Public health interventions: the elephant in the room of the health system crisis

Caroline Shaw, Christine Cleghorn

Since 2020, the "rules of engagement" for our health system, the expected and relatively predictable level of ill-health in the community, have changed.[1] COVID-19 has increased demand for healthcare through multiple pathways. Firstly, through managing those acutely unwell with COVID-19 infection, which during 2022 has been a significant source of hospitalisation over the three waves. Secondly, by creating a large burden of "catch up" care needed for those people whose care was delayed due to beds being occupied by those infected with COVID-19. Thirdly, as a result of long COVID, which, for some people, requires ongoing multidisciplinary specialist care. Fourthly, because of a deterioration in mental health associated with the pandemic and the public health measures to manage it.[2] Finally, due to the loss of children and young people from the education system or from lower educational attainment which has been caused by disrupted education—may also lead to poorer health later in life through altered life opportunities and trajectories.[3] So, even if COVID-19 disappeared tomorrow, the legacy of health impacts through other pathways will remain.

This increased demand for healthcare is being managed by a workforce experiencing illness itself, causing high levels of shortages. Long-standing health workforce shortages have been amplified by COVID-19, and burnout, exhaustion and distress amongst clinical staff are endemic and acute. We see this healthcare supply/demand mismatch playing out in the media, with multiple stories of long waits and delays in care in the emergency department (ED), sometimes with catastrophic results. There will also be disasters happening that are less visible but will ultimately lead to poorer health outcomes. For example, delays in diagnosis or initiation of care for cancer or heart disease, or poorer management of diabetes because of difficulty accessing primary care.

We also know that a stressed health system exacerbates inequities. For example, the drop off in childhood vaccinations for all children in recent years has been worse for Māori and Pacific children,[4] and lung cancer registrations and investigations seemed to reduce for Māori, but not for non-Māori/non-Pacific people, during the 2020 lockdown.[5] An under pressure health system is the type of setting in which healthcare provider implicit bias may be more likely to impact on healthcare decisions, potentially disadvantaging Māori further.[6]

There are no easy or quick fixes to increasing the capacity of the health system. Health professionals take many years to train and almost every high-income country is in the same situation as us,[7,8] fighting over the same international pool of health professionals.[9] Recruiting healthcare workers from low-income countries, with less resilient health systems, to plug gaps in our own workforce is ethically dubious.[10] Moreover, Aotearoa New Zealand is a signatory to a World Health Organization (WHO) Voluntary Code of Practice aimed at ensuring that low-income countries are not disadvantaged by this practice.[11]

This is a grim analysis, and it demands that we do things differently. And we can. Alongside training more health professionals and creating a healthy and safe work environment that allows for their sustainable long-term employment, we also need to focus on how we can reduce demand for healthcare.

We recently coordinated a series of blogs in which we asked topic experts to identify two to three evidence-based public health interventions that, if put in place, would rapidly reduce demand for healthcare in Aotearoa New Zealand. These covered topics such as child health, population mental health, injury, infectious diseases, housing, transport and food (the full blog series can be found here: https://blogs.otago.ac.nz/pubhealthexpert/).

While there is common perception that public health actions take decades to have impacts, the authors of these blogs identified a wide range of interventions that would have immediate and enduring impacts on health, and thus on our health system. These included interventions

such as vaccination, raising alcohol taxes, lowering drink driving levels, a health-based approach to drug harms, speed limit reductions, increasing benefit levels, alterations to streets to promote cycling and walking and reformulation of processed foods.[12–17] These interventions would impact on a wide range of health conditions, both physical and mental. Many would also have benefits to other sectors, for example through improved productivity or reduced greenhouse gas emissions.[18,19] Finally, many of them have already been recommended by reviews or are suggested actions in Government strategies.

As a detailed example, alterations to urban streets to promote cycling and walking through speed limit reductions, establishing car free areas, low traffic neighbourhoods and pop-up cycling infrastructure rapidly create measurable changes in injury risk, air and noise pollution exposure, crime, and physical activity.[20–24] These improvements in health risk factors have immediate as well as long-term effects on physical and mental health. For example, moderate or vigorous physical activity such as cycling is associated with reductions in anxiety and depression,[25–28] and air pollution improvements are associated with immediate reductions in asthma and respiratory admissions (and associated with long-term health improvements).[29,30] Temporary street furniture like planter boxes can be used to create networks of cycle lanes and eliminate through traffic on suburban streets—changes such as these can then be made permanent over time. These changes have been made rapidly and cheaply both in New Zealand during the 2020 lockdown and internationally over the same time period.[31] We also know that the Government actually wants to enable these types of changes, as they have recently finished consulting on a regulatory package that would make it easier for councils to take action.[32] However, if the Government is serious about delivering the health gains that are possible then it would be more proactive, rather than just enabling councils to do so if they chose to. This would include setting targets and funding delivery of the length of separated cycleways that evidence suggests is needed to maximise cycling uptake (around 150–200km/100,000 people[33]), and creating ambitious targets for low traffic neighbourhoods (such as in London where some local councils are planning to convert entire boroughs into low traffic neighbourhoods).

There is a wealth of resources to support the use of public health measures as a part of our solution to the health system crisis. We have a new Public Health Agency tasked with strengthening population and public health, ministers who support public health action, the re-formed Public Health Advisory Committee providing independent science-based advice to the Minister of Health, colleges and professional organisations with powerful voices when it comes to public health action,[34] as well as motivated and supportive professionals who are trusted by the community.

Putting in place public health interventions that reduce the need for healthcare should be an explicit part of our strategy to manage the health system crisis. There is a direct link between the speed limit or the level of alcohol tax, and the time people are waiting for care in ED or the length of surgical waitlists. The Government has shown that it can act quickly and decisively in a crisis, and policy that seemed impossible can be delivered rapidly. Now is the time for policymakers and the health sector to leverage all available solutions to our present crisis.

COMPETING INTERESTS
Nil.

AUTHOR INFORMATION
Caroline Shaw: Department of Public Health, University of Otago, Wellington, New Zealand.
Christine Cleghorn: Department of Public Health, University of Otago, Wellington, New Zealand.

CORRESPONDING AUTHOR
Caroline Shaw: Department of Public Health, University of Otago, Wellington, PO Box 7343, Newtown, Wellington 6242, New Zealand. E: caroline.shaw@otago.ac.nz

REFERENCES

1. McCay L. Covid continues to disrupt: what is the plan to deal with it? BMJ. 2022;378:o1780. doi:10.1136/bmj.o1780.
2. World Health Organization. Mental Health and COVID-19: Early evidence of the pandemic’s impact: Scientific brief. 2022.
3. Zajacova A, Lawrence EM. The Relationship Between Education and Health: Reducing Disparities Through a Contextual Approach. Annu Rev Public Health. 2018;39(1):273-289. doi:10.1146/annurev-publhealth-031816-044628.
4. The Immunisation Advisory Centre. National Immunisation Coverage for New Zealand, up to May 2021. 2021. Available at: https://www.immune.org.nz/sites/default/files/publications/Coverage%20Report%20-%20July%202021.pdf.
5. Gurney JK, Dunn A, Liu M, et al. The impact of COVID-19 on lung cancer detection, diagnosis and treatment for Māori in Aotearoa New Zealand. N Z Med J. Jun 10 2022;135(1556):23-43.
6. Zestcott CA, Blair IV, Stone J. Examining the presence, consequences, and reduction of implicit bias in health care: A narrative review. Group Process Interg. Jul 2016;19(4):528-542. Doi:10.1177/1368430216642029.
7. McLellan A, Abbasi K. The NHS is not living with covid, it’s dying from it. BMJ. 2022;378:o1779. Doi:10.1136/bmj.o1779.
8. Pagel C, Yates CA. The NHS is facing the bleakest midwinter. BMJ. 2022;379:o2550. doi:10.1136/bmj.o2550.
9. Lorgelly P. Despite what political leaders say, New Zealand’s health workforce is in crisis – but it’s the same everywhere else blog. 2022. Available at: https://theconversation.com/despite-what-political-leaders-say-new-zealands-health-workforce-is-in-crisis-but-its-the-same-everywhere-else-187256.
10. Saluja S, Rudolfson N, Massenburg BB, Meara JG, Shrime MG. The impact of physician migration on mortality in low and middle-income countries: an economic modelling study. BMJ Glob Health. 2020;5(1):e001535. Doi:10.1136/bmjgh-2019-001535.
11. World Health Assembly. WHO Global Code of Practice on the International Recruitment of Health Personnel. 2010. Available at: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/WHA_RES_63.16.pdf.
12. Shaw C, Macmillan A, Woodward A. Public Health Solutions Series: Simple transport system changes could quickly relieve the crisis in our hospitals. Public Health Expert blog. 2022. Available at: https://blogs.otago.ac.nz/pubhealthexpert/public-health-solutions-series-simple-transport-system-changes-could-quickly-relieve-the-crisis-in-our-hospitals/.
13. Cleghorn C, MacKay S. Public Health Solutions Series: Improving the cost, composition and availability of foods can save lives. Public Health Expert blog. 2022. Available at: https://blogs.otago.ac.nz/pubhealthexpert/public-health-solutions-series-improving-the-cost-composition-and-availability-of-foods-can-save-lives/.
14. Wilson N. Public Health Solutions Series: Two Injury Prevention Strategies to Reduce Pressure on the Health System. Public Health Expert blog. 2022. Available at: https://blogs.otago.ac.nz/pubhealthexpert/public-health-solutions-series-two-injury-prevention-strategies-to-reduce-pressure-on-the-health-system/.
15. Chambers T, A. M. Public Health Solutions Series: Public policy options to address alcohol-related harm in Aotearoa. Public Health Expert blog. 2022. Available at: https://blogs.otago.ac.nz/pubhealthexpert/public-health-solutions-series-public-policy-options-to-address-alcohol-related-harm-in-aotearoa/.
16. Cunningham R. Public Health Solutions Series: Mental health services can’t solve a mental health crisis: public mental health priorities in Aotearoa. Public Health Expert blog. 2022. https://blogs.otago.ac.nz/pubhealthexpert/public-health-solutions-series-mental-health-services-cant-solve-a-mental-health-crisis-public-mental-health-priorities-in-aotearoa/.
17. D’Souza A, Turner N. Public Health Solutions Series: Good health in childhood is vital for lifelong wellbeing: time for a preventive approach. Public Health Expert blog. 2022. Available at: https://blogs.otago.ac.nz/pubhealthexpert/

public-health-solutions-series-good-health-in-childhood-is-vital-for-lifelong-wellbeing-time-for-a-preventive-approach/.

18. Greer SL, Falkenbach M, Siciliani L, McKee M, Wismar M, Figueras J. From Health in All Policies to Health for All Policies. Erratum in: Lancet Public Health. 2022 Jul 28;7(8):e718-e720. doi:10.1016/S2468-2667(22)00155-4.
19. Shaw C, Randal E, Keall M, Woodward A. Health consequences of transport patterns in New Zealand's largest cities. N Z Med J. 2018 Mar 23;131(1472):64-72. PMID: 29565937.
20. Aldred R, Goodman A. Low Traffic Neighbourhoods, Car Use, and Active Travel: Evidence from the People and Places Survey of Outer London Active Travel Interventions. Findings. 2020;September doi:10.32866/001c.17128.
21. Goodman A, Urban S, Aldred R. The Impact of Low Traffic Neighbourhoods and Other Active Travel Interventions on Vehicle Ownership: Findings from the Outer London Mini-Holland Programme. Findings. 2020;December doi:10.32866/001c.18200.
22. Laverty AA, Goodman A, Aldred R. Low traffic neighbourhoods and population health. BMJ. Feb 22 2021;372:n443. doi:10.1136/bmj.n443.
23. Barcelona AdSPd. Report of results of the environmental and health effects of the Superblocks model in Barcelona. Salut Als Carrers (SAC) Project. 2021. Available at: https://www.aspb.cat/wp-content/uploads/2021/10/English-ASPB_salut-carrers-resultsreport-Superblocks.pdf.
24. Auckland Transport. Speed Limit changes (Tranche1) emerging results Auckland Auckland Transport 2021.
25. Mammen G, Faulkner G. Physical Activity and the Prevention of Depression: A Systematic Review of Prospective Studies. Am J Prev Med. 2013/11/01/ 2013;45(5):649-657. doi10.1016/j.amepre.2013.08.001.
26. Saxena S, Van Ommeren M, Tang KC, Armstrong TP. Mental health benefits of physical activity. Journal of Mental Health. 2005/01/01 2005;14(5):445-451. doi:10.1080/09638230500270776.
27. Rebar AL, Stanton R, Geard D, Short C, Duncan MJ, Vandelanotte C. A meta-meta-analysis of the effect of physical activity on depression and anxiety in non-clinical adult populations. Health Psychol Rev. 2015;9(3):366-78. doi:10.1080/17437199.2015.1022901.
28. Pearce M, Garcia L, Abbas A, et al. Association Between Physical Activity and Risk of Depression: A Systematic Review and Meta-analysis. JAMA Psychiatry. 2022 Jun 1;79(6):550-559. doi: 10.1001/jamapsychiatry.2022.0609. PMID: 35416941; PMCID: PMC9008579.
29. Aix M-L, Petit P, Bicout DJ. Air pollution and health impacts during the COVID-19 lockdowns in Grenoble, France. Environmental Pollution. 2022/06/15/ 2022;303:119134. doi: 10.1016/j.envpol.2022.119134.
30. Peel J, Klein M, Flanders WD, Mulholland J, Tolbert P. Impact of Improved Air Quality During the 1996 Summer Olympic Games in Atlanta on Multiple Cardiovascular and Respiratory Outcomes. 2010. Health Effects Institute Research Report.
31. Buehler R, Pucher J. Cycling through the COVID-19 Pandemic to a More Sustainable Transport Future: Evidence from Case Studies of 14 Large Bicycle-Friendly Cities in Europe and North America. Sustainability-Basel. 2022;14(12):7293.
32. Waka kotahi NZ Transport Agency. Reshaping Streets. NZ Transport Agency. Accessed 9 December 2022, Available at: https://www.nzta.govt.nz/about-us/consultations/archive/reshaping-streets-consultation/.
33. Mueller N, Rojas-Rueda D, Salmon M, et al. Health impact assessment of cycling network expansions in European cities. Prev Med. 2018 Apr;109:62-70. doi: 10.1016/j.ypmed.2017.12.011. Epub 2018 Jan 9. PMID: 29330030.
34. Parliamentary Debates (Hansard) for Arms (Prohibited Firearms, Magazines, and Parts) Amendment Bill — second Reading. [Vol. 737. 2019: 10344. 09 Apr 2019]. Available at: https://www.parliament.nz/en/pb/hansard-debates/rhr/combined/HansDeb_20190409_20190409_08.