

Public health decisions in the COVID-19 pandemic require more than 'follow the science'

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ABSTRACT

Although empirical evidence may provide a much desired sense of certainty amidst a pandemic characterised by uncertainty, the vast gamut of available COVID-19 data, including misinformation, has instead increased confusion and distrust in authorities' decisions. One key lesson we have been gradually learning from the COVID-19 pandemic is that the availability of empirical data and scientific evidence alone do not automatically lead to good decisions. Good decision-making in public health policy, this paper argues, does depend on the availability of reliable data and rigorous analyses, but depends above all on sound ethical reasoning that ascribes value and normative judgement to empirical facts.

INTRODUCTION

Since the COVID-19 pandemic began, an enormous amount of empirical data has become available. There seem to be numbers and quantitative indicators about everything that is COVID-19 related. Although empirical evidence may provide a much desired sense of certainty amidst a pandemic characterised by uncertainty, the vast gamut of available COVID-19 data, including misinformation, has instead increased confusion and distrust in authorities' decisions.¹ One key lesson we have been gradually learning (or perhaps relearning) from the COVID-19 pandemic is that the availability of empirical data and scientific evidence alone do not automatically lead to good decisions. Data and science are tools that are necessary yet not sufficient for good decisions. Good decision-making in public health policy, this paper argues, does depend on the availability of reliable data and rigorous scientific analyses, but depends above all on sound ethical reasoning that ascribes value and normative judgement to empirical facts. This is hardly a novel argument. However, in stating perhaps the obvious, this paper opens up a way of challenging an overly simplistic view of the 'follow the science' imperative by revealing the long-standing—yet currently neglected—policy question on the complex relationship between ethical reasoning and empirical data. Although this revelation may not lead to more certainty in decision-making, more knowledge about the complexity of such relationship may contribute to addressing the present confusion and distrust in authorities' decisions.

BACKGROUND PROBLEM: LOADS OF DATA, TOO LITTLE CLARITY

There has been a deluge of empirical data on the different aspects of the pandemic and its harmful

effects.^{2–6} Multiple stakeholders produce and share COVID-19 information, including several non-experts.⁷ Experts, funding agencies, scientific journals and journalists have 'covidized'⁸ their activities, that is, shifted towards urgent COVID-19-related research, distorting the impact of the pandemic and probably increasing the risk of scientific errors.^{9–10} Arguably, all stakeholders have the responsibility to communicate COVID-19 information accurately. By 'accurate communication,' we mean truthful, evidence-based, consistent and timely shared communication.¹¹ However, the reality is that COVID-19-related communications often feel untruthful, random, inconsistent and opportunistically shared.^{12–15}

One reason for these feelings lies in the changing nature of COVID-19 policies (eg, whether masks should be worn or not; whether borders should be closed or not; whether asymptomatic patients should be quarantined for spreading SARS-CoV-2 virus or not and whether non-essential businesses should be closed or not). For instance, after months of recommending that only symptomatic people or those caring for the sick wear a face mask, the US Centers for Disease Control and Prevention changed its position in early April 2020, based on emerging scientific evidence of asymptomatic viral transmission, recommending that everyone wear a face mask in public spaces.^{16–18} If shifting scientific evidence and opinions have often grounded changing guidance in COVID-19 public policies, this communication process between the scientific community and policy-makers has not always been accurately shared with (ie, contextualised and explained to) all other stakeholders.^{19–21} Had public health authorities and policy-makers communicated accurately by truthfully sharing what they knew and did not yet know about the SARS-CoV-2 virus and the COVID-19 disease, perhaps the fluctuating COVID-19 public policies would not have felt erratic and at times arbitrary. Were they accurate and transparent in their communications, perhaps people could have better understood when shifting evidence led to a new policy direction without forming the impression that those changes were whimsical or defective, and without eroding trust in institutions and public officials. This erosion in trust has reached the point of intensifying social divisions and polarisation, as illustrated not only by the face mask controversy in the USA, but also by the close-the-bars-and-keep-the-schools-open controversy in New York City.^{19–25} Furthermore, were the media (particularly social media) committed to truthful communications, perhaps the present infodemic (namely, the wide and rapid spread of misinformation and lies) would not have hit the world as



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severely. However, the reality is that COVID-19 is indeed the first post-truth pandemic, where 'a deep scepticism about the very idea that truth exists' prevails,²⁶ and where misinformation and confusion reign, worsening the effects of the pandemic.^{7 27 28}

One might be tempted to think here that if only the vast gamut of available COVID-19 data had not led to misinformation, confusion and distrust in authorities' decisions, then good public health decisions would have been made during this pandemic. However, this is not necessarily the case.

DECISION-MAKING UNDER VAST UNCERTAINTY

To explain why, let us picture a different, ideal scenario. Imagine open, transparent, high-quality data available for scientists to do their work, assess public health interventions and progress, and define research priorities clearly. Imagine also that media and public health authorities had communicated accurately and truthfully about existing evidence, risks and the limits of knowledge. Even in this ideal scenario, however, public-health authorities would still have to deal with many layers of complexity in their decision-making. And not the least of which is to understand and characterise the plausible scenarios associated with their decisions. These make the discernment about what is (and is not) a good public health decision less obvious.

Sure, there are technical tools and methods to deal with some of these complexities, including epidemiological and statistical models, health-economics evaluations and risk analysis. Typically, decision-makers would want to choose the option with the highest overall gains in health outcomes (eg, fewer deaths from COVID-19 and other preventable diseases) under more or less strict resource constraints and plausible interventions. Also, since there is substantial evidence that COVID-19 has affected low-income and ethnic minority populations disproportionately,^{2 29–34} alternative or additional policy goals would probably include, for example, maximising equity or minimising adverse shocks to economic activity or mental health. All of these could be determined and explicitly added to decision-making models.

However, decisions will always have a component of associated uncertainty. First, decisions will require assumptions. These assumptions relate, for example, to people's behaviours during an outbreak,^{12 35–37} heterogeneities in the population,^{38 39} contact structures^{40–42} or resource allocation.^{43 44} Second, decision-making models often rely on explicit or implicit determinations of the relative utility of things such as age (eg, productive age is presumably more useful than non-productive ages), time (eg, today is apparently more important than tomorrow), disability (eg, life without disability is arguably more desirable than life with disability or pain), among others.^{45–47} Thirdly, decision-making in health policy requires substantial trade-offs between competing policy goals and relative utilities, and between objective values and principled reasons, which do not necessarily result in certainties but might, on the contrary, add extra layers of complexity.

GOOD DATA AND GOOD DECISIONS: A QUESTION OF ETHICS

Good decision-making in public health policy does depend on high-quality, reliable data.^{48 49} Good data are necessary to systematically assess public health interventions, characterise and understand progress, redefine priorities and more generally help inform public health decision-making.^{50 51} Though necessary, data and science are insufficient to fully answer what one ought to do in public health policy to uphold the common good.

There are two main definitions of 'common good': a utilitarian and an Aristotelian understanding. For utilitarians, the common good means the maximised welfare for the greatest number. The utilitarian definition of the common good has been widely employed—especially in the context of the COVID-19 pandemic.^{52 53} This is because it seems to provide a straightforward, pragmatic solution to an ethical dilemma by calculating and weighing the costs and benefits of a particular choice in a rational, quantifiable manner. This mathematical certainty that the utilitarian approach provides is appealing, especially in times of uncertainty such as the present one. The shortcomings of the utilitarian approach to medical ethics, however, have been widely debated.^{54 55} For example, important human rights questions on equality and non-discrimination have been raised to challenge utilitarian solutions to medical ethics impasses during the COVID-19 pandemic.⁵⁶ The Aristotelian definition of common good provides an alternative that does not incur the typical flaws of the utilitarian model.⁵⁵ Although the Aristotelian definition might not be as straightforward and pragmatic as the utilitarian, we are adopting it for its consistency with the human rights principles of equality and non-discrimination. Aristotelians define the common good as the set of values and reasons that justify collaboration with others in the community in a way that enables mutual flourishing (ie, the good life for each and every member of the community).¹¹

The question then of what one ought to do in public health policy to uphold the common good (in an Aristotelian sense) is not merely a scientific question; it is primarily a moral one. And this complementary relation between the empirical and the ethical is complex. While empirical facts alone are insufficient to address an ethical question thoroughly, moral principles applied to scarce data also do not provide straightforward answers. The reason for this is twofold. First, despite expanding at breakneck speed,^{6 57} data and our scientific understanding of COVID-19 are limited. Science typically produces simplified approximations of natural phenomena through models, some of which are useful to inform policy decisions. While science has helped us discover relevant truths about the pandemic and informed us about the likelihood of coming events, it simply cannot provide an utterly certain picture of the empirical reality or the future.^{19 58} Second, even if data were conclusive and perfectly consistent, empirical evidence can only take the decision-maker so far. This is because public health decision-makers committed to upholding the common good (in the Aristotelian sense) will not automatically find the right way to proceed by merely weighing costs and benefits in a rational, value-free assessment. Public health decisions always involve layers of complexity, coupled with uncertainty, where trade-offs between competing policy goals and relative utilities, on the one hand, and objective values and principled reasons—which are not easily quantifiable—on the other hand, are inevitable.^{52 59–62}

For example, on December 2, the UK authorised the use of a COVID-19 vaccine, which had been tested in a large clinical trial including about 43 000 people, but which was based on data from only 170 infections.⁵⁷ It was the first country to move forward with mass vaccination. Several other coronavirus vaccines have been approved since, and some countries have approved mass vaccination while others have decided to move more cautiously, approving new vaccines for limited or emergency use only.⁶³ There are still many pending questions. These unknowns include, inter alia, whether or not the vaccine prevents viral transmission, how the vaccine affects different groups, as well as the vaccine's long-term safety profile.^{57 64 65} Though these questions have not yet been definitively addressed, the world urgently needs a

vaccine. The pandemic is taking a heavy human toll,⁶⁶ and large-scale non-pharmaceutical strategies to control its spread, such as school closures and lockdowns, have imposed enormous social and economic costs on societies.^{67–70} For many individuals, the vaccine is the only hope for a return to normalcy,⁶⁶ where work, education, leisure, family and friendships can be experienced again without significant threats to health.

The UK's and many other countries' decision in approving a COVID-9 vaccine without complete certainty illustrates the complexities of public health decisions.⁶⁴ Health policies always involve some level of risks, many layers of complexity and difficult trade-offs among competing policy goals, relative utilities, objective values and principled reasons. More specifically, public health leaders have to make ethical decisions on how these various policy components relate to the common good—that is, to the good of each and every member of the community, whose lives are all equally worthy and who shall not be discriminated against or left behind. And this is rarely a straightforward, pragmatic decision where components can be easily quantifiable, measured and weighed against each other. Although utilitarian cost-benefit analyses offer guidance and can be useful to inform many policy decisions,^{59–62} they may be flawed when they involve in not easily quantifiable objective values and principled reasons.⁵⁸ And most worthwhile things in life are not easily calculable. Take, for example, health, work, education, leisure, family and friendships, for example. These are all equally and irreducibly basic human goods: they are all fundamental for the good life of the individual and the common good of all, and cannot be reduced as mere means to any of the others.⁵⁸ In other words, they cannot be easily measured against or trump the other. This is what has been called 'the incommensurability problem'.⁷¹

The implication of the incommensurability of basic human goods (such as health, education, leisure, family and friendships) is that, when tensions between them arise (such as happened during this pandemic, when preservation of health required the adaptation of how we experience work, education, leisure, family and friendships), the solution cannot be readily determined by a simple balancing test.⁷¹ A public health leader committed to making ethical decisions that uphold the common good of each and every member of their community will wrestle with the many basic human goods in tension. Were they to give absolute priority to health, then the decision about the other basic human goods would be easier. Nevertheless, were they to take this route, they would risk violating other equally basic human goods for an undetermined period of time. There is no easy calculation that provides an unequivocal answer for the best way forward. The competing risks, policy goals, relative utilities, objective values and principled reasons pose a complex moral question that demands a careful assessment of available scientific evidence. This is the reason why important policy decisions need to be communicated accurately and transparently to the public. Shifting scientific evidence may lead to new policy directions, but good decisions ought to reflect the much more complex process and interaction between the empirical and the ethical. Governments and science advisors have made crucial decisions during the COVID-19 pandemic without always communicating scientific evidence, trade-offs, assumptions or priorities to those affected.⁴⁹ This has undermined trust and probably the effectiveness of public health interventions.^{14 72 73}

Good public health decisions require, therefore, sound, nuanced, sophisticated ethical reasoning, which is vital in ascribing value and normative judgement to empirical facts. Quantifiable empirical data and scientific evidence, though

essential, are almost never sufficient, as an impoverished interpretation of the 'follow the science' imperative may suggest. The argument put forth in this paper does not claim to be original. It is evident that good decision-making in public health policy depends above all on rigorous reasoning that makes ethical evaluations of concrete facts. However, the long-standing policy question on the complex relationship between ethical reasoning and empirical evidence has been neglected and even obscured by an overly simplistic view of 'follow the science'. This paper and its normative argument challenged this one-dimensional view. Although the ethical reasoning and value judgement that we have argued for in this paper may not lead to more certainty in decision-making or more straightforward solutions, acknowledging the complex relationship between the ethical and the empirical is critical, and underscores the relevance of accurate communication—contextualised and explained—with all stakeholders. Confusion and distrust in authorities' decisions would be less widespread if society was cognizant of how ethics may test some empirical truths, and if decision-makers were more transparent about it.

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