



OPEN ACCESS

# Under the spotlight: understanding the role of the Chief Medical Officer in a pandemic

Margaret MacAulay <sup>1,2</sup> Anna K Macintyre <sup>3</sup> Aryati Yashadhana <sup>4,5,6</sup>  
Adèle Cassola <sup>1</sup> Patrick Harris <sup>4,5,6</sup> Caroline Woodward,<sup>1,2</sup>  
Katherine Smith <sup>3</sup> Evelyne de Leeuw <sup>4,5,6</sup> Michèle Palkovits <sup>1</sup>  
Steven J Hoffman <sup>1,7,8</sup> Patrick Fafard <sup>1,2</sup>

<sup>1</sup>Global Strategy Lab, University of Ottawa/York University, Ottawa, Ontario, Canada

<sup>2</sup>Graduate School of Public and International Affairs, University of Ottawa, Ottawa, Ontario, Canada

<sup>3</sup>School of Social Work and Social Policy, University of Strathclyde, Glasgow, UK

<sup>4</sup>Centre for Health Equity Training, Research and Evaluation (CHETRE), University of New South Wales, Sydney, New South Wales, Australia

<sup>5</sup>Centre for Primary Health Care and Equity, Faculty of Medicine, University of New South Wales, Sydney, New South Wales, Australia

<sup>6</sup>Ingham Institute for Applied Medical Research, Liverpool, New South Wales, Australia

<sup>7</sup>Dahdaleh Institute for Global Health Research, School of Global Health and Osgoode Hall Law School, York University, Toronto, Ontario, Canada

<sup>8</sup>Department of Health Research Methods, Evidence, and Impact and McMaster Health Forum, McMaster University, Hamilton, Ontario, Canada

## Correspondence to

Professor Patrick Fafard, Global Strategy Lab, University of Ottawa, Ottawa, Canada; Patrick.Fafard@globalstrategylab.org

Received 13 March 2021

Accepted 15 July 2021



© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite:** MacAulay M, Macintyre AK, Yashadhana A, et al. *J Epidemiol Community Health* Epub ahead of print: [please include Day Month Year]. doi:10.1136/jech-2021-216850

## ABSTRACT

As the COVID-19 pandemic took hold in 2020, Chief Medical Officers (CMOs) entered the public spotlight like never before. Amidst this increased visibility, the role is deeply contested. Much of the disagreement concerns whether CMOs should act independently of the government: while some argue CMOs should act as independent voices who work to shape government policy to protect public health, others stress that CMOs are civil servants whose job is to support the government. The scope and diversity of debates about the CMO role can be explained by its inherently contradictory nature, which requires incumbents to balance their commitments as physicians with their mandates as civil servants who advise and speak on the government's behalf. The long-haul COVID-19 pandemic has further tested the CMO role and has shone light on its varying remits and expectations across different jurisdictions, institutions and contexts. It is perhaps unsurprising, then, that calls to amend the CMO role have emerged in some jurisdictions during the pandemic. However, any discussions about changing the CMO role need a stronger understanding of how different institutional and individual approaches impact what incumbents feel able to do, say and achieve. Based on an ongoing comparative analysis of the position across five countries with Westminster-style political systems, we provide an overview of the CMO role, explain its prominence in a pandemic, examine some debates surrounding the role and discuss a few unanswered empirical questions before describing our ongoing study in greater detail.

As the COVID-19 pandemic took hold in 2020, government Chief Medical Officers (CMOs) entered the public spotlight. Understood by many as a technical or background official who advises ministers; communicates information to the public; and, in some cases, may serve as a senior executive managing health ministry/department functions and provide leadership to the medical and/or public health profession, the COVID-19 pandemic recast the CMO as a major public figure. From front-page features in prominent newspapers to the proliferation of fan (and antifan) social media accounts, CMOs in many jurisdictions have become household names who are recognised as key players in pandemic policy responses.

Amidst this increased visibility, the role remains deeply contested.<sup>1</sup> Some argue that the CMO ought to assume the role of public health advocate or independent voice.<sup>2</sup> Others believe that the CMO should exercise strong decision-making or regulatory power within the government.<sup>3,4</sup> These views can partly be explained by the inherently contradictory nature of the CMO role, where their professional commitments as physicians may at times clash with their mandates as civil servants to advise and speak on behalf of the government.<sup>5</sup>

These tensions have become more accentuated and more visible during the COVID-19 pandemic. CMOs have become central actors in a long-haul, global crisis of a greater scale, scope and duration than what their predecessors have encountered. In some jurisdictions, calls to amend the CMO role emerged during the pandemic,<sup>4,6</sup> and such calls are likely to continue once the immediate crisis recedes. Any discussions about changing the CMO role need a stronger understanding of how different institutional designs and individual approaches to the role impact what incumbents feel able to do, say and achieve. This is one of the central goals of the broader project introduced in this essay. We are currently undertaking a comparative analysis of the CMO position across five countries with Westminster-style political systems: Australia, Canada, Ireland, New Zealand and the United Kingdom. We consider CMOs at both national and subnational levels, acknowledging that each jurisdiction's legislative and cultural contexts shape the structure and function of the role. This essay provides an overview of the CMO role, explains its prominence in a pandemic, examines some key debates surrounding the role and discusses a few unanswered empirical questions before describing our ongoing study in greater detail.

In this essay, we use the term 'CMO' to refer to the role of a publicly appointed doctor and senior civil servant who advises the government and speaks on its behalf regarding public health issues. This term is commonly used at the national level in Australia, Ireland and the United Kingdom. However, in New Zealand and among some states and territories in Australia, the term 'CMO' describes a separate and clinical role.<sup>7-11</sup> Instead, the publicly appointed doctor and senior civil servant in some Australian states and territories is commonly known as the 'Chief Health Officer'. The most common terms

for the role in Canada are ‘Chief Medical Officer of Health’ or ‘Chief Public Health Officer’.

### THE CMO ROLE IN ‘NORMAL’ TIMES

Originating in Victorian England when cholera and typhus outbreaks required local authorities to address public health needs,<sup>12</sup> the CMO role has always straddled the boundaries among politics, medicine and public health. In countries with Westminster-style systems that model the role on the original 19th-century English approach, the CMO is typically a physician in a publicly appointed role with the rank and status of a senior civil servant. CMOs’ status as physicians gives them independent scientific authority and expertise that informs their advice to health departments/ministries and sometimes the government more broadly. This authority and expertise also enhance the likelihood that the public will perceive them and their messages as credible and trustworthy.<sup>13</sup>

The CMO role is distinct from those of other senior civil servants. In Westminster-style political systems, the essential character of the relationship between civil servants and elected officials is based on an implicit contract wherein civil servants exhibit certain qualities (notably impartiality, expertise, loyalty to the government of the day and a low public profile) in return for certain conditions (namely, security of tenure and merit-based selection).<sup>14</sup> However, the CMO typically has a very public presence. In fact, CMOs in some jurisdictions have independent statutory authority allowing them to issue reports in their own name without requiring government approval. Securing this independent ability to report to the public was a major victory for the incumbent when the role was first established in 19th-century England.<sup>12</sup> Furthermore, although some CMOs are career civil servants, others are brought in from outside the government so as to enhance their perceived independence.<sup>5 12</sup>

These unique features of the role give CMOs internal and external influence: they are typically positioned to protect public health by contributing to government policymaking and decision-making processes and by speaking directly to citizens about health issues. At the same time, although CMOs are typically advisors to ministers and secretaries of health, their ability to influence policy decisions is shaped by their reporting relationships, their access to the minister in practice and the degree to which their advice filters through other ministry or department officials. CMOs’ responsibilities are also in tension with one another as they juggle sometimes competing duties to the government, the medical and public health communities and the general public. They must balance the need to maintain trusting and collaborative working relationships with elected officials in order to influence decision-making against their ethical obligations as physicians and leaders who may be expected to advocate for public health (which, for some, includes the expectation that they act as a critic of government choices). As spokespeople, they must also loyally explain the government’s decisions to media and citizens while maintaining public trust in the information they share.

### THE CMO IN CRISIS TIMES

The spotlight on the role—and the confusion surrounding it—intensifies in times of crisis such as the COVID-19 pandemic. In some jurisdictions, the use of existing public health statutes, emergency management laws, and, in some cases, special purpose legislation affects the CMO’s powers and responsibilities. While the scope of the CMO role is not clearly defined in contemporary public health legislation in Ireland and the UK,

existing public health legislation in Australia, Canada and New Zealand outlines the CMO’s regulatory and emergency management duties. Although these statutes define the jurisdiction’s core public health institutions and the key leadership role assigned to the CMO, it is unlikely that their drafters had envisioned a crisis of the same scale, scope and duration as the COVID-19 pandemic.

The length and severity of the COVID-19 pandemic have also stretched the CMO’s spokesperson role. At the time of writing, CMOs had been regularly featured across print, broadcast and social media for well over a year—far beyond what the architects of the role could have anticipated in a pre-social media era. Many CMOs have regularly appeared at press conferences and issued statements together with ministers. Although this is consistent with their role as members of emergency management teams and enhances the credibility of government communications, it can also cause audiences to question the role’s non-partisan nature; create confusion regarding CMOs’ positions as advisors compared with decision-makers; and, at the extreme, fuel distrust when media pundits and citizens repeatedly criticise the CMO and challenge their expertise.<sup>15–17</sup> On the other hand, where CMOs fail to signal clear support for policy decisions, media sources may interpret this as evidence that these high-profile advisors are ‘at odds’ with the governments they serve.<sup>18</sup>

### THE GLARE OF THE SPOTLIGHT

The tensions and contradictions associated with the CMO role are understandably being scrutinised during the COVID-19 pandemic. Some criticism surrounds their level of autonomy and independence. In the Australian state of Queensland, state emergency legislation and *Public Health Act* amendments that enhanced the CMO’s powers became the subject of a parliamentary inquiry, generating questions over how long and to what extent unelected officials should make decisions during pandemics of this scale, scope and duration.<sup>19 20</sup> Conversely, debates surrounding the role in Alberta, Canada, concerned whether their CMO could and should have used the regulatory power granted under the *Public Health Act* to impose restrictions when the government was reluctant to do so.<sup>3</sup> In response, some have emphasised that the CMO’s role is currently designed to advise and make recommendations rather than to take unilateral action independent of the government.<sup>21–23</sup> This suggests that the role remains highly contested.<sup>5</sup>

In jurisdictions where the discourse of evidence-based policy-making has become a dominant paradigm,<sup>23 24</sup> the pandemic has also revealed complexities regarding the CMO’s twin roles of scientific translator and policy advisor. In the United Kingdom, the government’s claims to be ‘guided by the science’<sup>25</sup> brought increased media and public health scrutiny to the government’s Scientific Advisory Group for Emergencies (SAGE). Co-chaired by the CMO for England and the United Kingdom Government Chief Scientific Adviser, SAGE’s structure and dynamics underline the complicated relationship between scientific evidence and decision-making.<sup>26</sup> A recent analysis by the Institute for Government suggests that having the CMO and Government Chief Scientific Adviser co-chair SAGE while also acting as intermediaries between experts and decision-makers risks blurring the distinction between scientific and policy advice.<sup>27</sup> Interviews with select insiders also suggest that meetings were frequently dominated by medical scientists and modellers lacking public health expertise and that there were few mechanisms to support interdepartmental communication and coordination.<sup>27</sup> Although the launch of ‘Independent SAGE’<sup>28</sup> by an outside group of

experts offers an interesting alternative for translating scientific evidence into policy advice, this situation reveals that the relationship between the CMO role and the advice they give is—as scholarly literature on the role of experts in policymaking suggests<sup>29 30</sup>—embedded in a more complicated set of institutional arrangements that naïve models of evidence-based policymaking rarely acknowledge.<sup>31</sup>

In Australia, suspicion surrounding the political motivations behind policy decisions also became a matter of public concern. In 2020, some subnational leaders were accused of ‘hiding’ behind the advice of their CMOs<sup>32 33</sup> over decisions that deviated from the advice of the Australian Health Protection Principal Committee (AHPPC), which is composed of state and territorial CMOs. For example, Victoria’s Premier was criticised in some quarters of the press for closing schools against the advice of the AHPPC in Spring 2020.<sup>34 35</sup> In another case, the AHPPC never issued explicit advice regarding internal border closures;<sup>36</sup> despite this, premiers cited their CMOs’ advice as a justification for keeping borders closed and faced accusations of ‘politicking’<sup>37</sup> and (unsuccessful) legal challenges.<sup>38 39</sup> This led critics to publicly question the autonomy and independence of the CMO role in Australia, with some going so far as to argue that certain CMOs had become excessively deferential to their political bosses.<sup>40</sup>

#### UNANSWERED EMPIRICAL QUESTIONS ABOUT THE CMO ROLE

These and other examples suggest critical and unanswered questions about the institutional design of the CMO role across Westminster-style policymaking contexts. For instance, in the face of a major public health threat like the COVID-19 pandemic, *can* the same person who independently advises the government during non-crisis times *also* serve as its spokesperson *without* irrevocably straining the role and its public image? Additionally, how has the CMO role *already* changed, and how has the pandemic’s scale, scope and duration shaped public and political discourse surrounding the role?

Our view is that any discussions about how to structure the CMO role require a much more nuanced and evidence-informed understanding of how the different designs and interpretations of the role enhance or limit good governance—including the good governance of evidence;<sup>41</sup> how the many institutional design options for this role lend themselves to achieving different goals; and how incumbents balance shorter-term and longer-term objectives. This requires consideration of numerous trade-offs. For example, although policymakers could maximise the CMO’s role as a public advocate or critic through legislation protecting their ability to speak independently, a more publicly critical role would limit the CMO’s ability to influence public health policy as a senior and trusted advisor to the government. Making the advice of CMOs public may increase transparency but risks undermining the provision of frank and fearless advice that characterises their roles as senior civil servants. While designating CMOs as part of senior management teams can increase their influence over high-level public health decisions, substantial managerial duties may take time away from their external-facing roles, and their integration within the senior levels of the ministry may invite questions from external audiences regarding their perceived independence from the government.

By shining a spotlight on the CMO role, the COVID-19 pandemic has created an opportunity to examine how the role has developed across different contexts and to consider the trade-offs of these different approaches. Empirical analysis should

carefully assess varying institutional contexts and approaches to the CMO role to enhance our understanding of how different configurations enable incumbents to bring scientific public health advice to bear on public policy decisions; communicate trusted scientific advice to the public; serve as a senior executive managing public health programmes; and/or provide medical or public health leadership to the profession.

#### COMPARING SENIOR PUBLIC HEALTH LEADERSHIP DURING THE COVID-19 PANDEMIC

To explore these issues comprehensively, an empirical and comparative research agenda is needed. Building on existing work examining the CMO role in Canada,<sup>1 5 42</sup> we have launched a comparative study of senior public health leadership during the COVID-19 pandemic with a specific focus on the CMO role. Our international and interdisciplinary team of public health policy, law and governance experts is investigating efforts in national and subnational jurisdictions in Australia, Canada, Ireland, New Zealand and the United Kingdom, systematically analysing: (1) legal and public administration documents to uncover similarities and differences in how the CMO role is structured; (2) government communications about and media coverage of what CMOs are saying and what is being said about them publicly;<sup>42</sup> (3) public opinion survey data regarding how members of the public receive, understand and trust messaging from CMOs and governments;<sup>13</sup> and (4) interviews with current and former CMOs and other senior public health officials to understand their experiences of the role and the challenges they faced during the pandemic. Together, these data sources will help us further refine and expand on existing accounts of the CMO role in Canada and the United Kingdom and draw lessons learnt about the institutional design and effectiveness of the CMO role in the context of pandemics.<sup>1 5 12</sup>

With an awareness that each CMO role is influenced by a combination of legislation, organisational structure, institutional norms, working relationships and individual factors like tenure and personality, our conceptual framework categorises CMOs according to the scope and nature of their respective advisory, communications and management functions as well as the autonomy they are given to execute them.<sup>5</sup> CMOs whose advisory remit is primarily technical operate differently from those whose roles are more expansive; those serving as government spokespeople are distinct from those whose statutory authority also allows them to communicate independently and use that authority for policy agenda setting and advocacy; those who have day-to-day management responsibilities may influence public health through different avenues than those whose policy/advocacy roles are more limited. An analysis of public health legislation in Canada, for example, identified five possible archetypes of the role: the private advisor, the technical advisor, the loyal executive, everybody’s expert and the public advocate.<sup>5</sup> We will build on our conceptual framework<sup>5</sup> to categorise each CMO in our sample to analyse what the role looks like in ‘normal’ times and how it has changed in the context of the COVID-19 pandemic. With the role already shifting in response to the pandemic, our broader aim is to shed light on the complex and seldom discussed role of governance and leadership in public health policymaking.

During the second year of the COVID-19 pandemic, the spotlight on the CMO has started to dim, at least in some places. Many CMOs have become less prominent in media coverage as governments have suspended their daily COVID-19 press conferences in favour of issuing press releases. Yet, issues

like vaccine distribution, viral mutation and debates around reopening society (all of which were widely discussed at the time of writing) as well as ongoing public health concerns around persistent health inequalities, stalling life expectancy rates, the health effects of climate change and the opioid crisis suggest that the CMO position remains crucial. This makes it as important as ever to better understand the competing demands placed on the role and the structures supporting it. To improve health outcomes during COVID-19 and beyond, empirical investigation of—and constructive reflection on—this most visible public health leadership position is urgently required.

**Twitter** Aryati Yashadhana @ayashadhana, Patrick Harris @pharrismusings, Evelyn de Leeuw @evelynedeleeuw, Steven J Hoffman @shoffmania and Patrick Fafard @FafardPatrick

**Contributors** MM drafted the manuscript with input from all coauthors. AKM, AY, AC, PH, CW, KS, EdL, MP, SJH and PF provided critical feedback and assisted with the revision process. PF in the principal investigator for the overall project.

**Funding** This work was supported by the Government of Canada's New Frontiers in Research Fund (grant number: NFRFR-2019-00003). The funding body was not involved in the study design, data collection, analysis or interpretation or the decision to submit the article for publication.

**Competing interests** SJH is the scientific director of the Institute of Population and Public Health at the Canadian Institutes of Health Research (CIHR). The views expressed in this article are those of the authors and do not necessarily reflect those of CIHR or the government of Canada.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** No data are available.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

**ORCID iDs**

- Margaret MacAulay <http://orcid.org/0000-0002-7333-5392>
- Anna K Macintyre <http://orcid.org/0000-0002-0218-8882>
- Aryati Yashadhana <http://orcid.org/0000-0003-2573-8637>
- Adèle Cassola <http://orcid.org/0000-0002-5406-8604>
- Patrick Harris <http://orcid.org/0000-0002-4649-4013>
- Katherine Smith <http://orcid.org/0000-0002-1060-4102>
- Evelyn de Leeuw <http://orcid.org/0000-0003-3434-1439>
- Michèle Palkovits <http://orcid.org/0000-0003-1366-2225>
- Steven J Hoffman <http://orcid.org/0000-0002-2064-3711>
- Patrick Fafard <http://orcid.org/0000-0001-6234-3699>

**REFERENCES**

- 1 Fafard P, Forest P-G. The loss of that which never was: evaluating changes to the senior management of the public health agency of Canada. *Canadian Public Administration* 2016;59:448–66.
- 2 Naylor D, Basur S, Bergeron M. Learning from SARS: renewal of public health in Canada. Health Canada, 2003. Available: <http://www.phac-aspc.gc.ca/publicat/sars-sras/pdf/sars-e.pdf>
- 3 Attaran A, Hardcastle L. Politicians are failing. Canada's Chief Medical Officers need to step in. *Macleans*, 13 Nov 2020. Available: <https://www.macleans.ca/opinion/politicians-are-failing-canadas-chief-medical-officers-need-to-step-in/>
- 4 Zhang T. CHO should have the same powers as a Supreme Court judge, lawyer says. *Lawyers Weekly*, 17 Sept 2020. Available: <https://www.lawyersweekly.com.au/politics/29475-cho-should-have-the-same-powers-as-a-supreme-court-judge-lawyer-says>
- 5 Fafard P, McNena B, Suszek A, et al. Contested roles of Canada's Chief Medical Officers of Health. *Can J Public Health* 2018;109:585–9.
- 6 Bellefontaine M. UCP votes against independent role for Chief Medical Officer of Health. *CBC News*, 30 Sept 2020. Available: <https://www.cbc.ca/news/canada/edmonton/alberta-chief-medical-officer-health-committee-1.5745437>
- 7 Government of Tasmania. Department of Health annual report 2019-2020, 2020. Available: [https://www.health.tas.gov.au/\\_\\_data/assets/pdf\\_file/0013/415021/DoH\\_Annual\\_Report\\_2019-20\\_-\\_Final.pdf](https://www.health.tas.gov.au/__data/assets/pdf_file/0013/415021/DoH_Annual_Report_2019-20_-_Final.pdf)

- 8 Government of Western Australia Department of Health. Office of the Chief Medical Officer, 2021. Available: [https://ww2.health.wa.gov.au/Articles/N\\_R/Office-of-the-chief-medical-officer](https://ww2.health.wa.gov.au/Articles/N_R/Office-of-the-chief-medical-officer)
- 9 New Zealand Ministry of Health. The New Zealand health and disability system: Handbook of organisations and responsibilities, 2017. Available: [https://www.beehive.govt.nz/sites/default/files/2017-12/Health%20-%20Organisations%20and%20Responsibilities\\_0.pdf](https://www.beehive.govt.nz/sites/default/files/2017-12/Health%20-%20Organisations%20and%20Responsibilities_0.pdf)
- 10 SA Health. Department for Health and Wellbeing organisational chart, 2021. Available: <https://www.sahealth.sa.gov.au/wps/wcm/connect/15e6b63b-de18-4388-a831-49900f88c69c/Visio-Organisational+Chart++Department+for+Health+and+Wellbeing++January+2021.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-15e6b63b-de18-4388-a831-49900f88c69c-nwmjZCi>
- 11 Victoria Department of Health and Human Services. Senior officers in health, 2019. Available: <https://www.dhhs.vic.gov.au/senior-officers-health>
- 12 Sheard S, Donaldson LJ. *The nation's doctor: the role of the Chief Medical Officer 1855-1998*. Abingdon: Radcliffe, 2006.
- 13 Kennedy EB, Vikse J, Chauhan C. *Canadian COVID-19 social impacts survey rapid summary of results #1: risk perceptions, trust, impacts, and responses*. Toronto: York University, 2020. [https://figshare.com/articles/Canadian\\_COVID-19\\_Social\\_Impacts\\_Survey\\_-\\_Summary\\_of\\_Results\\_1\\_Risk\\_Perceptions\\_Trust\\_Impacts\\_and\\_Responses/12121905](https://figshare.com/articles/Canadian_COVID-19_Social_Impacts_Survey_-_Summary_of_Results_1_Risk_Perceptions_Trust_Impacts_and_Responses/12121905)
- 14 Hood C, Lodge M. *The politics of public service bargains*. Oxford: Oxford University Press, 2006.
- 15 Horton R. Offline: science and the breakdown of trust. *Lancet* 2020;396:945.
- 16 Pearson A. We're a nation sick of being lied to – and it is breeding a dangerous mistrust in our leaders. *The Telegraph*, 3 Nov 2020. Available: <https://www.telegraph.co.uk/women/life/nation-sick-lied-breeding-dangerous-mistrust-leaders/>
- 17 Quinn B. Video appears to show Chris Whitty being verbally abused in street. *The Guardian*, 02 Feb 2021. Available: <https://www.theguardian.com/uk-news/2021/feb/02/chris-whitty-video-appears-show-verbally-abused-street>
- 18 Adams R, Stewart H. Whitty at odds with Johnson over "big bang" reopening of schools in England. *The Guardian*, 19 Feb 2021. Available: <https://www.theguardian.com/education/2021/feb/19/whitty-at-odds-with-johnson-over-big-bang-reopening-of-schools-in-england>
- 19 Health and Environment Committee. *Inquiry into the public health and other legislation (extension of expiring provisions) amendment bill 2020*. Brisbane: Queensland Parliament, 2021. <https://www.parliament.qld.gov.au/documents/committees/HEC/2020/PublicHealth2020/trns-22Jan2021-PH.pdf>
- 20 Robertson J. Chief health officer doctor Jeannette young — the most powerful person in Queensland. *ABC News*, 22 Jan 2021. Available: <https://www.abc.net.au/news/2021-01-23/coronavirus-queensland-cho-powers-inquiry-parliament/13079924>
- 21 Braid D. Hinshaw rebuts academic critics who call her the "saddest case". *Calgary Herald*, 16 Nov 2020. Available: <https://calgaryherald.com/opinion/columnists/braid-dr-hinshaw-rebuts-academic-critics-who-call-her-the-saddest-case>
- 22 Godlee F, Looi M-K. The BMJ interview: Chris Whitty, England's Chief Medical Officer, on COVID-19. *BMJ* 2020;371:m4235.
- 23 Weber B. Public health must balance science and society: former top doctor. *CBC news*, 2020. Available: <https://www.cbc.ca/news/canada/edmonton/covid-public-health-1.5823286> [Accessed 1 Dec 2020].
- 24 Cairney P, Oliver K. Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Res Policy Syst* 2017;15:35.
- 25 Jackson J. U.K. government defends ignoring scientists' virus advice. *CTV News*, 13 Oct 2020. Available: <https://www.ctvnews.ca/health/coronavirus/u-k-government-defends-ignoring-scientists-virus-advice-1.5143179>
- 26 Smith K. *Beyond evidence-based policy in public health*. London: Palgrave Macmillan, 2013.
- 27 Sass N, Haddon C, Nice A. Science advice in a crisis. Institute for Government; 2020. [https://www.instituteforgovernment.org.uk/sites/default/files/publications/science-advice-crisis\\_0.pdf](https://www.instituteforgovernment.org.uk/sites/default/files/publications/science-advice-crisis_0.pdf)
- 28 Independent Sage. What is independent SAGE?, 2021. Available: <https://www.independentsage.org/home/>
- 29 Cairney P. The UK government's COVID-19 policy: assessing evidence-informed policy analysis in real time. *Br Polit* 2021;16:90–116.
- 30 Christensen J. Expert knowledge and policymaking: a multi-disciplinary research agenda. *Policy Polit* 2020;49:455–71.
- 31 Cairney P. *The politics of evidence-based policy making*. Palgrave Macmillan, 2016
- 32 Kenny C. In a state of death and despair, Daniel Andrews has lost touch with reality. *The Australian*, 04 Sept 2020. Available: <https://www.theaustralian.com.au/commentary/in-a-state-of-death-an-despair-daniel-andrews-has-lost-touch-with-reality/news-story/2b22dfd22c9ea75ca6f7d2be3bf7bbd6>
- 33 Lynch L. Palaszczuk accused of "hiding behind the smile" of Chief Health Officer. *Brisbane Times*, 17 Jan 2021. Available: <https://www.brisbanetimes.com.au/politics/queensland/palaszczuk-accused-of-hiding-behind-the-smile-of-chief-health-officer-20210117-p56unyh.html>
- 34 AHPPC. Australian health protection principal Committee (AHPPC) coronavirus (COVID-19) statement on 22 March 2020, 2020. Available: <https://www.health.gov.au>

- au/news/australian-health-protection-principal-committee-ahppc-coronavirus-covid-19-statement-on-22-march-2020-0
- 35 Le Grand C. Welcome to Victoria, the Doomsday state. *The Age*, 01 May 2020. Available: <https://www.theage.com.au/national/victoria/welcome-to-victoria-the-doomsday-state-20200501-p54p49.html>
- 36 Deputy chief medical officer press conference about COVID-19 on 20 May 2020, 2020. Australian Government Department of Health. Available: <https://www.health.gov.au/news/deputy-chief-medical-officer-press-conference-about-covid-19-on-20-may-2020>
- 37 Lynch L, Koslowski M. 'The political dilemma': Queensland's border war ignites early election talk. *Brisbane Times*, 28 May 2020. Available: <https://www.brisbanetimes.com.au/national/queensland/the-political-dilemma-queensland-s-border-war-ignites-early-election-talk-20200528-p54x7u.html>
- 38 NSW coronavirus borders war between premier Gladys Berejiklian and WA's Mark McGowan intensifies. *ABC News*, 21 May 2020. Available: <https://www.abc.net.au/news/2020-05-21/nsw-coronavirus-border-war-gladys-berejiklian-mark-mcgowan/12268412>
- 39 Mizen R. High Court rejects Palmer Bid to end WA border ban. *Australian Financial Review*, 06 Nov 2020. Available: <https://www.afr.com/politics/federal/high-court-rejects-palmer-s-bit-to-overturn-wa-border-ban-20201106-p56c12>
- 40 Ilanbey S. Michael O'Brien cautions Tim Smith against "loony" Premier comment. *The Age*, 10 May 2020. Available: <https://www.theage.com.au/politics/victoria/michael-o-brien-cautions-tim-smith-against-loony-premier-comment-20200510-p54rkj.html>
- 41 Parkhurst JO. *The politics of evidence: from evidence-based policy to the good governance of evidence*. Routledge, 2017.
- 42 Fafard P, Wilson LA, Cassola A, et al. Communication about COVID-19 from Canadian provincial Chief Medical Officers of Health: a qualitative study. *CMAJ Open* 2020;8:E560–7.