

The broader societal impacts of COVID-19 and the growing importance of capturing these in health economic analyses

Schnitzler, Lena; Janssen, Luca M. M. ; Evers, Silvia M. A. A. ; Jackson, Louise; Paulus, Aggie T. G. ; Roberts, Tracy; Pokhilenko, Irina

DOI:

[10.1017/S0266462321000155](https://doi.org/10.1017/S0266462321000155)

License:

Creative Commons: Attribution (CC BY)

Document Version

Publisher's PDF, also known as Version of record

Citation for published version (Harvard):

Schnitzler, L, Janssen, LMM, Evers, SMAA, Jackson, L, Paulus, ATG, Roberts, T & Pokhilenko, I 2021, 'The broader societal impacts of COVID-19 and the growing importance of capturing these in health economic analyses', *International Journal of Technology Assessment in Health Care*, vol. 37, no. 1, e43. <https://doi.org/10.1017/S0266462321000155>

[Link to publication on Research at Birmingham portal](#)

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Perspective

Cite this article: Schnitzler L, Janssen LMM, Evers SMAA, Jackson LJ, Paulus ATG, Roberts TE, Pokhilenko I (2021). The broader societal impacts of COVID-19 and the growing importance of capturing these in health economic analyses. *International Journal of Technology Assessment in Health Care* **37**, e43, 1–4. <https://doi.org/10.1017/S0266462321000155>

Received: 9 September 2020

Revised: 28 January 2021

Accepted: 3 February 2021

Key words:



COVID-19; Intersectoral costs and benefits; Economic evaluation; Societal perspective

Author for correspondence:

Lena Schnitzler,

E-mail: l.schnitzler@maastrichtuniversity.nl

The broader societal impacts of COVID-19 and the growing importance of capturing these in health economic analyses

Lena Schnitzler^{1,2} , Luca M. M. Janssen² , Silvia M. A. A. Evers^{2,3},

Louise J. Jackson¹, Aggie T. G. Paulus^{2,4}, Tracy E. Roberts¹

and Irina Pokhilenko² 

¹Health Economics Unit, Institute of Applied Health Research, College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK; ²Department of Health Services Research, Care and Public Health Research Institute (CAPHRI), Faculty of Health, Medicine and Life Sciences (FHML), Maastricht University, Maastricht, The Netherlands; ³Trimbos Institute Centre of Economic Evaluation & Machine Learning, Utrecht, The Netherlands and ⁴School of Health Professions Education (SHE), Faculty of Health, Medicine and Life Sciences (FHML), Maastricht University, Maastricht, The Netherlands

Abstract

The rapid spread of the current COVID-19 pandemic has affected societies worldwide, leading to excess mortality, long-lasting health consequences, strained healthcare systems, and additional strains and spillover effects on other sectors outside health (i.e., intersectoral costs and benefits). In this perspective piece, we demonstrate the broader societal impacts of COVID-19 on other sectors outside the health sector and the growing importance of capturing these in health economic analyses. These broader impacts include, for instance, the effects on the labor market and productivity, education, criminal justice, housing, consumption, and environment. The current pandemic highlights the importance of adopting a societal perspective to consider these broader impacts of public health issues and interventions and only omit these where it can be clearly justified as appropriate to do so. Furthermore, we explain how the COVID-19 pandemic exposed and exacerbated existing deep-rooted structural inequalities that contribute to the wider societal impacts of the pandemic.

Background

The rapid spread of the current coronavirus disease, SARS-CoV2 (COVID-19), has not only left societies with a high number of excess deaths and a wide range of health consequences but also taken a heavy toll on wider global economies, impacting other sectors outside health (1). Moreover, COVID-19 exposed and exacerbated deep-rooted structural inequalities in our societies that can have an additional weight on the consequences arising from COVID-19.

The sectors most obviously affected by COVID-19 include the healthcare and social care sector, with high numbers of COVID-19 cases and deaths, particularly in the care home sector, straining healthcare facilities and entire health systems and leading to rapidly increasing healthcare costs (2;3). Various areas of healthcare have suffered from the pandemic, including disruption in the delivery of essential health services, a substantial increase in intensive care usage, shortage of medical equipment, disruption of routine immunization, the increased vulnerability of those with underlying conditions, along with many other aspects.

However, the response to this pandemic has not only involved the health sector but also required a whole society approach that involves a wide range of other sectors (4;5). The pandemic has clearly exposed the broader societal impacts a public health threat can have on society. In addition to healthcare interventions (i.e., test and tracing, vaccination), multiple social restrictive measures have been employed “to flatten the curve” and to reduce the pace and the extent of the infection rate, including physical distancing, country lockdowns, and business and school closures (6). These measures certainly assisted in controlling the rapid spread of the virus but also led to additional strains and spillover effects on other sectors, including labor, education, criminal justice, housing, consumption, environment, among others (4;5). In health economics, these broader societal impacts that spill over to other sectors of society outside health are referred to as *intersectoral* costs and benefits (7). Other international literature might also refer to *multisectoral* or *nonhealth(care)* costs and benefits or consequences.

In practice, assessing the economic impact of a disease or a health intervention commonly involves capturing the associated healthcare costs and productivity losses due to an illness, disability, and/or premature death. Such a narrow approach to conducting an economic analysis is likely to severely underestimate the total cost burden, potentially leading to suboptimal decision making (i.e., inefficient resource allocation) (5). Although more recent research

demonstrates the extent to which broader societal costs and benefits can contribute to the total cost burden of a disease or related intervention (8;9), relevant spillover effects are not always fully considered in economic analyses.

The aim of this perspective article is to show how COVID-19 has exposed that broader societal costs and benefits are central to public health issues and interventions. In this paper, we acknowledge that the complex interplay between the different sectors can make it challenging to capture all relevant societal impacts in an economic evaluation, but that its estimation is fundamental to optimal decision making. We also advocate the use of a societal perspective and suggest a way that can help assist in identifying and capturing the broader societal impacts.

To structure this paper and better demonstrate the different sectors affected by COVID-19, we used the impact inventory by The Second Panel on Cost-Effectiveness in Health and Medicine, a table outlining the different “non-health care” sectors that can be impacted by a disease or health intervention more explicitly and transparently (10).

Understanding the Broader Societal Impacts of COVID-19

The different sectors affected by COVID-19 illustrate the importance of considering a societal perspective.

Labor Market and Productivity

A wide range of measures were implemented to control the outbreak, including the closure of nonessential businesses, quarantine, and trade and travel restrictions, which have resulted in a slowdown of global economies. The subsequent economic consequences on the labor market have involved being furloughed or laid off from work, loss of employment, a drop in the overall household income (11), and less employment opportunities being created due to business shutdowns or production cuts. The time spent on unpaid activities such as household work, childcare, and supporting children's education at home increased for many (12).

Education

The closure of schools and other educational facilities had a severe impact on the education sector (13). Consequences included, for instance, interrupted learning and personal development opportunities, a limited social environment for children and teenagers, as well as the lack of access to childcare options (14). For many teachers and students, the closures also meant moving to online, digital, and distance learning as much as possible, which can be associated with certain challenges (i.e., disparity among families without access to technology or the Internet, proctorship during online exams, etc.) (13). This change reflects a high level of adaptability, reorganization and innovation.

Criminal Justice

The introduction of new regulations to control the virus such as lockdowns and curfews required a reallocation of police time to enforce regulations related to this pandemic response and to ensure that people adhere to these regulations. It also stretched resources for many European criminal justice systems as, for instance, law enforcement agencies and courts needed to deal with proceedings against potential violations of new regulations (15;16). Furthermore, crime rates for domestic violence and

child abuse increased but simultaneously became less evident during the time of lockdown (17).

Housing

The impact of the current pandemic on the housing sector is wide-ranging, affecting tenants, mortgage holders, real estate companies, sellers, buyers, builders, and more. At an individual level, decreasing employment opportunities and mass redundancies had an impact on many people's ability to pay rent or mortgages. Various measures were implemented that aimed at, for instance, supporting tenants by freezing or reducing the monthly rent, halting transactions, and introducing a mortgage holiday for lenders (18). In terms of the real estate market, the demand for housing dropped, the numbers of property viewings decreased, and sellers and buyers are now reconsidering their (mortgage) plans, along with many other aspects. Low mortgage rates can certainly be attractive to people who do want to invest at this particular time.

Consumption

Globally, nonessential businesses such as restaurants, cafes, bars, and movie theaters were forced to temporarily close down. Meanwhile, supermarkets, pharmacies, and other essential service providers faced an enormous strain to continue operating under the new regulations. Consumer behavior and purchasing habits changed, with one example being panic buying, which led to a scarcity of essential supplies in supermarkets (19). As the demand for essential goods (i.e., food, medicines, etc.) increased during the pandemic, the demand for nonessential goods (i.e., travel, tourism, etc.) declined. Consequently, prices of goods with higher demand tended to increase, posing a problem to many, particularly the most vulnerable groups of society.

Environment

Travel restrictions and slowed production, in particular, led to a decrease in air pollution and greenhouse gas emissions (20). Internationally, this led to improvements in the quality of air and water and in the cleanliness of beaches (21). At the same time, the volumes of unrecyclable waste have risen due to the increase in the use of face masks and single-use packaging of goods (21).

Exposing Inequalities

In addition to the broader societal impacts, there are structural inequalities that have been ripped open, further exacerbating the societal impacts of COVID-19 on society.

The COVID-19 pandemic exposed and exacerbated existing deep-rooted structural inequalities and disparities in wealth that contribute to the wider societal impacts related to the COVID-19 pandemic. For example, people living under poorer socioeconomic circumstances and those with underlying health conditions are at a higher risk of contracting the virus and developing complications compared with others. The current pandemic has also exacerbated the domestic and household burden that is predominantly borne by women. In general, employed women experienced a different and more severe impact as a consequence of the lockdowns, particularly those working in female-dominated professions such as in the hospitality/service industry and social care sector that were halted in many countries during the lockdown (22). On average, women work fewer hours, have a lower

salary, and generally spend a shorter period of time in the labor market, making them more vulnerable to layoffs, the loss of income, and financial insecurities than men (22). Another example is the reduction in sexual health and contraceptive services due to a reallocation of resources, which has led to women facing difficulties in accessing (in-clinic) contraception services, which may impact their future employment (23). In addition, the lockdown imposed a higher burden on the mental health of people living under difficult socioeconomic circumstances and those living in smaller houses and with less space. These are only a few examples that make it evident that these aspects of structural gender, health, and socioeconomic inequalities can exacerbate the broader societal impacts arising from this pandemic.

Discussion

The broader societal impacts of COVID-19 are indisputable. Alongside severe health impacts, this pandemic has led to wider and severe economic, social, and political consequences to societies worldwide. Although the full overview of societal impacts is yet unknown, we have seen that a coordinated whole society response to this outbreak has been a successful driver—if not “the” successful driver—in slowing the outbreak and mitigating its effects. It has become more than evident that all sectors of society have a role to play in the response and preparedness for an outbreak. We do not aim to provide a complete overview of all of the sectors affected by COVID-19, but to demonstrate how we can begin to assess the impact of a public health threat on the different societal sectors.

The experience of the COVID-19 pandemic shows that a broader perspective and approach in health economics research can be essential for certain analyses. This includes, for instance, prevention, public health, social care, and mental health services. Furthermore, a broader perspective can be particularly significant for chronic illnesses including “Long COVID” that might result in an individual being off work due to the chronic impacts caused by their illness (24). Economic analyses need to consider the inclusion of the broader societal impacts of public health issues and interventions and only omit these where it can be clearly justified as appropriate to do so. For many analyses, and where appropriate, it is the inclusion of wider societal impacts that can increase transparency and best inform decision makers. Accounting for these wider impacts such as informal care, childcare, or household activities in economic analyses can, however, be challenging (7). One aspect that can make this consideration problematic is the complex interplay between the different sectors caused by a public health threat. As the complexity of capturing and quantifying these wider societal impacts is being recognized for COVID-19, as well as other public health issues, it is the right time to seek the opportunity for change, advocating the adoption of a societal perspective in economic analyses—again, unless its omission can truly be justified.

A narrow perspective applied in economic analyses tends to miss capturing the broader societal impacts of public health issues, ignoring potentially relevant costs and benefits. A broader perspective is expected to estimate all relevant societal costs and benefits, but many economic analyses that apply a societal perspective tend to focus only on the impact on the health and labor sector, particularly paid labor losses (25). A societal perspective also means that it is important to focus not only on paid production such as labor losses but also on unpaid production. One approach to help ensure that relevant societal impacts are fully captured in economic analyses—from a societal

perspective—is the use of a cost sector classification scheme, or an impact inventory. In fact, the recommendations made by the Second Panel on Cost-Effectiveness in Health and Medicine could be a useful tool for assessing which health interventions require a broader perspective in their evaluation (10).

Given the complex, fast-changing, and fast-spreading nature of COVID-19, it is important that health economists continue to evaluate and re-evaluate the impact of the current pandemic and related measures. Health economic evidence will continue to be required to assist in further planning to control this virus, and should always paint the full “societal” picture.

Funding

This paper was funded by the University of Birmingham and Maastricht University.

Conflicts of Interest

There are no conflicts of interest.

References

1. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus and COVID-19 pandemic: A review. *Int J Surgery*. 2020;78:185–93.
2. IBIS World. Effects of COVID-19 on global healthcare systems. 2020 [cited 2020 Jul 10]. Available from: <https://www.ibisworld.com/industry-insider/coronavirus-insights/effects-of-covid-19-on-global-healthcare-systems/>
3. Office for National Statistics. Deaths involving COVID-19 in the care sector, England and Wales: Deaths occurring up to 12 June 2020 and registered up to 20 June 2020. Provisional figures on deaths involving the coronavirus (COVID-19) within the care sector, in England and Wales. Released: 3 July 2020.
4. Ludvigson SC, Ma S, Ng S. Covid19 and the macroeconomic effects of costly disasters. National Bureau of Economic Research; 2020. 0898-2937.
5. Fernandes N. Economic effects of coronavirus outbreak (COVID-19) on the world economy. Available from: SSRN 3557504. 2020.
6. Zala D, Mosweu I, Critchlow S, Romeo R, McCrone P. Costing the COVID-19 pandemic: An exploratory economic evaluation of hypothetical suppression policy in the United Kingdom. *Value Health*. 2020;23:1432–7.
7. Weatherly H, Drummond M, Claxton K, Cookson R, Ferguson B, Godfrey C, et al. Methods for assessing the cost-effectiveness of public health interventions: Key challenges and recommendations. *Health Policy*. 2009;93:85–92.
8. Lavelle TA, D’Cruz BN, Mohit B, Ungar WJ, Prosser LA, Tsiplova K, et al. Family spillover effects in pediatric cost-utility analyses. *Appl Health Econ Health Policy*. 2019;17:163–74.
9. Krol M, Papenburg J, Koopmanschap M, Brouwer W. Do productivity costs matter? *Pharmacoeconomics*. 2011;29:601–19.
10. Sanders GD, Neumann PJ, Basu A, Brock DW, Feeny D, Krahn M, et al. Recommendations for conduct, methodological practices, and reporting of cost-effectiveness analyses: Second panel on cost-effectiveness in health and medicine. *JAMA*. 2016;316:1093–103.
11. Coates B, Cowgill M, Chen T, Mackey W. Shutdown: Estimating the COVID-19 employment shock. Working paper, Melbourne (VIC): Grattan Institute; 2020.
12. Huls SPI, Sajjad A, Kanters TA, Brouwer WBF, van Exel NJA, Hakkaart-van Roijen L. Productivity related to paid and unpaid work in the Netherlands during COVID/19 pandemic. 2020. Received from: https://www.oew.ac.at/fileadmin/subsites/Institute/VID/PDF/Conferences/2020/COVID19/Posters/6.1_huls.pdf
13. Mustafa N. pact of the 2019–20 Coronavirus pandemic on education. *Int J Health Pref Res*. 2020:1–12.
14. UNESCO. Adverse consequences of school closures. 2020. Available from: <https://en.unesco.org/covid19/educationresponse/consequences>

15. **Agence France-Presse.** Criminal justice systems struggle to deal with COVID-19. Released: 16 April 2020. Received from: <https://ednh.news/criminal-justice-systems-struggle-to-deal-with-covid-19/>
16. **Lancaster Police and Crime Commission.** Police and Crime Commissioner calls for certainty over police funding as cost of coronavirus nears £1m. 2020. Received from: <https://www.lancashire-pcc.gov.uk/police-and-crime-commissioner-calls-for-certainty-over-police-funding-as-cost-of-coronavirus-nears-1m/>
17. **The United Nations Department of Global Communications (DGC).** UN supporting 'trapped' domestic violence victims during COVID-19 pandemic. 2020 [cited 2020 Jul 27]. Available from: <https://www.un.org/en/coronavirus/un-supporting-%E2%80%98trapped%E2%80%99-domestic-violence-victims-during-covid-19-pandemic>
18. **Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al.** The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *Int J Surgery.* 2020;78:185.
19. **Accenture.** COVID-19 will permanently change consumer behavior. Released: 29 April 2020. Received from: <https://www.accenture.com/us-en/insights/consumer-goods-services/coronavirus-consumer-behavior-research>
20. **Hamwey R.** Environmental impacts of coronavirus crisis, challenges ahead. UNCTAD; 2020 [cited 2020 Jul 10]. Available from: <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2333>
21. **Zambrano-Monserrate MA, Ruano MA, Sanchez-Alcalde L.** Indirect effects of COVID-19 on the environment. *Sci Total Environ.* 2020;728:138813.
22. **Queisser M.** *Covid-19: Gender inequalities in the labour market.* Paris: Institut Montaigne; 2020.
23. **British Association for Sexual Health and HIV (BASHH).** BASHH COVID-19 sexual health 'clinical thermometer' survey initial results snapshot. Released: 27 April 2020. Received from: <https://members.bashh.org/Documents/COVID-19>
24. **World Health Organization.** Long-term effects of COVID-19. WHO; 2020 [cited 2020 Sep 09]. Report No.: Contract No.: Coronavirus Update 36.
25. **Drost RM, van der Putten IM, Ruwaard D, Evers SM, Paulus AT.** Conceptualizations of the societal perspective within economic evaluations: A systematic review. *Int J Tech Assess Health Care.* 2017;33:251–60.