do certain policy advisory systems lead to better outcomes? How should we prepare for the next public health crisis?



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In our project, we compare different policy advisory systems across countries<sup>3</sup>. We analyze how different structures of science-policy relations played out in the pandemic to draw lessons for future public health crises. In doing so, we provide a systematic overview of policy advisory systems and scrutinize the dynamics that evolved during the pandemic by relying on document analyses, surveys, and expert interviews. This has produced the following key insights so far.

### **There is no one-size-fits-all structure of science-policy interactions.**

Policy advisory systems vary, and so do political systems. What works in one country does not necessarily work in another, because the cultural and institutional factors are different. In the Swiss context that is shaped by direct democracy, consensus, and federalism, policy advisory systems are built differently than, e.g., in France, where decision-making is more centralized and based on hierarchical relations rather than negotiation. Therefore, when thinking about how to design a policy advisory system to ensure functioning science-policy relations, it is necessary to consider the context in which it is embedded.

In Germany, the Robert Koch Institute (RKI) as the responsible public agency took a major role in providing scientific policy advice directly to the government, but the Länder governments often deviated from the nationally formulated recommendations and decisions, especially as the pandemic was politicized in the run-up of the federal election 2021. The insufficient fit of this advisory structure to the German federal system and multilevel governance structure resulted in a subnational fragmentation of scientific advice and at times uncoordinated responses to the pandemic where the integration of scientific advice was not apparent. In the UK, the emergency system of the Scientific Advisory Group for Emergencies (SAGE) “clicked into action” (quote from a SAGE member) and resembled the system of a strong separation of scientific advice and decision-making that is characteristic of the UK’s administrative system. Hence, the way in which scientific advice was integrated into policymaking can be evaluated as more functioning in the UK than in Germany.

### **The linkage of systems to outcomes is not straightforward.**

However, this comparison already indicates that there is no straightforward relationship between a functioning system of policy advice and the outcomes of crisis management. While the case fatality in Germany was 0.4 %,



it is five percentage points higher in the UK<sup>4</sup>. In Switzerland, the case fatality was even lower than in Germany, with 0.3 %, although the COVID-19 Science Task Force was created ad-hoc and outside the usual consensual structures of the Swiss political system. These numbers only serve to illustrate the complexity of linking advisory systems and the integration of scientific advice into public policymaking. It is imperative to acknowledge that multiple indicators (not just case fatality) must be considered to evaluate the outcomes of pandemics, and that science-policy interactions are one among many factors that influence such outcomes. One of these other factors is whether citizens follow the adopted measures, which according to our data is influenced by trust in scientists. Trust in scientists, in turn, is not only related to how citizens perceive the policy advisory system and the role of scientists in informing public policies. Furthermore, much depends on an adequate implementation of measures, which is independent of the policy advisory system in place.

### How should we prepare for the next public health crisis?

We cannot rely on a perfect type of policy advisory system to effectively manage public health crises. Nevertheless, we can learn something about the integration of scientific advice into policymaking for the future.



Prof. Dr. Fritz Sager

Firstly, when designing the structures for science-policy interactions, they should fit the pre-existing political and administrative system to ensure a smooth functioning of science-policy relations. Is decision-making and implementation centralized or decentralized in subnational units? Are decisions taken hierarchically or through consensus, which suggests a greater need for debate in science-policy relations? The policy advisory system in place for crises should account for these structures.

Secondly, only because these structures work, they do not produce good outcomes by default<sup>5</sup>. Both the implementation of policy measures and the compliance with measures by citizens influence the outcomes of public health crisis management. Therefore, in times of crisis, we should pay attention not only to a functioning science-policy interaction, but also to maintaining the trust that citizens have in public policies. To conclude: instead of focusing merely on institutional preparedness for pandemics, we should place more emphasis on the pre-existing structures of political and policy advisory systems and also consider dynamics at the individual level, including perceptions of science-policy relations.

#### References

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<sup>2</sup> Schlaufer, C., & Hornung, J. (2022). Was kann evidenzbasierte Politik und was nicht? «décodage» – Blog der SAGW. [🔗](#)

<sup>3</sup> Hadorn, S., Sager, F., Mavrot, C., Malandrino, A., & Ege, J. (2022). Evidence-Based Policymaking in Times of Acute Crisis: Comparing the Use of Scientific Knowledge in Germany, Switzerland, and Italy. *Politische Vierteljahresschrift*, 63(2), 359-382. [🔗](#)

<sup>4</sup> Johns Hopkins University and Medicine, Coronavirus Resource Center [🔗](#)

<sup>5</sup> Hornung, J., & Sager, F. (2023). The non-use of evidence in the adoption of a sugar-sweetened beverage tax in OECD countries. *European Journal of Public Health*, 33(4), 659-664. [🔗](#)