

# Designing trials of Universal Basic Income for health impact: identifying interdisciplinary questions to address

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## Abstract

### Background

A large body of evidence indicates the importance of upstream determinants to health. Universal Basic Income (UBI) has been suggested as an upstream intervention capable of promoting health by affecting material, biopsychosocial and behavioural determinants. Calls are emerging across the political spectrum to introduce an emergency UBI to address socio-economic insecurity. However, although existing studies indicate effects on health through cash transfers, UBI schemes have not previously been designed specifically to promote health.

### Methods

In this article, we scope the existing literature to set out a set of interdisciplinary research challenges to address in designing a trial of the effectiveness of UBI as a population health measure.

### Results

We present a theoretical model of impact that identifies three pathways to health impact, before identifying open questions related to regularity, size of payment, needs-based supplements, personality and behaviour, conditionality, and duration.

### Conclusions

These results set, for the first time, a set of research activities required in order to maximise health impact in UBI programmes.

**Keywords:** Public health; Universal Basic Income; public policy; socio-economic status

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## Introduction

The UK Government has recently committed to a ‘prevention agenda’.<sup>1</sup> With concern about the NHS being understood as the ‘National Hospital Service’,<sup>2</sup> there is increasing focus on preventing morbidity. In this regard, a large body of evidence indicates the impact of socio-economic status on health outcomes, as has been evident in COVID-19 mortality rates. A recent issue of *The Lancet Public Health*<sup>3</sup> explores that relationship in modern Britain and examines the effect of ‘upstream interventions’ on health. We have suggested that Universal Basic Income (UBI) – an unconditional, regular cash transfer to all adult citizens – could serve as one such intervention by affecting material, biopsychosocial and behavioural pathways to health.<sup>4</sup> In part because of this research, the UK Labour Party committed to trialling UBI in such cities as Liverpool and Sheffield in its 2019 Manifesto.<sup>5(pp.17-19) 6(p.60)</sup> Demonstrating cross-party support for the policy, Hull City Council has sought permission to conduct a trial of UBI in the wake of the Conservative Party’s success in the 2019 General Election,<sup>7</sup> while the Scottish National Party has called for its emergency introduction during the COVID-19 pandemic.<sup>8</sup>

The fact that policy makers are concerned with *trialling* the policy indicates both the expected controversy attached to granting citizens ‘free money’ and belief that evidence-based-policy retains the capacity to transform public opinion.<sup>9</sup> These assumptions persist despite concern about the ineffectiveness of quantitative data in securing public support<sup>10</sup> and the possibility of confirmation bias leading to ‘policy-based evidence’, in which evidence is interpreted through the lens of existing beliefs.<sup>11</sup> While empirical examination of UBI is catching up with the extensive body of theoretical work,<sup>12</sup> studies conducted on cash transfers are of such varying quality, scale and focus that few substantive conclusions can be drawn on the policy’s potential effect on health. In this article, we scope the existing literature on UBI to present a case for prospective health impact that is universally applicable. However, given the authors’ geographic area of research and practise, we situate discussion of policy implications within a UK context.

This article identifies a set of interdisciplinary research challenges to address in designing an effective UBI trial for health promotion. We establish the parameters of existing trials and map out three pathways to health impact before identifying challenges related to size of payment, needs-based supplements, personality and behaviour and duration. We do not present this work as comprehensive (or the reviews as systematic), but as the first attempt to codify the questions that need to be answered in advance of and during trials.

### *Data from existing cash transfers*

UBI is a system of universal cash transfers to (adult) citizens. It ensures a minimum income, but, unlike the UK’s Universal Credit,<sup>13</sup> is not allocated on the basis of need or means. It is often associated with left-wing political parties, but has been supported by thinkers across the political spectrum as a means of promoting rights,<sup>14</sup> efficiency,<sup>15</sup> growth<sup>16</sup> and supporting flexibility in the labour market.<sup>17</sup> Because UBI has previously been seen as an economic instrument, the notion of deploying UBI specifically for reasons of public health, and grounding those reasons in the medical literature, marks a key development within the field.<sup>4</sup>

However, before we can consider that case, it is essential to clarify that there have been few examples of cash transfer programmes in general and those presented as comparable to UBI differ significantly in ways that may restrict the generalisability of findings. A full review of such trials was undertaken by Gibson, Hearty and Craig,<sup>18</sup> and as such, we do not seek to replicate this work here. Perhaps the most commonly cited examples of trials are those that relate to Negative Income Tax (NIT) provision. NIT schemes ensure that citizens’ incomes reach a basic threshold by providing payment where income from other sources fails to meet the threshold, with payment gradually tapering and being replaced by taxation as incomes from

other sources increase. Gibson, Craig and Hearty<sup>19(p.28)</sup> identified five NIT trials in North America: the New Jersey Graduated Work Incentive Experiment<sup>20</sup>, the Rural Income Maintenance Experiment (RIME),<sup>21</sup> the Gary Income Maintenance Experiment,<sup>22</sup> the Seattle/Denver Income Maintenance Experiment (SIME/DIME)<sup>23</sup> and the Manitoba Basic Annual Income Experiment (Mincome).<sup>24</sup> These targeted interventions were much closer to Universal Credit in the UK and lacked both the universality and unconditionality of UBI. The same is true of the 2017-2018 Finnish trial, which constituted an unconditional minimum income guarantee for benefit claimants.<sup>25</sup>

Whereas these schemes differ in terms of their being conditional on low income, other systems differ in terms of their being conditional on an individual's membership of an ethnic group, rather than citizenship of a country. These include the US case of Tribal Casino Cash Transfers (such as the Great Smoky Mountains Study), in which Indigenous Americans receive twice annual taxable cash payments.<sup>26</sup> Beyond this, while proponents of UBI in liberal democracies generally support weekly or monthly transfers to mimic salaries, the Tribal transfers and the Alaska Permanent Dividend Fund involve annual or biannual transfers).<sup>27</sup>

Moreover, even programmes designed experimentally to examine impact of cash transfers on indicators of health and wellbeing differ radically. For example, Haushofer and Shapiro's<sup>28</sup> trial of unconditional cash transfers to low-income household units in Kenya not only focused on households instead of individuals, it also involved trialling payments to the husband and the wife, varying the size of the payment and using lump-sum and monthly payment schedules.<sup>29</sup> In the Madhya Pradesh Unconditional Cash Transfer Pilot (MPUCT), payments of varying sizes to adults and children within villages were made via bank and physical 'cash-in-hand' transfers over 12 months. However, this was not permanent and represented an extremely low proportion of the cost of living for the very poorest in Indian society.<sup>30</sup>

As a universal benefit, UBI cannot be properly evaluated without evidence of its impact on all individuals, including those from middle and higher socioeconomic backgrounds. Moreover, some of the health effects may be emergent on the policy's being applied at population scale, rather than restricted or experimental subsets. As such, contrary to assertion in other accounts,<sup>31</sup> no trial of an unconditional, universal payment across a population encompassing all individuals irrespective of socio-economic status has occurred, meaning that evidence of impact has to be carefully contextualised.

### *Evidence of impact on health*

Given the disparate nature of studies, findings presented as evidence of the impact of the policy have to be understood as necessarily limited and context specific. However, trials of programmes that resemble elements of UBI have noted an effect on health.<sup>31</sup> Kangas et al.<sup>25(p.24)</sup> found that respondents in the two-year-long Finnish trial reported reduced stress related to economic circumstances. The Finnish Ministry of Social Affairs and Health recently reported that analyses of the full trial showed that those who received the UBI 'described their wellbeing more positively than respondents in the control group. They were more satisfied with their lives and experienced less mental strain, depression, sadness and loneliness'.<sup>32</sup> The US case of Gary Indiana, in which low income families received a minimum income guarantee, demonstrated a positive impact on birth weight.<sup>22</sup> Similarly, Chung, Ha and Kim's<sup>33</sup> study of the Alaska Permanent Fund Dividend – which varies each year and was distributed to every individual residing there for more than six months – found that birthweight increased by 17.7g per \$1,000 received by the household compared with babies born in states with the same observable birthweight pattern in the pre-treatment period. The likelihood of low birthweight was also reduced by 14% (0.7 percentage points). The MPUCT pilot was associated with a 46% reduction in illness and injury not requiring inpatient hospital treatment, but no impact on

more serious ill-health, perhaps because of the limited period of intervention.<sup>34</sup> Forget's<sup>24</sup> study of Mincome established a series of impacts, such as decreased hospital admissions and improved adult mental health, the latter of which was also found in RIME.<sup>35</sup> Using Great Smoky Mountains Study data, Costello et al.<sup>36</sup> found reduced rates of psychiatric and substance abuse disorders among children whose family income was supplemented as a result of the Tribal payments compared with non-tribal children. This effect persisted into adulthood.

Not all the impacts are health-promoting. Evans and Moore<sup>37</sup> demonstrate a 13% increase in deaths among urban Alaskans in the week following annual payment of the Alaska dividend. Bruckner, Brown and Margerison-Zilko<sup>38</sup> found that the risk of accidental death more than doubled in the month after the biannual Eastern Cherokee payment. While there is *prima facie* reason to suppose that the severity of impact associated with sudden (bingeing) increase in activity in response to the lump sum (including through alcohol and narcotic consumption) would not be as marked with weekly or monthly payments, this can only be verified through examination of the effect of such payments at population level.

### *Pathways to health impact*

We suggest that there are three main qualitatively distinct, but potentially mutually reinforcing, prospective biopsychosocial pathways to impact on health.<sup>4</sup> Each relates to the effect of the intervention on the social determinants of health. Our unique model of impact (see fig. 1) builds upon and expands the findings of *The Black Report*,<sup>39</sup> but assesses UBI as a universal upstream intervention as opposed to the targeted interventions proposed in the Report's recommendations. The direct health impacts may be interrelated, but, epidemiologically, it is not possible, in the absence of representative trials, to establish the extent to which and the circumstances under which they interrelate.

The first pathway is impact on resource scarcity. Absolute poverty imposes limits on the quality and quantity of resources to which individuals have access in satisfying their needs. Where UBI increases resources and reduces absolute poverty, there is potential for improvement in material capacity for promotion of health.<sup>40</sup> This pathway is supported by reported increases in food sufficiency in several programmes (see Gary, RIME, MPUCT and Casino).

The second pathway is impact on chronic stress.<sup>41</sup> Stress is an evolutionary adaptation that effects a cascade of biological changes that prime the body to respond first psychologically and then biologically to threatening stimuli.<sup>42(p.612)</sup> The medical literature indicates that long-term exposure to stress is linked to a number of health conditions.<sup>43</sup> Chronic psychological stress is 'associated with a greater risk of depression, cardiovascular disease (CVD), diabetes, autoimmune diseases, upper respiratory infections (URIs), and poorer wound healing'.<sup>43(p.5995)</sup> Stimuli for stress all relate to unpredictability.<sup>44</sup> When individuals feel subject to processes that can lead to destitution, they are left in a state of perpetual preparedness for threat.<sup>45</sup> This includes the judgement of others – social evaluative threat<sup>46</sup> where that judgement serves as a cue for exclusion or domination by removing social sources of predictability (group bonds, shared resources, absence of inter-subjective threat). This is a relative, rather than absolute, source of ill-health. Where UBI can provide a bulwark against destitution, it can serve as a stress-reducing means of ameliorating 'health inequalities and the structural conditions that put people "at risk of risks"'.<sup>47(p.S47)</sup> As Kangas et al.<sup>25(p.25)</sup> put it, 'The predictability of the basic income is thought to reduce the level of stress due to less bureaucracy and more certain flow of income'.

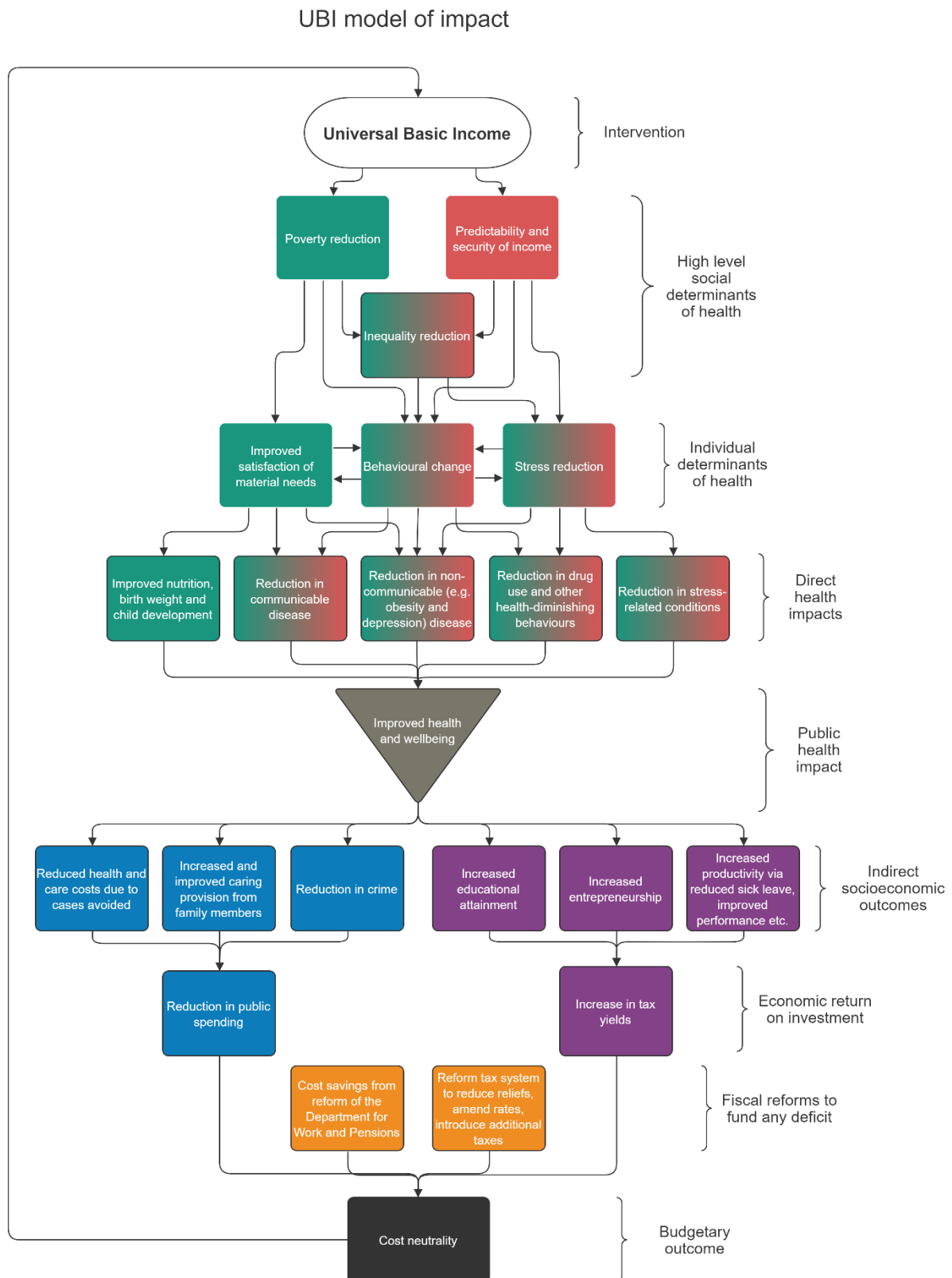


Figure 1. UBI model of impact

The third pathway relates to behaviour. Individuals facing scarcity or unpredictability in their lives may invest less in behaviours that positively promote their long-term health and well-being.<sup>48</sup> Explanations for this foreshortening of perspective differ, from scarcity causing a restriction on the available cognitive resources required to make good long-term decisions,<sup>49</sup> to a more immediate focus being a rational response to situations where there are immediately

pressing challenges or the long-term future is uncertain.<sup>50 51</sup> Perception of inequality can also induce violent and dangerous behaviours; individuals in situations of disadvantage who perceive little prospect of ‘catching up’ with the rest of society through legitimate means may be more likely to opt for these.<sup>52</sup> One advantage of UBI schemes is that they mark out all members of society as equal in an important and visible sense: all get an equal share, and do not have to go through assessments that some find demeaning,<sup>40</sup> in which they are powerless, in order to get it. Thus, their effect on perceived inequality may be greater than their actual redistributive effect.

The conditionality of current welfare systems can exacerbate behavioural effects on health: individuals may choose behaviours that diminish their health in order to qualify for conditional welfare support<sup>53 54</sup>; or may avoid addressing underlying conditions for fear of losing pay.<sup>40</sup> By increasing anticipated long-term survival and by removing behavioural disincentives to health, UBI may foster health-promoting decisions. This may be indicated by a decrease in health-reducing behaviour among recipients of Tribal Cash Transfers.<sup>36</sup>

The model of health impact stems from the existing literature on income (size, source and conditionality) and health and also sets out the unique features of UBI as a public health intervention to enable design of trials capable of evaluating the intervention effectively. Uniquely, it suggests that UBI is specifically valuable as an upstream intervention by virtue of its ability to offer predictability and security to all, in contrast to targeted, conditional schemes that are prone to arbitrary assessment.

#### *Design considerations for health*

Because UBI has been advanced most keenly by economists, trials have often been designed specifically with effects on employment, consumption and growth in mind.<sup>25</sup> However, designing trials to achieve health and wellbeing impact as one of several qualitatively distinct, but related, outcomes, requires a different set of considerations. There are answers to some questions that can be given with confidence. For example, payments need to be regular and predictable (i.e. monthly) to reduce negative impacts, such as bingeing, associated with lump-sum payments.<sup>37 38</sup> Similarly, our model of impact indicates strongly that payments need to be broadly unconditional, since it is predictability and security of payment that reduces stress and enables individuals to invest in long-term health promoting behaviour.<sup>48</sup> For example, the Finnish trial found that simply substituting an unconditional for a conditional payment of €560 had a significant effect on self-rated stress and other psychological aspects of wellbeing (Kangas et al. 2019, 25).<sup>25(p.25)</sup> Indeed, these impacts were felt within the duration of a two-year trial. This indicates that, while there are many impacts that may emerge after the trial (such as reduction in stress-related morbidity), two years presents a window in which participants feel secure, alter behaviour and begin to experience measurable key health outcomes that can have cascading long-term impacts. There are, though, three issues that require further consideration.

#### *Size of payment*

Our model suggests that minimum payment size ought to be determined by the cost of satisfying basic needs. In the UK, we can ascertain this via the Joseph Rowntree Foundation’s Minimum Income Standard (MIS). This seeks to determine what households need for ‘a decent living standard, considered the minimum by the general public’,<sup>55</sup> which is more than survival alone, and enough for healthy living.<sup>56</sup> The MIS for 2019 was £313.68 per single adult (without children) per week (net of direct taxes, such as income tax and national insurance, but gross of council tax).<sup>55(p.7)</sup> The MIS cost including housing would therefore be £1,359 per month per adult or £16,311 per year, with a cost to the state of £854.7bn per year. However, there are means of reducing the overall burden on the state by retaining housing and council tax benefit

and reducing the universal payment. This results in £203.90 per week, £884 per month and £10,603 per year per adult with a £555.6bn cost to the state. Clearly, this remains significant.

### *Needs-based supplements*

The MIS cannot provide for those who have additional needs, such as disabled people,<sup>55(p.4)</sup> who constituted approximately 21% of the population in 2018/19.<sup>57(Table 4.2)</sup> Even taking into account the existing targeted welfare system, Scope found that disabled adults face additional costs of £583 per month to have the same standard of living as their non-disabled peers.<sup>58</sup> Additionally, there is significant intersectionality between disabled people, people with long-term and multiple health conditions (including stress-related conditions,<sup>59</sup> people with lower socioeconomic status (SES) and older people..<sup>54(pp.118-123)</sup> As such, the health of disabled people is particularly prone to changes in social policy.<sup>53</sup> Current conditional payments, such as Personal Independence Payment (PIP), which has been gradually replacing Disability Living Allowance since 2013, is intended to support additional need through intensive, regular assessment of the impact of impairments and health conditions. Further support is provided through benefits such as the weekly Carers' Allowance (CA) to individuals who care non-professionally for a disabled person for at least 35 hours per week and systems like Access to Work that cover the additional costs disabled people may face in the workplace. However, assessment itself is seen as a cause of harm, since there is a perverse incentive for health-diminishing behaviours such as inactivity<sup>53 54</sup> and opioid prescription use<sup>40</sup>. Given that a key justification for UBI is its elimination of bureaucratic complexity and assessment and given that assessment has the potential to harm, there are grounds to remove arbitrary discrimination in assessment<sup>60</sup> and perverse incentives in needs-based allocations. However, paying large additional sums in the order of £583 to all seems unfeasible, so a less onerous system of assessment or provision of services, rather than cash for use in a market of service providers, may be preferable. Indeed, many additional needs could potentially be met through bolstered public services – such as through the Labour Party's<sup>6</sup> proposal for a National Care Service – and provision of transport, albeit with caveats stemming from the disability rights movement that has strongly advocated systems that promote autonomy in decision-making.<sup>61</sup>

It may be that a trial should focus solely on replacement of means-tested, and leave in place needs-tested, benefits. Alternatively, an experimental model that assesses impact of including a needs-tested element could be developed.

### *Personality and behaviour*

A recurring criticism of UBI is that it constitutes an incentive for behaviour conducive to ill-health and idleness. Anderson,<sup>62</sup> for example, argues that UBI promotes freedom without responsibility and undermines social obligation to work. Given that inactivity can contribute to ill-health, there are reasons to examine this seriously. Evidence from a nationwide Iranian system of transfers<sup>63</sup> and an analysis of 16 Basic Income Guarantee trials<sup>64</sup> indicates that transfers result in no meaningful reductions in employment-related activity, while, the final report for the Finnish trial found that the employment rate for UBI recipients improved slightly more than for the control group.<sup>32</sup> Moreover, to the extent there is any evidence relating to long-term effects of unconditional cash transfers on behaviour and personality, it tends to document positive rather than negative effects overall. Akee, Copeland, Costello and Simeonova<sup>65</sup> found that an 'increase in unconditional household income improves child personality traits, emotional well-being, and behavioral health'. Mehra, Stopnitzky and Alloush's<sup>66</sup> study of poor households in Uganda found that a poverty graduation programme increased scores on traits that represent socialization and stability, while drought had the opposite effect. This may be because, as our model suggests, reducing uncertainty and precariousness allow a longer-term outlook. This can have significant impacts on the nature of

work and activity people pursue,<sup>53</sup> with selection of more meaningful activities, such as caring and entrepreneurship, improving people's wellbeing further.<sup>67</sup> We can only speculate on the impact of people pursuing different careers on their previous places of employment, but there is a body of evidence to suggest that increasing employee bargaining power improves working conditions, making previously poorly regarded work places more attractive.<sup>5</sup>

### *Duration*

For clear financial reasons, the interventions studied are generally short-term, even if the data on health cover a much longer period. The 2018 Finnish trial was not extended beyond two years, despite calls from the nation's social security agency to do so.<sup>68</sup> Reporting of this decision focused on the schemes' 'failure', in preliminary analyses, to increase employment, despite improved wellbeing for participants<sup>69 70</sup>. This perceived failure resulted from the centre-right Government's narrow policy objectives, which focused solely on reducing unemployment<sup>71</sup> and ultimately the UBI recipients were shown to have increased employment more than controls. The pathways to health noted above require that individuals perceive their circumstances to be predictable and secure in order for changes in behaviour to be felt and health outcomes measured. Practically, Government funding can likely only be committed to cover a period equal to an electoral cycle minus the time taken to establish a funding stream and project. In the UK Parliamentary system, this leaves perhaps a period of approximately three years.

It is clear is that the duration of a pilot needs to be sufficiently long to replicate a 'feeling' of enduring income security. The pathways to health impact noted above are unlikely to be demonstrable if a cliff-edge return to insecurity is looming within the data-collection period. There are several options available that could be explored to achieve this, including ensuring match funding from national and local government, which could be used consecutively to overlap separate budget periods with short-term and medium-term goals for each partner. Again, establishing this requires collaboration between psychologists, epidemiologists and policy makers. The possibility that political considerations preclude a longer trial means that there needs to be serious methodological examination of means of evaluating health impact via proxy measures, such as self-rated health and stress, as well as deaths and health service utilization and biomarkers, such as inflammation. Without comprehensive measurement, a short trial may underestimate long-term effects, many of which would emerge through prevention from income shocks for a prolonged period of individuals' lives. Moreover, given that the aetiological period of behaviours, such as smoking, extends into decades,<sup>72</sup> and given that one prospective impact of UBI is to affect behaviour, it is likely that modelling will be an essential feature of evidence gathering.<sup>4</sup>

## **Discussion**

**Main finding of this study** This article scopes a series of tasks to be completed in designing UBI specifically for health impact. The absence of substantive interdisciplinary collaboration on the areas above prior to other trials highlights the extent to which a significant potential feature of UBI's impact has been overlooked.

### **What is already known on this topic**

It is clear that there is a great deal of evidence supporting the notion of a correlation between upstream economic interventions and positive physical and mental health outcomes. However, it is equally clear that there remain significant gaps in the literature relating to the optimal design of a trial of UBI that seeks to examine health impact.



## What this study adds

This study has identified several key questions in designing a trial of UBI for health impact and sought to make some headway in answering them. Importantly, it has also resulted in a model of health impact that may support understanding of how such an upstream intervention may be affected by, and impact on, the work of colleagues in a wide range of disciplines.

## Limitations of this study

We did not have space to examine two related questions in this article. First, how should we measure health impact during and after a trial? There needs to be serious, thoroughgoing development of a universal standard in research protocols for UBI-like upstream interventions in order that impact can be evaluated accurately. We set out elsewhere<sup>73</sup> specific objectives to this end, arguing that two types of protocols are required: 1) for pilot interventions with specific cohorts in order for proof of concept and refinement of trials and 2) for trials in communities with over 50,000 inhabitants in which the multiple impacts of the intervention can be felt at a collective level. Second, how should UBI be funded if significant health impact can be demonstrated? We have developed a method for calculating through microsimulation modelling both the cost, health impact and funding regime for a UBI designed for health.<sup>74</sup> Here, it is important to note that, in the time of a pandemic, savings in substantial healthcare expenditure from UBI are likely to be more attractive than the economic case alone,<sup>41</sup> with evidence that perceptions of reasonable public spending have changed.<sup>75</sup> In that light, one final consideration that we cannot address here is that of scale. The smaller the trial, the smaller the impact of individual-level effects on the economy, including inflation, housing costs and wages. If governments are serious about trials as a means of providing evidence for policy, any such UBI trial needs to be large – perhaps at whole city level – in order for side-effects and unintended consequences of payments to individuals to become clear.

## References

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- <sup>1</sup> Department of Health and Social Care. *Prevention is better than cure*. London: GOV.UK, 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/753688/Prevention\\_is\\_better\\_than\\_cure\\_5-11.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/753688/Prevention_is_better_than_cure_5-11.pdf) (10 January 2019, date last accessed).
- <sup>2</sup> Department of Health and Social Care, Hancock M. Prevention is better than cure – Matt Hancock’s speech to IANPHI. *GOV.UK* (online) 2018. <https://www.gov.uk/government/speeches/prevention-is-better-than-cure-matt-hancocks-speech-to-ianphi>. (10 January 2020, date last accessed).
- <sup>3</sup> The Lancet Public Health. Income, health, and social welfare policies. *Lancet Public Health* 2020;5(3):e127. doi: [10.1016/S2468-2667\(20\)30034-7](https://doi.org/10.1016/S2468-2667(20)30034-7).
- <sup>4</sup> Johnson EA, Johnson MT, Webber L. Measuring the health impact of Universal Basic Income as an upstream intervention: holistic trial design that captures stress reduction is essential. *Evid Policy* 2020. doi: [10.1332/174426420X15820274674068](https://doi.org/10.1332/174426420X15820274674068).
- <sup>5</sup> Standing G. *Basic Income as Common Dividends: Piloting a Transformative Policy*. London: Progressive Economy Forum, 2019. [https://www.progressiveeconomyforum.com/wp-content/uploads/2019/05/PEF\\_Piloting\\_Basic\\_Income\\_Guy\\_Standing.pdf](https://www.progressiveeconomyforum.com/wp-content/uploads/2019/05/PEF_Piloting_Basic_Income_Guy_Standing.pdf). (10 February 2020, date last accessed).
- <sup>6</sup> The Labour Party. *The Labour Party Manifesto 2019*. London: The Labour Party, 2019. <https://labour.org.uk/wp-content/uploads/2019/11/Real-Change-Labour-Manifesto-2019.pdf>. (14 October 2020, date last accessed).

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- <sup>7</sup> Halliday J. Hull asks to be first UK city to trial universal basic income. *The Guardian* (online) 2020. <https://www.theguardian.com/uk-news/2020/jan/19/hull-universal-basic-income-trial>. (20 January 2020, date last accessed).
- <sup>8</sup> Crerar P, Bloom D, Milne O. Private renters to be protected from eviction under coronavirus law. *Mirror* (online) 2020 <https://www.mirror.co.uk/news/politics/breaking-coronavirus-private-renters-protected-21713009>. (19 March 2020, date last accessed).
- <sup>9</sup> Roberts NC, King PJ. Policy Entrepreneurs: Their Activity Structure and Function in the Policy Process. *J Public Adm Res Theory* 1991;1(2):147–175. doi: [10.1093/oxfordjournals.jpart.a037081](https://doi.org/10.1093/oxfordjournals.jpart.a037081).
- <sup>10</sup> Macintyre S. Evidence in the development of health policy. *Public Health* 2012;126(3):217–219. doi: [10.1016/j.puhe.2012.01.026](https://doi.org/10.1016/j.puhe.2012.01.026).
- <sup>11</sup> Saltelli A, Giampietro M. What is wrong with evidence based policy, and how can it be improved? *Futures* 2017;91:62–71. doi: [10.1016/j.futures.2016.11.012](https://doi.org/10.1016/j.futures.2016.11.012).
- <sup>12</sup> Ruckert A, Huynh C, Labonté R. Reducing health inequities: is universal basic income the way forward? *J Public Health (Oxf)* 2018;40(1):3–7. doi: [10.1093/pubmed/fox006](https://doi.org/10.1093/pubmed/fox006).
- <sup>13</sup> Government Digital Service. Universal Credit. *GOV.UK* (online) 2020. <https://www.gov.uk/universal-credit/what-youll-get>. (25 February 2020, date last accessed).
- <sup>14</sup> Pettit P. A Republican Right to Basic Income? *Basic Income Stud* 2008;2(2). doi: [10.2202/1932-0183.1082](https://doi.org/10.2202/1932-0183.1082).
- <sup>15</sup> Gordon NJ. The Conservative Case for a Guaranteed Basic Income. *The Atlantic* (online) 2014. <https://www.theatlantic.com/politics/archive/2014/08/why-arent-reformicons-pushing-a-guaranteed-basic-income/375600>. (10 January 2020, date last accessed).
- <sup>16</sup> Sheahan A. *Basic income guarantee: your right to economic security*. Basingstoke: Palgrave Macmillan, 2012.
- <sup>17</sup> Harrop A, Tait C. *Universal basic income and the future of work*. London: Fabian Society & TUC, 2017. <https://www.tuc.org.uk/sites/default/files/UBI.pdf>. (14 October 2020, date last accessed).
- <sup>18</sup> Gibson M, Hearty W, Craig P. The public health effects of interventions similar to basic income: a scoping review. *Lancet Public Health* 2020;5(3):e165–e176. doi: [10.1016/S2468-2667\(20\)30005-0](https://doi.org/10.1016/S2468-2667(20)30005-0).
- <sup>19</sup> Gibson M, Hearty W, Craig P. *Universal basic income A scoping review of evidence on impacts and study characteristics*. Glasgow: What Works Scotland, 2018. <http://whatworksscotland.ac.uk/wp-content/uploads/2018/10/WhatWorksScotlandBasicIncomeScopingReview1210FINAL.pdf> (14 October 2020, date last accessed).
- <sup>20</sup> Kershaw D, Fair J, Watts HW eds. *The New Jersey income-maintenance experiment volume I: Operations, surveys, and administration*. New York: Academic Press, 1976.
- <sup>21</sup> Bawden DL, Harrar WS. Design and Operation. In: Palmer JL, Pechman JA, eds. *Welfare in rural areas: the North Carolina-Iowa income maintenance experiment*. Washington DC: Brookings Institution, 1978:23–54.
- <sup>22</sup> Kehrer BH, Wolin CM. Impact of Income Maintenance on Low Birth Weight: Evidence from the Gary Experiment. *J Hum Resour* 1979;14(4):434–462. doi: [10.2307/145316](https://doi.org/10.2307/145316).
- <sup>23</sup> Widerquist K. A failure to communicate: what (if anything) can we learn from the negative income tax experiments? *J Socio Econ* 2005;34(1):49–81. doi: [10.1016/j.socec.2004.09.050](https://doi.org/10.1016/j.socec.2004.09.050).
- <sup>24</sup> Forget EL. The Town with No Poverty: The Health Effects of a Canadian Guaranteed Annual Income Field Experiment. *Can Public Policy* 2011;37(3):283–305. doi: [10.3138/cpp.37.3.283](https://doi.org/10.3138/cpp.37.3.283).
- <sup>25</sup> Kangas O, Jauhiainen S, Simanainen M, Ylikännö M. *The basic income experiment 2017–2018 in Finland: Preliminary results*. Helsinki: Ministry of Social Affairs, 2019. <http://julkaisut.valtioneuvosto.fi/handle/10024/161361>. (19 February 2020, date last accessed).
- <sup>26</sup> Akee R, Simeonova E, Copeland W, Angold A, Costello EJ. Young Adult Obesity and Household Income: Effects of Unconditional Cash Transfers. *Am Econ J Appl Econ* 2013;5(2):1–28. doi: [10.1257/app.5.2.1](https://doi.org/10.1257/app.5.2.1).
- <sup>27</sup> Widerquist K, Sheahan A. The United States: The Basic Income Guarantee — Past Experience, Current Proposals. In: Murray MC, Pateman C, eds. *Basic Income Worldwide*. London: Palgrave Macmillan UK, 2012:11–32.
- <sup>28</sup> Haushofer J, Shapiro J. The Short-term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya. *Q J Econ* 2016;131(4):1973–2042. doi: [10.1093/qje/qjw025](https://doi.org/10.1093/qje/qjw025).
- <sup>29</sup> Haushofer J, Shapiro J. The Long-term Impact of Unconditional Cash Transfers: Experimental Evidence from Kenya. *Working paper* (online) 2018. [https://jeremypshapiro.appspot.com/papers/Haushofer\\_S Shapiro\\_UCT2\\_2018-01-30\\_paper\\_only.pdf](https://jeremypshapiro.appspot.com/papers/Haushofer_S Shapiro_UCT2_2018-01-30_paper_only.pdf). (10 January 2019, date last accessed).
- <sup>30</sup> SEWA Bharat. *A little more, how much it is*. New Delhi: SEWA Bharat and UNICEF, 2014. <https://sewabharat.org/wp-content/uploads/2015/07/Report-on-Unconditional-Cash-Transfer-Pilot-Project-in-Madhya-Pradesh.pdf>. (13 October 2020, date last accessed).
- <sup>31</sup> Haagh L, Rohregger B. *Universal basic income policies and their potential for addressing health inequities*. Copenhagen: World Health Organisation, 2019.

- [https://www.euro.who.int/\\_data/assets/pdf\\_file/0008/404387/20190606-h1015-ubi-policies-en.pdf](https://www.euro.who.int/_data/assets/pdf_file/0008/404387/20190606-h1015-ubi-policies-en.pdf). (12 October 2020, date last accessed).
- <sup>32</sup> Basic Income Today. The Final Results of Finland's Basic Income Experiment. *Basic Income Today* (online) 2020. <https://basicincometoday.com/the-final-results-of-finlands-basic-income-experiment>. (29 May 2020, date last accessed).
- <sup>33</sup> Chung W, Ha H, Kim B. Money Transfer and Birth Weight: Evidence from the Alaska Permanent Fund Dividend. *Econ Inq* 2016;54(1):576–590. doi: [10.1111/ecin.12235](https://doi.org/10.1111/ecin.12235).
- <sup>34</sup> Beck S, Pulkki-Brännström A-M, Sebastián MS. Basic income – healthy outcome? Effects on health of an Indian basic income pilot project: a cluster randomised trial. *J Dev Effect* 2015;7(1):111–126. doi: [10.1080/19439342.2014.974200](https://doi.org/10.1080/19439342.2014.974200).
- <sup>35</sup> Hannan MT. Noneconomic Outcomes. In: Palmer JL, Pechman JA, eds. *Welfare in rural areas: the North Carolina-Iowa income maintenance experiment*. Washington DC: Brookings Institution, 1978:183–210.
- <sup>36</sup> Costello EJ, Erkanli A, Copeland W, Angold A. Association of Family Income Supplements in Adolescence With Development of Psychiatric and Substance Use Disorders in Adulthood Among an American Indian Population. *JAMA* 2010;303(19):1954–1960. doi: [10.1001/jama.2010.621](https://doi.org/10.1001/jama.2010.621).
- <sup>37</sup> Evans WN, Moore TJ. The short-term mortality consequences of income receipt. *J Public Econ* 2011;95(11):1410–1424. doi: [10.1016/j.jpubeco.2011.05.010](https://doi.org/10.1016/j.jpubeco.2011.05.010).
- <sup>38</sup> Bruckner TA, Brown RA, Margerison-Zilko C. Positive income shocks and accidental deaths among Cherokee Indians: a natural experiment. *Int J Epidemiol* 2011;40(4):1083–1090. doi: [10.1093/ije/dyr073](https://doi.org/10.1093/ije/dyr073).
- <sup>39</sup> Working Group on Inequalities in Health. *Black Report*. London: Department of Health and Social Security, 1980. <https://www.sochealth.co.uk/national-health-service/public-health-and-wellbeing/poverty-and-inequality/the-black-report-1980/black-report-foreword>. (2 August 2020, date last accessed).
- <sup>40</sup> Johnson M, Degerman D, Geyer R. Exploring the Health Case for Universal Basic Income: Evidence from GPs Working with Precarious Groups. *Basic Income Stud* 2019;14(2). doi: [10.1515/bis-2019-0008](https://doi.org/10.1515/bis-2019-0008).
- <sup>41</sup> Johnson MT, Johnson E. Stress, domination and basic income: considering a citizens' entitlement response to a public health crisis. *Soc Theory Health* 2019;17(2):253–271. doi: [10.1057/s41285-018-0076-3](https://doi.org/10.1057/s41285-018-0076-3).
- <sup>42</sup> Schneiderman N, Ironson G, Siegel SD. Stress and Health: Psychological, Behavioral, and Biological Determinants. *Annu Rev Clin Psychol* 2005;1(1):607–628. doi: [10.1146/annurev.clinpsy.1.102803.144141](https://doi.org/10.1146/annurev.clinpsy.1.102803.144141).
- <sup>43</sup> Cohen S, Janicki-Deverts D, Doyle WJ, et al. Chronic stress, glucocorticoid receptor resistance, inflammation, and disease risk. *PNAS* 2012;109(16):5995–5999. doi: [10.1073/pnas.1118355109](https://doi.org/10.1073/pnas.1118355109).
- <sup>44</sup> Van der Kolk B. *The Body Keeps the Score*. New York: Allen Lane, 2014.
- <sup>45</sup> Howard MW. Basic income, liberal neutrality, socialism, and work. *Rev Soc Econ* 2005;63(4):613–631. doi: [10.1080/00346760500364775](https://doi.org/10.1080/00346760500364775).
- <sup>46</sup> Dickerson SS, Kemeny ME. Acute Stressors and Cortisol Responses: A Theoretical Integration and Synthesis of Laboratory Research. *Psychol Bull* 2004;130(3):355–391. doi: [10.1037/0033-2909.130.3.355](https://doi.org/10.1037/0033-2909.130.3.355).
- <sup>47</sup> Thoits PA. Stress and Health: Major Findings and Policy Implications. *J Health Soc Behav* 2010;51(1\_suppl):S41–S53. doi: [10.1177/0022146510383499](https://doi.org/10.1177/0022146510383499).
- <sup>48</sup> Pepper GV, Nettle D. The behavioural constellation of deprivation: Causes and consequences. *Behav Brain Sci* 2017;40:e314. doi: [10.1017/S0140525X1600234X](https://doi.org/10.1017/S0140525X1600234X).
- <sup>49</sup> Mullainathan S, Shafir E. *Scarcity* (Kindle). London: Penguin, 2014.
- <sup>50</sup> Nettle D. Why Are There Social Gradients in Preventative Health Behavior? A Perspective from Behavioral Ecology. *PLoS ONE* 2010;5(10):e13371. doi: [10.1371/journal.pone.0013371](https://doi.org/10.1371/journal.pone.0013371).
- <sup>51</sup> Mell H, Baumard N, André J-B. Time is money. Waiting costs explain why selection favors steeper time discounting in deprived environments. *EcoEvoRxiv* 2019. doi: [10.32942/osf.io/7d56s](https://doi.org/10.32942/osf.io/7d56s).
- <sup>52</sup> Daly M. *Killing the Competition: Economic Inequality and Homicide*. New Brunswick: Transaction Publishers, 2016.
- <sup>53</sup> Johnson E, Spring E. *The Activity Trap*. Manchester: Activity Alliance, 2018. <http://www.activityalliance.org.uk/how-we-help/research/4404-the-activity-trap-benefits-or-being-fit-october-2018>.
- <sup>54</sup> Activity Alliance, IFF Research. *Annual Disability and Activity Survey 2019/20*. Manchester: Activity Alliance, 2020. <http://www.activityalliance.org.uk/how-we-help/research/5563-activity-alliance-annual-disability-and-activity-survey-january-2020>. (12 October 2020, date last accessed).
- <sup>55</sup> Hirsch D. *A Minimum Income Standard for the United Kingdom in 2019*. York: Joseph Rowntree Foundation, 2019. <https://www.jrf.org.uk/report/minimum-income-standard-uk-2019>. (19 February 2020, date last accessed).
- <sup>56</sup> Morris JN, Donkin AJM, Wonderling D, Wilkinson P, Dowler EA. A minimum income for healthy living. *J Epidemiol Community Health* 2000;54(12):885. doi: [10.1136/jech.54.12.885](https://doi.org/10.1136/jech.54.12.885).
- <sup>57</sup> Department for Work and Pensions. *Family Resources Survey 2018/19: Disability Data Tables*. London: GOV.UK. 2020. <https://www.gov.uk/government/statistics/family-resources-survey-financial-year-201819>. (9 October 2020, date last accessed).

- 
- <sup>58</sup> John E, Thomas G, Touchet A. *The Disability Price Tag 2019: Policy report*. London: Scope, 2019. <https://www.scope.org.uk/scope/media/files/campaigns/disability-price-tag-report-2019.pdf>. (19 February 2020, date last accessed).
- <sup>59</sup> Rhode PC, Froehlich-Grobe K, Hockemeyer JR, Carlson JA, Lee J. Assessing stress in disability: Developing and piloting the Disability Related Stress Scale. *Disabil Health J* 2012;5(3):168–176. doi: [10.1016/j.dhjo.2012.03.002](https://doi.org/10.1016/j.dhjo.2012.03.002).
- <sup>60</sup> Pybus K, Pickett KE, Prady SL, Lloyd C, Wilkinson R. Discrediting experiences: Outcomes of eligibility assessments for claimants with psychiatric compared with non-psychiatric conditions transferring to personal independence payments in England. *BJPsych Open* 2019;5(2):e19. doi: [10.1192/bjo.2019.3](https://doi.org/10.1192/bjo.2019.3).
- <sup>61</sup> Disability Rights UK. *Independent Living*. 2014. <https://www.disabilityrightsuk.org/independent-living-0>. (25 February 2020, date last accessed).
- <sup>62</sup> Anderson E. Optional Freedoms. *Boston Review* (online) 2000. <http://bostonreview.net/forum/basic-income-all/elizabeth-anderson-optional-freedoms>. (14 February 2020, date last accessed).
- <sup>63</sup> Salehi-Isfahani D, Mostafavi-Dehzoeei MH. Cash transfers and labor supply: Evidence from a large-scale program in Iran. *J Dev Econ* 2018;135:349–367. doi: [10.1016/j.jdeveco.2018.08.005](https://doi.org/10.1016/j.jdeveco.2018.08.005).
- <sup>64</sup> Gilbert R, Murphy NA, Stepka A, Barrett M, Worku D. Would a Basic Income Guarantee Reduce the Motivation to Work? An Analysis of Labor Responses in 16 Trial Programs. *Basic Income Stud* 2018;13(2). doi: [10.1515/bis-2018-0011](https://doi.org/10.1515/bis-2018-0011).
- <sup>65</sup> Akee R, Copeland W, Costello EJ, Simeonova E. How Does Household Income Affect Child Personality Traits and Behaviors? *Am Econ Rev* 2018;108(3):775–827. doi: [10.1257/aer.20160133](https://doi.org/10.1257/aer.20160133).
- <sup>66</sup> Mehra S, Stopnitzky Y, Alloush M. Economic Shocks and Personality Traits of the Ultra-Poor. *Working paper* (online) 2019. doi: [10.13140/RG.2.2.29462.80960](https://doi.org/10.13140/RG.2.2.29462.80960).
- <sup>67</sup> Nussbaum MC. *Sex and Social Justice*. New York: Oxford University Press, 1999.
- <sup>68</sup> Henley J. Finland to end basic income trial after two years. *The Guardian* (online) 2018. <https://www.theguardian.com/world/2018/apr/23/finland-to-end-basic-income-trial-after-two-years>. (27 January 2020, date last accessed).
- <sup>69</sup> Henley J, Agencies. Finland’s “free cash” experiment fails to boost employment. *The Guardian* (online) 2019. <https://www.theguardian.com/world/2019/feb/08/finland-free-cash-experiment-fails-to-boost-employment>. (27 January 2020, date last accessed).
- <sup>70</sup> Pohjanpalo K. Free Money Didn’t Help People Find Jobs, Finland Says. *Bloomberg.com* (online) 2019. <https://www.bloomberg.com/news/articles/2019-02-08/finland-finds-basic-income-failed-to-boost-employment>. (27 January 2020, date last accessed).
- <sup>71</sup> Valero J. Finnish finance minister: ‘Case closed’ for universal basic income. [www.euractiv.com](http://www.euractiv.com) (online) 2019. <https://www.euractiv.com/section/economy-jobs/interview/finnish-finance-minister-case-closed-for-universal-basic-income>. (27 January 2020, date last accessed).
- <sup>72</sup> Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years’ observations on male British doctors. *BMJ* 2004;328(7455):1519. doi: [10.1136/bmj.38142.554479.AE](https://doi.org/10.1136/bmj.38142.554479.AE).
- <sup>73</sup> Johnson MT, Johnson E, Webber L, Pickett K. Why we must work toward a recognised international standard in evaluation of upstream interventions. *Evidence & Policy Blog*. 2020. <https://evidenceandpolicyblog.co.uk>.
- <sup>74</sup> Johnson MT, et al. Modelling the size, cost and health impacts of Universal Basic Income: What can be done in advance of a trial?, Under review. Author draft: <http://wp.lancs.ac.uk/good-culture/files/2020/09/Modelling-Health-Impacts-of-UBI.pdf>
- <sup>75</sup> Nettle D, Johnson E, Johnson MT, Saxe R. Why has the COVID-19 pandemic increased support for Universal Basic Income? *PsyArXiv* 2020. doi: [10.31234/osf.io/csr3u](https://doi.org/10.31234/osf.io/csr3u).