

Institution: University College London		
Unit of Assessment: 4 – Psychology, Psychiatry and Neuroscience		
Title of case study: The Behaviour Change Wheel - more effective interventions in national and international health policy		
Period when the underpinning research was undertaken: 2000 - 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Prof Susan Michie	Professor of Health Psychology	2002 – Present
Dr Lou Atkins	Senior Teaching Fellow	2014 - Present
Period when the claimed impact occurred: 2016 - 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact <p>The success of large-scale health and social interventions often relies on behaviour change – but behaviour is complex ingrained and can be resistant to lasting change. The Behaviour Change Wheel (BCW) is an integrative framework developed at UCL for designing, evaluating and describing effective behaviour change interventions. It has been used globally to create, communicate, implement and evaluate policies and interventions by international organisations (e.g., WHO), national governments (e.g., UK) and non-governmental organisations (e.g., ActionAid) with resulting benefits to health and social welfare. During the COVID-19 pandemic the BCW has informed the UK Government's approach to encouraging public adherence to restrictions and overcoming vaccine resistance.</p>		
2. Underpinning research <p>Impacts reported in this case study arise from research led by Professor Susan Michie published in 2011 [R1]. The research started with a systematic review of behaviour change frameworks from fields including health, environment, social marketing, law and government guidance on general behaviour change. Each of the 19 frameworks identified was rated according to three criteria, whether it was i) coherently structured, ii) comprehensive, and iii) linked to a model of behaviour. No framework met all three criteria so they were synthesised by the three authors into one comprehensive, coherently structured, non-sector-specific framework – the Behaviour Change Wheel (BCW) [R2, R3]. The BCW has a central hub which comprises a simple model of behaviour in terms of the Capability, Opportunity and Motivation needed to perform a Behaviour (COM-B). The COM-B hub is surrounded by two rings, one comprising nine types of interventions and the other comprising seven policy options to deliver interventions [R2]. The initial paper has been accessed 345,000 times, has an Altmetric score of 636 and has been cited more than 2,400 times (CrossRef) in fields as diverse as health, transport, water conservation, upcycling and animal welfare.</p> <p>The paper reporting this framework also contains matrices which provide a systematic method for selecting intervention types and policy options to intervene based on the changes needed in capabilities, opportunities and/or motivations to change the behaviour [R1].</p> <p>The BCW forms the intellectual backbone of UCL's Centre for Behaviour Change (CBC), a multi-disciplinary centre for research, teaching, consultancy and training in behaviour change. The BCW has been used in conjunction with the Theoretical Domains Framework (TDF), also developed by Michie and colleagues [R4, R5]. The latter provides an integrative theoretical framework to enable multidisciplinary understanding of influences on behaviour (from a healthcare delivery perspective but applicable beyond this). The research described a synthesis</p>		

of concepts frequently used within theories of behaviour change into 'domains' of influences on behaviour. Again, in the spirit of making this useful and useable across academic disciplines and occupational domains, a series of questions to elicit insights about the domains were generated, enabling researchers and practitioners to investigate more easily the influences on behaviour [R6]. An example of development and application of the TDF is the systematic design and implementation of an intervention to improve acute low back pain management in primary care [R7]. The integration with the BCW can be seen on p92 of the BCW Guide [R3].

3. References to the research

- [R1] Michie, S., van Stralen, M. M. & West, R. (2011) The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation science*, 6(42). Doi: [10.1186/1748-5908-6-42](https://doi.org/10.1186/1748-5908-6-42) [Nominated for BMC Annual Research Award]
- [R2] <http://www.behaviourchangewheel.com>
- [R3] Michie, S., Atkins, L., & West, R. (2014) *The behaviour change wheel: a guide to designing interventions*. 1st ed. London: Silverback Publishing [Available on request]
- [R4] Michie, S., Johnston, M., Abraham, C., Lawton, R., Parker, D., Walker, A., & "Psychological Theory" Group (2005). Making psychological theory useful for implementing evidence based practice: a consensus approach. *BMC Quality & Safety*, 14(1), 26–33. doi: [10.1136/qshc.2004.011155](https://doi.org/10.1136/qshc.2004.011155)
- [R5] Cane, J., O'Connor, D. & Michie, S. (2012) Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science*, 7(37). doi: [10.1186/1748-5908-7-37](https://doi.org/10.1186/1748-5908-7-37)
- [R6] Atkins, L., Francis, J., Islam, R., O'Connor, D., Patey, A., Ivers, N., Foy, R., Duncan, E. M., Colquhoun, H., Grimshaw, J. M., Lawton, R., & Michie, S. (2017). A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. *Implementation science*, 12(1), 77. doi: [10.1186/s13012-017-0605-9](https://doi.org/10.1186/s13012-017-0605-9)
- [R7] French, S. D., Green, S. E., O'Connor, D. A., McKenzie, J. E., Francis, J. J., Michie, S., Buchbinder, R., Schattner, P., Spike, N., & Grimshaw, J. M. (2012). Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework. *Implementation Science*, 7(38). doi: [10.1186/1748-5908-7-38](https://doi.org/10.1186/1748-5908-7-38)

Key research grants arising from the research:

- Nastouli, E., Manley, E., Hayward, A., Michie, S., Edwards, S., Houlihan, C., Gupta, R., & Shahmanesh, M. COVID-19: Healthcare workers: an in-depth virological analysis and behavioural study during the outbreak. MRC, 2020-2021, GBP1,479,001.39.
- Sniehotta, F. F., Michie, S., Kaner, E., Vlaev, I., Kelly, M. P., Vale, L., Morris, S., Craig, D., Burton, P., Bamba, C., Bonell, C., & Osborn, D. Behavioural Science Policy Research Unit. National Institute of Health Research Policy Research Programme, 2019-2024, GBP4,822,113.
- Michie, S. & Hayward, A. (joint PIs), Denexas, S., Freemantle, N., Horne, R., Thomas, J., Atkins, L., Shallcross, L., Fragaszy, E., Mindell, J., Kostkova, P., Hardy, E., Tarrant, C., West, J., Smeeth, L., Robson, J., & Conolly A. Preserving antibiotics through Safe stewardship: PASS. ESRC, 2017-2020, GBP1,999,896
- Free, C., McCarthy, O., French, R., Wellings, K., Hickson, F., Michie, S., Roberts, I., Edwards, P., Hart, G., Bailey, J., Devries, K., & Baraitser, P. A randomised controlled trial of an intervention delivered by mobile phone messaging to reduce sexually transmitted infections (STI) by increasing sexual health precaution behaviours in young people. NIHR Public Health Research Programme, 2015-2020, GBP2,014,712
- Bailey, J., Murray, E., Hart, G., Michie, S., Rait, G., Hunter, R., Symonds, M., Ang, J., Freemantle, N., Stephenson, J., & Anderson, J. An interactive computer-based programme

to increase condom use: intervention development and pilot trial. NIHR Health Technology Assessment Programme, 2013-2015, GBP507,017

4. Details of the impact

Covid-19

Internationally, the BCW has been adopted by the World Health Organization (WHO) and implemented to produce a range of guidance and toolkits in response to the COVID-19 pandemic [S1].

From the WHO European Regional Office:

- *Pandemic fatigue – reinvigorating the public to prevent COVID-19. Policy framework for supporting pandemic prevention and management* (downloaded 600 times and used by several Member States)
- *Tailoring immunization programmes* (downloaded 1300 times and implemented in more than 13 countries in the WHO European region since publication in 2019 to improve service delivery and local programmes)

From the WHO Behavioural Insights and Sciences (BIS) team:

- A BCW-derived survey tool and guidance '*Behavioural insights on COVID-19, 29 July 2020*' which has been downloaded 3200 times, translated into several languages (including Russian) and implemented in 17 countries for behavioural data collection
- A BCW-derived framework for designing, evaluating and implementing behavioural interventions across the whole organisation (awaiting dissemination in 2021)
- A standardized BCW-derived tool created by the Measuring Behavioural and Social Drivers (BeSD) of Vaccination working group to be rolled in several countries in 2021
- Consultancy on Covid-19 and templates to summarise survey data and develop action plans

In the UK, the cross-Government Covid-19 Scientific Advisory Group for Emergencies (SAGE) has used the BCW framework and COM-B model of behaviour to organise evidence, provide theoretical underpinning and develop structured policy, for example in identifying options for increasing adherence to social distancing and shielding vulnerable people. Sir Patrick Vallance, Government Chief Scientific Adviser [S2], confirms: "*Professor Michie's Behaviour Change Wheel has contributed to the theoretical basis of recommendations for behaviour change to minimise COVID-19 transmission. The Behaviour Change Wheel has helped to synthesise and summarise evidence, supporting SAGE to make evidence-based recommendations. Specifically, the Behaviour Change Wheel has been used as an organising framework to help SPI-B and SAGE to understand adherence to NHS Test and Trace. The Behaviour Change Wheel was also used to evaluate options for increasing adherence to social distancing and shielding vulnerable people. This work informed SAGE's recommendations relating to the 'stay at home' restriction and subsequent measures.*"

National health policy

The Head of Behavioural Insights and Evaluation Lead [S3] for Public Health England (PHE) states that "*The research by UCL has contributed significantly to positively changing behavioural science practice across the UK and international public health sector, NHS, and UK government. We have used and promoted the BCW and associated frameworks/tools because they are scientifically sound and comprehensive in scope with regards to both policy levers and process (from understanding behaviour to intervention design and evaluation).*" PHE commissioned members of the UCL team to bring their expertise into PHE and the Cross-Government Behavioural Insights Network. They worked collaboratively on the development of *Improving people's health: Applying behavioural and social sciences to improve population health and wellbeing in England* [S4], the first strategy of its kind that aims to better enable the public health system to maximise the contribution of behavioural and social sciences to improving and

protecting the public's health and wellbeing. The document cites the UCL research [R1, R3, R5] and PHE believes it *"has pioneered the application of these methods to priority areas of public health policy and demonstrated to policy-makers that this is a useful new approach that can strengthen the translation of evidence into policy"* [S3]. To support and encourage the use of the research in practice, PHE asked the UCL team to produce practical guides on applying the BCW for national and local government and their partners [S5].

The Republic of Ireland's Department of Health have used the BCW to develop their widely circulated 2018 Implementation Guide and Toolkit for national clinical guidelines which instructs all public health bodies on how to translate clinical guidelines effectively into practice. The Head of Standards, Health Information & Standards Directorate, Ireland states, *"This toolkit used the Behaviour Change Wheel to assist Guideline Development groups to identify behaviours that need to change, understand these behaviours and consider a range of effective strategies. Guideline developers found the BCW relevant and practical and ensured that clinical guidelines were put into practice on the ground, rather than being left sitting on a shelf!"* (S6).

International Development

Action Aid Ireland is an international charity working to reduce poverty with a particular focus on women's rights (reducing gender-based violence, supporting education for girls and providing professional support to women). Analysis of the charity's 2012-2016 Women's Rights Programme found that although it had been very successful in raising awareness of women's rights, it had been much less successful at delivering the change they wished to bring about. In 2017 they began working closely with the UCL team to adapt and implement the principles of the Behaviour Change Wheel to interventions aimed at reducing gender-based violence in the context of the charity's 2017-2022 Women's Rights Programme in Nepal, Kenya and Ethiopia. The success of interventions developed by local partners using the BCW led the charity to produce *'A field guide to developing gender-focused international development programmes'* in 2020 [S7] to embed the BCW approach across their activities. The manual is co-authored by UCL team member Chadwick and its structure and content draw and build upon The Behaviour Change Wheel: A Guide to Designing Interventions [R3] and the Local and National Government guides from PHE [S5].

5. Sources to corroborate the impact

- [S1] Letter of support from Behavioural Insights and Sciences Lead, WHO including links to documents.
- [S2] Email from the UK Government Chief Scientific Advisor.
- [S3] Statement from Head of Behavioural Insights, PHE.
- [S4] *Improving people's health: Applying behavioural and social sciences to improve population health and wellbeing in England*. PHE. 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/744672/Improving_Peoples_Health_Behavioural_Strategy.pdf
- [S5] PHE behaviour change guides for central local government and partners. <https://www.gov.uk/government/publications/behaviour-change-guide-for-local-government-and-partners>
- [S6] Email from Head of Standards, Health Information & Standards Directorate, Health Information and Quality Authority, Ireland.
- [S7] *Using the Behaviour Change Wheel framework within gender-focused international development programmes: a field guide*. Action Aid Ireland. 2020. <https://actionaid.ie/wp-content/uploads/2020/10/ActionAid-Behaviour-Change-Manual.pdf>