



This is a peer-reviewed, final published version of the following document, © 2021 The Author(s). Published by Elsevier Ltd. and is licensed under Creative Commons: Attribution-Noncommercial-No Derivative Works 4.0 license:

Paterson, P. ORCID logoORCID: <https://orcid.org/0000-0002-4166-8248> and Clarke, Richard ORCID logoORCID: <https://orcid.org/0000-0002-1060-3142> (2021) Climate change risk communication: a vaccine hesitancy perspective. Lancet Planetary Health, 5 (4). e179-e180. doi:10.1016/S2542-5196(21)00027-9

Official URL: [https://doi.org/10.1016/S2542-5196\(21\)00027-9](https://doi.org/10.1016/S2542-5196(21)00027-9)

DOI: [http://dx.doi.org/10.1016/S2542-5196\(21\)00027-9](http://dx.doi.org/10.1016/S2542-5196(21)00027-9)

EPrint URI: <https://eprints.glos.ac.uk/id/eprint/11016>

Disclaimer

The University of Gloucestershire has obtained warranties from all depositors as to their title in the material deposited and as to their right to deposit such material.

The University of Gloucestershire makes no representation or warranties of commercial utility, title, or fitness for a particular purpose or any other warranty, express or implied in respect of any material deposited.

The University of Gloucestershire makes no representation that the use of the materials will not infringe any patent, copyright, trademark or other property or proprietary rights.

The University of Gloucestershire accepts no liability for any infringement of intellectual property rights in any material deposited but will remove such material from public view pending investigation in the event of an allegation of any such infringement.

PLEASE SCROLL DOWN FOR TEXT.

Climate change risk communication: a vaccine hesitancy perspective



Late last year in 2020, the UK government announced their ten point plan for a green industrial revolution.¹ It is excellent to see the government moving towards the UK's goal of net-zero carbon emissions by 2050, focusing on sustainable energy, protecting our natural environment, and increasing green public transport, cycling and walking. However, the success of any net-zero carbon emissions strategy is contingent on public co-operation and support. The human complexities around rapid societal change is something the government has become well acquainted with over the past year with the COVID-19 pandemic. If the government want to fulfil the largely technological, green revolution they have planned, they would do well to pay attention and take notes in the coming months as they try to encourage a fatigued and nervous public to take a COVID-19 vaccine. As experts in vaccine hesitancy, we provide three key lessons in risk communication that are needed to successfully maintain public support for policies designed to quickly and substantially cut carbon emissions.

The first key lesson is that the public must not be forgotten during the rapid transition to net-zero carbon emissions. Just as every vaccine that remains in the vial is 0% effective, every green technological breakthrough is similarly useless in getting to net-zero if it remains unutilised. With vaccination, a prevalent unfounded rumour or a general apprehension around safety or efficacy, if left unaddressed, can spread through social connections, be amplified on social media, and ultimately reduce confidence, cause a dip in vaccine coverage, and potentially even the downfall of a vaccination programme.² Similar opposition is foreseeable with the adoption of green technologies, including nuclear power³ during the transition to net-zero carbon emissions, and it will be important to listen to and engage with the public, translating evidence-informed policies, and fine-tuning and refining sustainable policies and processes based on public feedback before and as they are implemented.

The second key lesson is to identify and support trusted messengers. For a message, whether that be a call to vaccinate against COVID-19 or a call to reduce meat consumption, to be heard and acted upon, the

source of such a message first needs to be trusted. For many, a top-down message from a government is sufficient, however, for others, a message might also need to be echoed by respected community or religious leaders.⁴ With health-care professionals regularly being ranked the highest trusted profession in the UK,⁵ their support and leadership for vaccination campaigns is demonstrably important. They also have an equivalent pivotal role to play in communicating climate change health risk to the public, and in promoting and championing behavioural changes towards healthy and sustainable lifestyles.

Finally, if your message is not being heard, humanise the data. In 2015, Catherine Hughes lost her 4-week-old baby, Riley, to whooping cough (pertussis). At the time, Riley was too young to receive his first round of immunisations, and the pertussis vaccine that is currently given to pregnant women to cover the immunity gap had not yet been introduced in Catherine's home country of Australia. In the aftermath of this tragic event, Catherine and her husband started a campaign, Light for Riley, through which they tell their story and inform expectant parents about the importance of vaccination in pregnancy.⁶ Narratives, such as that of Riley and his mother, tap into what the cognitive psychologist Paul Slovic describes as "risk as feeling" whereby instinctive and intuitive reactions to danger are activated in a way that statistics (risk as analysis) do not reach.⁷ Just as such narrative-based pro-vaccine advocacy has its place within vaccination campaigns, similar approaches might play a role in our journey to net-zero carbon emissions. Reframing targets in terms of local and immediate health ramifications, and telling the stories that support this framing, might be a useful means of reaching previously unreceptive sections of the public.

In terms of the way forward, with the COVID-19 pandemic, we have seen how quickly our society can modify our behaviours for the common good, with major reductions in travel and business activities, and consequentially a rapid decrease in carbon emissions over a short period of time.⁸ As the UK recovers from this devastating pandemic, society's aim must be for this

decrease in emissions to become the norm, rather than an abnormality caused by the pandemic. To succeed, we must work together engaging with the public and trusted community leaders towards this common goal.

We declare no competing interests. PP is affiliated to the National Institute for Health Research Health Protection Research Unit in Immunisation at London School of Hygiene and Tropical Medicine in partnership with Public Health England. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, the Department of Health or Public Health England.

Copyright © 2021 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-NC 4.0 license.

Pauline Paterson*, Richard M Clarke
pauline.paterson@lshtm.ac.uk

The Vaccine Confidence Project, Department of Infectious Disease Epidemiology, London School of Hygiene and Tropical Medicine, London WC1E 7HT, UK (PP); Primary Care, Population Sciences and Medical Education, University of Southampton, Southampton, UK (RMC)

- 1 HM Government. The ten point plan for a green industrial revolution. 2020. <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution> (accessed Nov 25, 2020).
- 2 Ikeda S, Ueda Y, Yagi A, et al. HPV vaccination in Japan: what is happening in Japan? *Expert Rev Vaccines* 2019; **18**: 323–25.
- 3 Ramana MV. Nuclear power and the public. *Bulletin of the Atomic Scientists* 2011; **67**: 43–51.
- 4 Ruijs WL, Hautvast JL, Kerrar S, Van der Velden K, Hulscher ME. The role of religious leaders in promoting acceptance of vaccination within a minority group: a qualitative study. *BMC Public Health* 2013; **13**: 511.
- 5 Ipsos MORI. Ipsos MORI veracity index 2020. 2020. <https://www.ipsos.com/ipsos-mori/en-uk/ipsos-mori-veracity-index-2020-trust-in-professions> (accessed Dec 13, 2020).
- 6 Gavi The Vaccine Alliance. 'Light for Riley'—our mission to protect families from vaccine-preventable diseases. 2015. <https://www.gavi.org/vaccineswork/light-for-riley-our-mission-to-protect> (accessed Dec 1, 2020).
- 7 Slovic P, Peters E. Risk perception and affect. *Current directions in psychological science* 2006; **15**: 322–25.
- 8 Liu Z, Ciais P, Deng Z, et al. Near-real-time monitoring of global CO₂ emissions reveals the effects of the COVID-19 pandemic. *Nature Communications* 2020; **11**: 1–12.