Development of key policy recommendations for active transport in New Zealand: A multi-sector and multidisciplinary endeavour

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ABSTRACT

Background: Despite national-level initiatives to encourage active transport (AT) in New Zealand since 2005, rates of AT have continued to decline in most parts of the country, with negative impacts on health and the environment. This article describes the development of key policy recommendations for increasing AT in New Zealand. The goal was to establish a cohesive set of priority recommendations to inform AT decision-making in central and local government, district health boards, public health units and regional sports trusts in New Zealand.

Project description: The development of policy recommendations was a planned outcome of multi-sectoral discussions held at The Active Living and Environment Symposium (TALES; Dunedin, New Zealand; February 2019). A ten-member working group consisting of TALES symposium delegates working in academia, industry and non-governmental organisations led the development of the recommendations. Symposium delegates contributed their expertise to draft recommendations and reports prior to, during and after the symposium. Importance and feasibility of each recommended action were independently evaluated by working group members. The final set of 13 policy recommendations (and 39 associated actions) included: making a national-level commitment to change; establishing a nationally coordinated and funded programme of education and promotion of AT; making a commitment to design cities for people, not cars; and developing a regulatory system that encourages AT. The report aligns with the current New Zealand government's increased focus on wellbeing, walking, cycling, public transport and the Vision Zero approach. A final report was officially launched in April 2019 with presentations to stakeholders April-May 2019.

Conclusions: This cross-sector effort resulted in a report with a set of recommendations designed to stimulate the development of a new AT strategy for New Zealand; prompt setting of targets and monitoring progress/outcomes; and inform New Zealand's response to the World Health Organization's Global Action Plan on Physical Activity 2018–2030.

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1. Background

Cities and towns can be designed as great places to live, rather than great places to move through in a car. Despite initiatives to promote active transport (AT) in New Zealand (NZ) (Ministry of Transport, 2008; Cycling Safety Panel, 2014), the number of cars per capita continues to increase while rates of AT decline (Ministry of Transport, 2015).

In NZ, 86% of the population lives in urban areas (Trading Economics), and by 2050 approximately 91% will live in urban settings (Leeson, 2018). The transport system is dominated by private vehicles; limited availability and utilisation of the public transport system; and low levels of walking and cycling for transport (Shaw and Russell, 2016).

In 2017/2018, 46% of NZ adults did not meet the minimum physical activity guidelines (Ministry of Health, 2019). Physical inactivity increases the risks of obesity and major non-communicable diseases such as type 2 diabetes, coronary artery disease and some cancers (Lee et al., 2012; Kyu et al., 2016). In 2012, air pollution from transport (including heavy transport/freight) contributed to approximately 260 deaths in NZ (Kuschel et al., 2012).

We sought to develop key policy recommendations to increase rates of AT in NZ. The goal was to establish recommendations to guide and inform decision-making in central and local government, district health boards, public health units and regional sports trusts, within the context of the current NZ government's increased focus on wellbeing, walking, cycling, public transport and Vision Zero approach (New Zealand Government, 2018, 2019b). In this article, we describe the methods used to establish the recommendations, associated actions and targets.

2. Methods

2.1. Working group

A ten-member working group with experts from academia, industry and non-governmental organisations (including former staff from the Ministry of Transport) was established one month before The Active Living and Environment Symposium (TALES) symposium (Dunedin, NZ, 13-15 February 2019; www.otago.ac.nz/active-living-2019) (Mandic and Coppell, 2019). The symposium provided a strategic opportunity to involve a wide range of participants. The group planned and led the development of the recommendations during January-April 2019. The working group aimed to leverage the symposium to advance walking and cycling policy proposals that aligned with the interests of the current NZ government.

2.2. Process

A plan and timeline was developed (Fig. 1; Appendix A) and is summarised below.

2.2.1. Preparation

To gain an understanding of approaches taken internationally, AJ reviewed several national strategies for walking and/or cycling (e.g. Department for Transport, 2017; Brisbane City Council, 2012; Queensland Government, 2019). The review provided categorisation ideas and ensured that the final recommendations did not have obvious gaps. The literature review indicated that best practice strategies need to be holistic by considering the overall policy levers, infrastructure, and cultural issues (Land Transport Safety Authority, 2004).

2.2.2. Input from symposium delegates

Fifty-five TALES symposium delegates representing academia, government, health, industry, and not-for-profit organisations
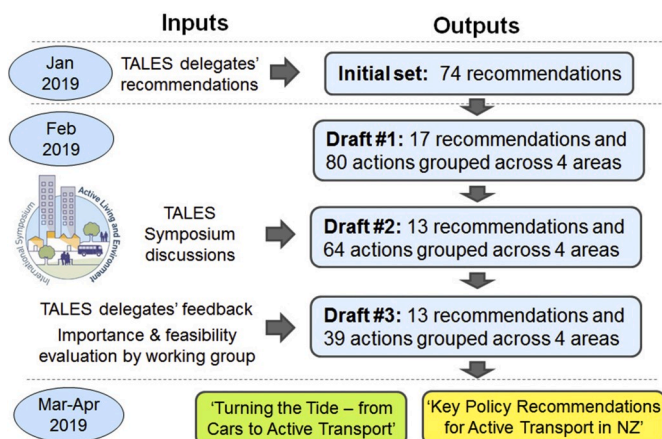

Fig. 1. Development of recommendations: Timeline and processes.

Table 1

Policy recommendations mapped to policy categories of behaviour change wheel.

Policy Recommendation		Policy Category							
		Communication/ Marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental/social planning	Service provision	Surveillance[a]
A. Evaluation, Governance and Funding									
A1	Set and monitor shared targets for the proportion of trips by active modes and public transport.		✓						✓
A2	Ensure that the value of active transport is recognised in policies and investment decisions to allocate the necessary funding for this task.		✓	✓					
A3	Continually update the information available on health and economic impacts of specific active transport interventions.		✓					✓	✓
B. Education and Encouragement/Promotion									
B1	Promote active transport to and from schools.	✓	✓				✓	✓	
B2	Promote active transport to and from workplaces.	✓	✓				✓	✓	
B3	Make public transport more affordable and accessible.			✓		✓			
B4	Improve motorist education.	✓	✓						
C. Engineering (Infrastructure, Built environment)									
C1	Require and fund a universal, interconnected active transport network.		✓	✓		✓	✓	✓	
C2	Design and transform towns and cities for people to ensure positive health and environmental outcomes.		✓		✓	✓	✓		
D. Enforcement and Regulation									
D1	Change the decision making framework/planning rules (that affect transport options) to enable good health and wellbeing at a population level.		✓		✓	✓			
D2	Change regulations to improve road safety for active transport.	✓		✓	✓	✓			
D3	Regulate for healthy transport options to and from schools.	✓			✓				
D4	Improve and enforce regulations for better air quality.				✓	✓			

[a] Although not part of the behaviour change wheel policy categories, surveillance has been added when appropriate to better characterise the policy implications of the proposed recommendations.

provided input. They had expertise in transport, public health, urban design, environment, sustainability, education, physical activity, and sport. Prior to the symposium, delegates were invited to submit up to three policy recommendations based on their expertise, via a cloud-based document. AJ, JL and SM reviewed and organised the suggestions into four broad categories resembling the four or five E's framework (United States Department of Transportation Federal Highway Administration (FHWA), n.d.). This categorisation of recommendations (and associated actions) was reviewed by the working group members and then shared with all delegates prior to the symposium. During the event, delegates discussed draft recommendations, which were modified at a special final day session with active and robust participation. A second draft was sent to delegates for final feedback within two weeks and finalised a week later. This process of iterative consultation to achieve consensus was similar to, but less formal than, the Delphi process (Iqbal and Pipon-Young, 2009) and similar consensus methods (Fink et al., 1984).

2.2.3. Evaluation of importance and feasibility of recommended actions

Using an online survey, working group members independently rated the importance ("Is it really important (will it make a big difference)?") and feasibility ("Is it technically feasible (achievable)?"; "Is it publicly/politically acceptable?"; "Is it relatively affordable?"; "Can it be done quickly?") of each draft recommended action using a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Members provided specific comments regarding wording, modification and/or merging of evaluated actions. SM and JSM analysed the nine survey responses and comments. Only actions that scored highly for both importance and feasibility (average ≥ 3.9 out of 5.0) were retained.

2.2.4. Setting recommended targets for walking and cycling

Setting recommended targets involved the analysis of the 2015–2017 NZ household travel data (Ministry of Transport, 2017) and consideration of how quickly transport behaviour could change. In 2015–2017, 82% of all trips were by car, 13% on foot and 1.3% by bicycle; approximately 30% of all car trips were <2 km and a further 30% were between 2 km and <5 km (Ministry of Transport, 2017). If distances ≤2 km are deemed to be walkable and distances ≤5 km are cyclable (Neves and Brand, 2019), approximately 24% of all trips in NZ in 2015-2017 were within walking distance and an additional 24% were beyond walking but within cycling distance. Taken together, based solely on trip distance, the upper limit of the proportion of all trips that could be completed using only AT modes (walking or cycling) was approximately 60%. When combined with public transport, an even greater proportion of trips involving AT would be possible.

Next, we considered evidence on how quickly changes in people's travel mode could be achieved. In London, United Kingdom, the number of cycling trips doubled between 2005 and 2012 (Transport for London, 2018). In Wellington city, NZ, the number of cycling trips to work increased by 73% between 2006 and 2013 to 3.9% of all trips to work (Wellington City Council, n.d.). These data suggest that doubling the number of cycling trips to work in NZ cities every 10 years is realistic. The number of work commute trips on foot or jogging in Wellington, increased by 11.7% from 18.8% in 2006 to 21.0% in 2013 (Statistics New Zealand, n.d.). If such trends continued over the next 30 years, overall there would be a 50% increase in the proportion of all trips on foot. Recommended targets were rounded up to the nearest 5% to set ambitious targets and avoid any debate created by spurious accuracy.

2.2.5. Finalising recommendations, actions and reports

During March-April 2019, the working group prepared a full (Mandic et al., 2019b) and brief (Mandic et al., 2019a) report. Both reports were officially launched in the presence of 50 stakeholders including the Associate Minister of Transport in Wellington, NZ on April 29, 2019, after which the reports were shared publicly on the TALES Symposium website (www.otago.ac.nz/active-living-2019), Active Living Laboratory website (www.otago.ac.nz/active-living) and via social media.

2.3. Classification of recommendations into policy categories

The recommendations were first grouped into four categories, then for transparency and consistency with existing frameworks of behaviour change interventions, they were mapped to the policy categories of the 'behaviour change wheel' (Michie et al., 2011) (Table 1). This framework assumes that behaviour is influenced by three essential factors: capability, opportunity, and motivation, and any deficits in these can be addressed through a number of intervention functions (e.g., education, incentivisation, training, environmental restructuring). To facilitate implementation of these interventions seven categories of policy are placed around the interventions. These seven policy categories are: Communication/marketing, Guidelines, Fiscal measures, Regulation, Legislation, Environmental/social planning, and Service provision. We added an eighth category called 'surveillance'. The mapping of recommendations to the 'behaviour change wheel' policy framework was initially conducted by EGB and the process was reviewed by JCS and SM and full agreement reached.

3. Results

3.1. Recommendations

Thirteen recommendations for increasing AT in NZ and 39 associated actions were established and grouped across four broad categories:

A. Evaluation, governance and funding (3 recommendations; 11 actions);

  B. Education and encouragement/promotion (4 recommendations; 10 actions);
  C. Engineering (infrastructure, built environment) (2 recommendations; 12 actions); and
  D. Enforcement and regulations (4 recommendations; 6 actions) (Fig. 2; Appendix B).

The key policy recommendations included: making a national-level commitment to change and setting targets; establishing a nationally coordinated and funded programme of education and promotion of AT; creating a commitment to design cities for people, not cars; and developing a regulatory system that encourages AT. Recommendations spanned all seven policy categories included in the 'behaviour change wheel' framework (Michie et al., 2011) plus the 'surveillance' category (Table 1).

3.2. Targets

Given doubling the number of cycling trips to work in NZ cities every 10 years is realistic, and 1.3% of all trips to work were by bicycle in 2015-2017, the recommended proportion of all trips by bicycle would be 1.7% by 2020, 3.5% by 2030, 7% by 2040 and 14% by 2050. Similarly, a doubling of the proportion of all trips on foot was considered an ambitious but achievable target, from 13% in 2015-2017 to 25% by 2050. Meeting the recommended targets for the proportion of all trips on foot (25%), by bicycle (15%) and public transport (15%) by 2050 would result in almost halving the proportion of trips by car - from 82% in 2015-2017 to 45% by 2050.

4. Discussion

The worldwide decline in physical activity (Guthold et al., 2018) along with concerns over global climate change (Watts et al., 2018) and the need to reduce our reliance on fossil fuels all provide urgent impetus to create more sustainable transport systems and active individual travel patterns. The co-benefits of low carbon and healthy travel (Mindell et al., 2011) make it an opportune time for this new attempt at a major change in national and local transport policies in NZ. The results of this project provide findings in two key areas: the policy recommendations and the process.

4.1. The policy recommendations

The *"Turning the Tide"* report (Mandic et al., 2019b) contains a set of 13 policy recommendations, 39 associated actions and targets, and highlights four priority areas: a) leadership through clear goals and accountable governance; b) change in social expectations through education and promotion; c) prioritisation of investment in creating liveable urban environments (not places for the car); and d) the appropriate regulation to support active modes of transport.

Support for the policy recommendations, actions and targets can be found in the latest NZ Government Policy Statement on Land Transport (New Zealand Government, 2018). The statement prioritises the importance of mode shift from private vehicle travel to walking, cycling and public transport, particularly in urban areas. It emphasises the importance of improving safety for pedestrians and cyclists, and it supports transport and land use planning that reduces the need to travel by private vehicle, more frequent and highly patronised public transport services, increasing priority on urban and rural routes for walking, cycling and public transport and better management of parking to reduce subsidies for private vehicle trips.

The recommendations were successfully mapped to the seven policy categories in the 'behaviour change wheel' framework (Michie
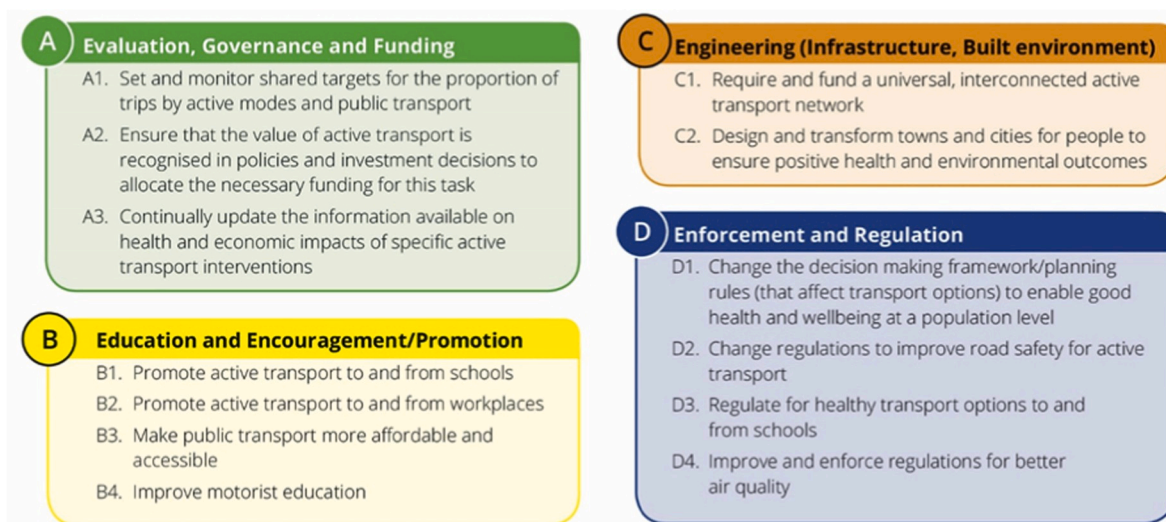

Fig. 2. Summary of key policy recommendations for increasing active transport in New Zealand.

et al., 2011), plus our additional 'surveillance' category. Further, the recommendations cover the "five Es" of transportation planning: engineering, education, encouragement, enforcement, and evaluation (United States Department of Transportation Federal Highway Administration (FHWA), n. d.). This suggests that the recommendations are comprehensive and balanced, and are likely to leverage opportunities to create meaningful change arising from a number of policy areas identified in the behaviour change literature, and it increases the potential for uptake by the transport sector.

The main recommendations are primarily aimed at national government. However, cities and towns, and to a lesser extent, rural authorities, will also need to contribute with policies, funding, and infrastructure improvements to achieve the recommended walking and cycling targets. URBACT, a multimillion Euro programme funded by the European Union, encourages co-operation between cities to develop integrated solutions to common issues around sustainability in urban areas, including AT, through developing and implementing policy and sharing underlying knowledge and expertise (URBACT, 2019). A more recent approach to planning urban mobility is Sustainable Urban Mobility Plans, which are strategic plans "designed to satisfy the mobility needs of people and businesses in cities and their surroundings for a better quality of life", building on existing planning practices and taking into account integration, participation, and evaluation principles (Wefering et al., 2014). The *"Turning the Tide"* recommendations include some of the main characteristics of the Sustainable Urban Mobility Plans (for example, the long term vision and regular monitoring, review and reporting).

Internationally, many cities and jurisdictions are making changes to increase the rates of walking and cycling for transport. They include London (Greater London Authority, 2016), Paris (Pucher and Buehler, 2017), Oslo (Khreis et al., 2017), Barcelona (World Health Organization, n.d.), Copenhagen (Pucher and Buehler, 2017), Bogotá (Diaz Del Castillo et al., 2011), Thessaloniki (URBACT, 2019) and Vancouver (City of Vancouver, n.d.). As with these cities, our policy recommendations cannot be generalised to other countries/cultures or times, but are specific to the current political environment and cultural norms in NZ. Some recommendations would be 'too brave', others 'not brave enough' to have an impact on mobility in NZ today. Accordingly, as the political and cultural environments that encompass mobility in NZ are likely to change, the recommendations presented here should be revisited every two to four years.

4.2. The process

The process undertaken to generate these recommendations provides a method that can be transferred to other countries/regions/cultures/times to prepare policy recommendations for mobility change or other behaviour/cultural changes. The involvement and collaborative efforts of a broad panel of experts; the inclusive process; the development, categorisation, and ranking/filtering of a broad range of recommendations; and presentations of these recommendations nationally offers a rigorous method to prepare policy recommendations for regional/national consideration and action.

The process of involving 55 people in developing a set of recommendations was more straightforward than might have been predicted. Six factors that ensured smooth progress rather than chaos were: 1) a central co-ordinator (SM), assisted by other members of the core group; 2) a dedicated working group member (AJ) who had the time and expertise to analyse and synthesise the wide-ranging suggestions into an initial draft discussion document; 3) an open process with good communication; 4) a rigid timetable to ensure momentum; 5) the use of an electronic platform for sharing ideas and drafting the documents; and 6) a well-structured process, including sufficient time allocated during the symposium for broader discussion. The timing and current context was also important and helpful, with a government minister in place who supports increasing AT as well as a government commitment to respond to the World Health Organization's Global Action Plan on Physical Activity 2018–2030 (World Health Organization, 2018).

4.3. Next steps - translation of recommendations into policy

Giles-Corti and colleagues (2015) published ten strategies that may facilitate translation of active living research into policy. While their focus was on research related to observational and experimental studies, their advice is pertinent to the *"Turning the Tide"* recommendations and increasing the likelihood of implementation. We utilised some of their strategies including: using policy-relevant research; using research methods that are compelling to policy makers; disseminating findings to policy makers using a range of communication avenues/methods; and engaging in advocacy. Our aim was to produce recommendations for policy which were aligned with the current NZ government's increased focus on wellbeing, walking, cycling, public transport and the Vision Zero approach (New Zealand Government, 2018, 2019b). We involved topic experts from different disciplines, including policy makers. Policy stakeholders were involved in the process as symposium delegates. This enabled policy makers to be part of the process of developing the recommendations, thereby enhancing credibility and greater likelihood of uptake.

Since the report launch, the authors have been in discussions with a range of NZ government departments about the adoption of the recommendations. During nine in-person meetings with a total of 232 stakeholders across NZ, stakeholders suggested a range of actions and interventions for encouraging AT, including: the need for national leadership/commitment; policy/legislation; funding for AT; better AT infrastructure; prioritising AT in urban planning; lower traffic speeds; car-free city/town centres; improving the quality and lowering the cost of public transport; and making car travel less convenient. All of these suggestions were aligned with or added more detail to the report recommendations. The findings will continue to be disseminated proactively to key stakeholders throughout NZ via further in-person meetings and at different events and relevant national and international conferences in 2019-2020. In addition, the report has been used in subsequent advocacy efforts to inform the development of Hikoi Ki a Mātauranga – Walking to School recommendations later in 2019 (Living Streets Aotearoa, 2019). Further, the NZ Transport Agency is currently using the report as one of the inputs into their work to consider how to model and set sustainability targets for NZ's transport system.

In NZ, the biggest opportunity ahead will be the next Government Position Statement on Land Transport. The hope is that the new wording will move away from its current interpretation of a 'mode neutral' goal. The NZ Ministry of Transport defines 'mode neutral' as meaning "considering all transport modes when planning and investing, and basing decisions on the merits of each mode to deliver positive social, economic and environmental outcomes" (Ministry of Transport, n.d.). Under the current mode neutral approach, investment has been in the mode which best meets the goals of the investment but the challenge with that approach is that with 82% of all trips in NZ by car, the largest number of people would benefit by making those car trips easier. Therefore, extra impetus needs to be given to investments in AT to move away from the current unbalanced modal shares and prioritise social and environmental as well as economic outcomes. To achieve the goals set in the recent Carbon Zero Act (New Zealand Government, 2019a) and equitably improve the health of New Zealanders, the NZ government will need to set a strategy which sets clear goals around modal shift. Generic words on this will not be enough; there will always be a question of moderating any proposals to change by serving current needs. The only way the fundamental changes needed will be delivered is if specific targets of modal shift are set in the next Government Position Statement on Land Transport. Although New Zealand does not yet have a national strategy or business case for walking and cycling, there are a number of business cases published (e.g., the Benefits of Investing in Cycling [New Zealand Transport Agency, 2016]) or in development (e.g., Business Case for Walking by Auckland Transport). In addition, national (New Zealand Transport Agency, 2019) and Auckland-specific (Auckland Transport, 2019) mode shift action plans were published in 2019, with the national plan referencing the *"Turning the Tide"* report. We expect the existing business cases to provide a suitable political context to gain support for the recommendations. Ideally, the NZ government should adopt the targets for change recommended in the *"Turning the Tide"* report. This would provide a clear aim for those making planning and investment decisions and provide clear accountability for the Government to achieve those goals. Future actions should include a series of meetings and workshops with stakeholders and discussions about how key government entities are taking these recommendations on board (e.g., Auckland Transport Strategy Team).

5. Conclusions

Key policy recommendations for AT in NZ include: setting national targets for modal shift and ensuring public accountability for delivery of those targets; establishing a nationally coordinated and funded programme of education and promotion of AT; creating a commitment to design cities for people, not cars; and developing a regulatory system that encourages the use of AT. This cross-sector effort resulted in a report that has the potential to stimulate the development of a new AT strategy for NZ, prompt setting of targets and monitoring progress/outcomes, and inform NZ's response to the World Health Organization's Global Action Plan on Physical Activity 2018–2030.

Funding

Data statement

The *"Turning the Tide"* report, recommendations and associated actions are publicly available on the Active Living Laboratory website (University of Otago, Dunedin, New Zealand): www.otago.ac.nz/active-living.

Authors' contributions

Sandra Mandic: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Visualization, Writing – original draft, Writing – review & editing; **Andrew Jackson:** Conceptualization, Formal analysis, Investigation, Methodology, Writing – review & editing; **John Lieswyn:** Conceptualization; Data curation, Formal analysis, Investigation, Methodology, Resources, Writing – review & editing; **Jennifer S Mindell:** Conceptualization, Formal analysis Investigation, Methodology, Writing – original draft, Writing – review & editing; **Enrique García Bengoechea**: Conceptualization, Formal analysis, Investigation, Methodology, Writing – review & editing; **John C Spence:** Conceptualization, Formal analysis, Investigation, Methodology, Writing – review & editing; **Kirsten Coppell:** Conceptualization, Funding acquisition, Investigation , Methodology, Writing – review & editing; Celia Wade-Brown: Conceptualization, Investigation, Methodology, Writing – review & editing; **Ben Wooliscroft:** Conceptualization, Investigation, Methodology, Writing – review & editing; **Erica Hinckson:** Conceptualization, Investigation, Methodology, Writing – review & editing.

Declaration of competing interest

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jth.2020.100859.

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