Making policy decisions under uncertainty

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The COVID-19 pandemic has exposed policymakers to high levels of uncertainty: governments simply do not have enough information to know what to do. The result is changing policy decisions mid-course: Britain reversed its strategy of building herd immunity when a new estimate put the likely death toll from this strategy at 250,000 people; America's Centres for Disease Control initially discouraged wearing of face masks by citizens but has since reversed its course. Policy changes like these have risked policymakers' credibility, as well as their citizens' compliance.

The uncertainty is far worse for developing country policymakers. Developed countries have more resources to spare if their decisions do not lead to desired outcomes. Trust in governments tends to be higher, and data is also better. While policymakers in developed countries have benefited from sophisticated analysis based on data shared by large firms, the best bet in developing countries are small surveys, or projections which typically use mortality data from elsewhere and assumptions to provide local estimates. Even core health data, such as the rate of infections, might be significantly understated: across Africa, only 685 tests have been carried out per million people, while Italy has conducted nearly 37,000 per million. If policymakers in developed countries are making decisions in fog, their counterparts in developing countries are doing so in the dark.

For policymakers at the city level, decision making is even harder. While the spread of the pandemic is deeply spatial by nature, local governments often lack the authority to act to contain the virus. For cities that are led by parties in opposition to those at the national level, authority is prone to re-centralisation. When Delhi's local government attempted to reserve hospital beds exclusively for its residents, the decision was quickly overruled by the central government-appointed governor. Data sharing is also a challenge: even more tricky than sharing between various national government departments is sharing with sub-national tiers.

Making policy decisions under this level of uncertainty requires four key steps:

1. *Distinguish between questions that can be answered without further information and those which cannot.*

Some policies make sense no matter what new information comes in — what economist Stefan Dercon calls no-regret policies. As Michael Callen and Edward Glaeser also suggest, encouraging hygiene is one such policy: across sub-Saharan Africa, only a quarter of people have access to basic handwashing facilities including soap and water. These investments are important regardless of the pandemic, but more so given the increased importance of handwashing to limit the spread of the COVID-19 virus.

Other policies involve significant trade-offs — costs and benefits — which are currently poorly measured. For these, the first policy response is to gather information that would enable a decision to be taken, as far as possible. Since capacity is limited, all such efforts should be driven by the specific policy choices that need to be made. For example, through combining easy-to-access administrative datasets with a pre-existing socio-economic survey, policymakers in Pakistan have been able to target cash transfers to the poorest. Cape Town uses live data from funeral homes to quickly identify areas with excessive deaths in the city. Where possible, technology can also help: Medellín asks residents who need financial support to register their vulnerability, as well as their symptoms, online — nearly 90 percent of the residents have.

Some questions cannot be answered at all at present: for example, how long will the virus continue to spread? When will it end? How many people will lose their lives? — all of these can only be known ex-post. Until then, while we may be able to guess, 'we don't know' is the only right answer.

2. *Uncertainty requires experimentation: it is learning from doing.*

When 'we don't know' is the only right answer, it is unlikely that our first attempt at solving a problem will be correct. In this case, the most appropriate response is to use the best information available and quickly learn from what *is* working and what *isn't*.

This requires experimentation — varying activities, locations, and time periods. As the costs and benefits of lockdowns is unclear, our understanding of lockdowns can benefit from such localised experimentation. On the one hand, China's decision to lockdown the city of Wuhan may have reduced the infection rate in other Chinese cities by about 65%. On the other hand, emerging evidence shows that lockdowns in developing countries lead to significant income losses and reduced food consumption. In these cases, targeted lockdowns that impose restrictions based on local risk profiles might work better.

With experimentation, we need to rapidly monitor, evaluate, and adapt. When Madrid shut down schools and offices and asked people to stay home, many people instead congregated at parks. Only after seeing this did the city adapt and closed its parks. The city of Durban has daily "war room" meetings to undertake and evaluate decisions in the city.

Models can help, but they are no more reliable than the numbers fed into them. The epidemiological model being used by the American government is repeatedly wrong — *Vox* has reported that the actual death numbers fell outside the range it predicted 70 percent of the time. While other models have been more accurate, their importance lies in understanding what they can do: provide a range of outcomes likely under certain conditions. As more data is collected and fed into models and assumptions are tweaked based on real-world evidence, models become better. Until we have that data, they are best used with caution.

3. Communicate with citizens so that they can make good choices.

Policymakers need to communicate two big messages:

i. There are serious risks associated with COVID-19, and that by their own actions, people can reduce these risks to themselves and to others.

ii. Policymakers do not yet have enough evidence, and so may well need to revise policies as they learn more: people should stay alert to further advice on what to do.

The authorities must balance the need to reassure — which is very important to avoid panic — with the need to avoid losing credibility as events unfold in unexpected ways. We know from past shocks, such as from the Ebola epidemic in West Africa, that misinformation can have a disastrous impact on containment efforts. We are seeing some of this play out right now: across cities in Pakistan, rumours and misinformation have fuelled incidents of patients' families attacking hospital staff.

More worryingly, some countries have outright stopped sharing information with people: Tanzania stopped sharing data on the spread of COVID-19 six weeks ago and has just announced that the country is free of any cases, even though border testing of Tanzanian truck drivers by Uganda indicates otherwise. Countries which have clear and consistent information are doing better. Vietnam stands out: the government communicates protection measures via text messages, and posters across Vietnamese cities highlight the seriousness of the virus — so far, Vietnam has prevented any large-scale community outbreak and the death toll is at zero.

4. The messenger is as important as the message.

As far as possible, decisions need to be taken close to the communities and people who understand their specific constraints. In South Sudan, researchers note that localised priorities are competing with the threat from coronavirus, and the messaging needs to be tailored to account for these other challenges. In China, devolvement went even further, with some cities actively recruiting their residents into containment measures. Guangzhou alone hired as many as 80,000 of its residents to conduct community patrols to ensure compliance.

Working with local community leaders can also help — as Freetown Mayor Aki-Sawyerr put it, “it is not only the message, but also the messenger”. By working with local allies, policymakers can leverage greater trust in their decisions. During the Ebola epidemic in Liberia, door-to-door community outreach with community leaders was incredibly effective in increasing the uptake of preventative measures. Not working with community leaders can undermine containment efforts: in the Punjab province of Pakistan, nearly half of all urban mosques surveyed still conducted congregational Friday prayers, despite government asking them not to. But when the surveyors provided them with information on the pandemic, around 8 out of 10 mosque leaders said they would consider postponing congregational prayers.

Making policy decisions under this level of uncertainty is not easy. The best we can do is to restructure the way we think about it: recognise the limitation of the available evidence and experiment with different policy decisions, actively learn from the outcome, devolve decisions to local governments who best understand the context, and clearly communicate the information to the people.

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