

# Case examples of applying behavioural and cultural insights to health-related policies, services and communication processes

AN INSPIRATION BOOKLET

WHO regional meeting on behavioural  
and cultural insights for health

Copenhagen, Denmark, 12-14 September 2023



European Region

## Abstract

This inspiration booklet presents case examples which together illustrate the range and diversity of applications of behavioural and cultural insights to improve health-related policies, services, and communication processes. Most of the examples have been evaluated and proven to have a positive impact on health and well-being.

© World Health Organization 2023

All rights reserved.

This information material is intended for workshop and meeting purposes only. It may not be reviewed, abstracted, quoted, reproduced, transmitted, distributed, translated, or adapted, in part or in whole, in any form or by any means.

## Contents

Introduction .....	1
BCI applied to health policy.....	3
Influencing food choices through nutritional front-of-pack labelling (France) .....	3
Decreasing youth's problematic behaviours with the Communities that care prevention system (Germany) .....	3
Tailoring COVID-19 response through BI population surveys and rapid stakeholder engagement (North Macedonia) .....	4
Reducing alcohol consumption and related societal issues with an alcohol minimum pricing policy (Scotland) .....	4
Introducing vaccines for new age groups informed by behavioural insights (BI) (Sweden) .....	5
Decreasing consumption of high-sugar drinks through new tax design (United Kingdom) .....	5
BCI applied to health services .....	6
Improving health outcomes and equal access to care through intercultural mediation (Belgium) .....	6
Improving physical outcomes and treatment compliance among people with Parkinson's disease through social prescribing of dance lessons (Belgium, France, Malta, Netherlands, Portugal, Sweden, United Kingdom) .....	6
Increasing the inclusion of children with disabilities and developmental difficulties through extensive research on cultural and social norms on stigma and discriminatory attitudes (Bulgaria) .....	7
Improving surgical safety through simple checklists (global) .....	7
Understanding healthcare workers' vaccine acceptance through survey studies (Greece) .....	8
Increasing immunization coverage of children under 1 year of age with a vaccination information package for maternity hospitals to (Kyrgyzstan) .....	8
Increasing patient treatment adherence through enhancing convenience with digital tools (Republic of Moldova) .....	9
Better inclusion through analysis of vulnerabilities and inequalities in health in the local communities (Slovenia) .....	9
Supporting childhood vaccination through tools for dialogue and tailored interventions (Sweden) .....	10
Increasing health effects and cost-effectiveness of physical therapy for children through making it fun and engaging (United Kingdom) .....	10
Increasing vaccination through identifying and addressing community-specific barriers (United Kingdom) .....	11
BCI applied to health communication .....	12
Increasing uptake of cervical cancer screening through letters and reminders (Armenia) .....	12
Increasing HPV vaccination uptake with SMS reminders (Georgia) .....	12
Enhancing management of hospital waiting lists through redesign and testing of validation letters (Ireland) .....	13
Promoting health behaviours through trusted health information messengers (Kyrgyzstan) .....	13
Improving adherence to diet and physical activity recommendations through community lifestyle interventions [Netherlands (Kingdom of the)] .....	14
Increasing COVID-19 testing in migrant groups with social media campaigns (Norway) .....	14
Understanding the social perceptions, behaviours and attitudes related to COVID-19 to inform the pandemic response (Spain) .....	15
Reducing antibiotic prescribing through social-norm feedback (United Kingdom) .....	15
References .....	16

## Introduction

The case examples in this inspiration booklet demonstrate the range and diversity of applications of behavioural and cultural insights (BCI) to improve the outcomes of health interventions. They are presented in three categories, with BCI applied to health-related policies, health services and health communication processes (Table 1). Most of the examples have been evaluated and proven to have a positive impact on health and well-being. The list of case examples presented here is not exhaustive and is meant to provide inspiration for those looking to apply BCI in their own contexts.

Many of the case examples are taken from the reporting done during the period January to April 2023 by Member States of the WHO European Region. **A warm thank you to all the public health authority staff and researchers who supported this work and the drafting of the case examples.** May you be inspired.

Table 1. Overview of case examples by category

Health policy	Health services	Health communication
<ul style="list-style-type: none"> <li>• Influencing food choices through nutritional front-of-pack labelling (France)</li> <li>• Decreasing youth's problematic behaviours with the Communities that care prevention system (Germany)</li> <li>• Tailoring COVID-19 response through BI population surveys and rapid stakeholder engagement (North Macedonia)</li> <li>• Reducing alcohol consumption and related societal issues with an alcohol minimum pricing policy (Scotland)</li> <li>• Introducing vaccines for new age groups informed by behavioural insights (BI) (Sweden)</li> <li>• Decreasing consumption of high-sugar drinks through new tax design (United Kingdom)</li> </ul>	<ul style="list-style-type: none"> <li>• Improving health outcomes and equal access to care through intercultural mediation (Belgium)</li> <li>• Improving physical outcomes and treatment compliance among people with Parkinson's disease through social prescribing of dance lessons (Belgium, France, Malta, Netherlands, Portugal, Sweden, United Kingdom)</li> <li>• Increasing the inclusion of children with disabilities and developmental difficulties through extensive research on cultural and social norms on stigma and discriminatory attitudes (Bulgaria)</li> <li>• Improving surgical safety through simple checklists (Global)</li> <li>• Understanding healthcare workers' vaccine acceptance through survey studies (Greece)</li> <li>• Increasing immunization coverage of children under 1 year of age with a vaccination information package for maternity hospitals to (Kyrgyzstan)</li> <li>• Increasing patient treatment adherence through enhancing convenience with digital tools (Republic of Moldova)</li> <li>• Better inclusion through analysis of vulnerabilities and inequalities in health in the local communities (Slovenia)</li> <li>• Supporting childhood vaccination through tools for dialogue and tailored interventions (Sweden)</li> <li>• Increasing health effects and cost-effectiveness of physical therapy for children through making it fun and engaging (United Kingdom)</li> <li>• Increasing vaccination through identifying and addressing community-specific barriers (United Kingdom)</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing uptake of cervical cancer screening through letters and reminders (Armenia)</li> <li>• Increasing HPV vaccination uptake with SMS reminders (Georgia)</li> <li>• Enhancing management of hospital waiting lists through redesigning and testing validation letters (Ireland)</li> <li>• Promoting health behaviours through trusted health information messengers (Kyrgyzstan)</li> <li>• Improving adherence to diet and physical activity recommendations through community lifestyle interventions [Netherlands (Kingdom of the)]</li> <li>• Increasing COVID-19 testing in migrant groups with social media campaigns (Norway)</li> <li>• Understanding the social perceptions, behaviours and attitudes related to COVID-19 to inform the pandemic response (Spain)</li> <li>• Reducing antibiotic prescribing through social-norm feedback (United Kingdom)</li> </ul>

## BCI applied to health policy

It is challenging for individuals to change health-related behaviours when faced with unhealthy alternatives that are more attractive, convenient, or cheap, and possibly even underpinned by social norms and expectations. In some cases, rather than increasing people's knowledge or changing their perceptions, it may be more effective to alter the environment around them. As such, at the policy level, Behavioural and Cultural Insights (BCI) can be applied to the design of regulatory measures, the design of policies and interventions, and the functioning of health systems and communities.

### Influencing food choices through nutritional front-of-pack labelling (France)

BCI studies have shown that the provision of traditional tabular, numerical, back-of-pack nutritional information does not have any significant impact on people's dietary choices and is unlikely to lead to any meaningful result from a public policy perspective (1,2). In contrast, front-of-pack labelling (FOPL) provides consumers with nutritional information at first glance, often in a simplified format. FOPL is a cost-effective solution that enables people to easily compare food options and make healthier choices and can also encourage producers to make healthier products.

To identify what kind of FOPL would be acceptable and effective, France conducted an extended consultative process with the food manufacturing and retail industries, scientists, and consumers. These consultations led to the proposal of several FOPL systems, which were then tested using various methodologies combining experimental designs, randomized controlled trials (RCTs) on experimental platforms, and a large-scale, real-world trial in 60 supermarkets in 2016 (3). Ultimately, the Nutri-Score system, a nutritional label based on a five-colour coded scale going from dark green to dark orange, associated with letters from A to E, proved to perform best in influencing the nutritional quality of consumers' food purchases. France adopted the Nutri-Score in 2017, followed by several other countries in the WHO European Region (4).

### Decreasing youth's problematic behaviours with the Communities that care prevention system (Germany)

Youth problem behaviour such as alcohol use, illicit drug use and delinquency, negatively impact healthy development and well-being (5,6). Preventive programmes can minimize risk factors. Communities That Care (CTC) is a system used worldwide to build community capacity for prevention (7). In 2009, CTC was introduced in Germany (8) and has since been implemented in more than 50 communities.

During April 2020-December 2023, a non-randomised controlled study will evaluate the effectiveness and cost-effectiveness of CTC in Germany (8) in 38 towns, communities, and districts. Surveys and interviews are conducted with community key informants, prevention actors, community board members, CTC-trainers and local CTC-coordinators, children, and youth. Community resource documentation is used to measure prevention activities supplemented by a cost-effectiveness analysis.

Initial analyses of this evaluation show that an above-average level of community capacity for prevention and health promotion is associated with abstinence of any substance use, abstinence of alcohol use and abstinence of tobacco use (9). The study will continue to explore further possible impacts on the adoption of a science-based approach, intersectoral collaboration for prevention and community support for prevention.

## Tailoring COVID-19 response through BI population surveys and rapid stakeholder engagement (North Macedonia)

Throughout the pandemic, North Macedonia used BI to tailor COVID-19 measures and restrictions to the evolving needs of the population. Using the *Survey tool and guidance for behavioural insights on COVID-19*, developed by the WHO Regional Office for Europe, health authorities were able to collect data, discuss and contextualize findings with key stakeholders, and rapidly translate findings into action (10). The questionnaire includes variables such as COVID-19 risk perception, health literacy, protective behaviours, well-being, trust, and vaccination intention.

Through this work, health authorities in North Macedonia tailored risk communication and outreach activities for the most vulnerable and marginalized groups, carried out capacity-building activities to engage the local community and people in the workplace, and collaborated with health-care workers to identify unmet needs and strengthen their ability to take a patient-centred approach (11). Since the onset of the pandemic, more than 30 countries and areas within the Region have made use of the survey tool, either with direct support from the Regional Office or independently.

## Reducing alcohol consumption and related societal issues with an alcohol minimum pricing policy (Scotland)

Increasing alcohol prices can reduce alcohol consumption. One way is to set a minimum price below which alcoholic drinks cannot be sold Minimum Unit Pricing (MUP), as introduced in Scotland in 2018. The impact of this policy has been investigated through a portfolio of studies (12).

2.5 years following MUP implementation, there was an estimated reduction of 13.4% in wholly attributable alcohol deaths in Scotland compared to England (control area), and a 4.1% estimated reduction in wholly attributable hospital admissions (13) with largest reductions among men and those living in deprived areas. There was no evidence of impact on health indicators such as ambulance callouts (14), emergency department attendances (15) and prescribing for alcohol dependence (16).

There was a 3% decline in alcohol consumption, as measured by alcohol sales (17). Products with the largest price increase had the largest fall in sales (17), the reduction was driven by the heaviest purchasing households (18,19). The majority of households were not affected, meaning MUP was well targeted (19). The decrease in alcohol-attributable deaths and hospital admissions due to chronic conditions also suggests that MUP has, by definition, reduced consumption in those that drink at hazardous and harmful levels.

Surveys showed that some with alcohol dependence felt unable to reduce their consumption (20,21). Those financially vulnerable reported needing to use pre-existing harmful strategies more often, such as reducing spending on food (20) and, for those homeless, begging or stealing to cope with the price increase (21). A range of other social outcomes were explored, with no or mixed impact, including alcohol-related crime (22), children and young people's consumption (23), quality of nutrition (24) and road traffic accidents (25,26,27).

### Introducing vaccines for new age groups informed by behavioural insights (BI) (Sweden)

In Sweden, BI survey data about attitudes, perceptions and behaviours related to the COVID-19 pandemic were used to inform the national policy and guidance for vaccination of younger age groups. The BI data showed that willingness to vaccinate decreased with decreasing age, from 80% among 16–17-year-olds down to as low as 52% among parents of 5–7-year-olds. The insights from the BI population survey were used to tailor national and local vaccination messages and promotion initiatives and informed the decision to recommend COVID-19 vaccination for those aged 12–17 years, but not for those aged 5–11 years. The data showed that among those willing to vaccinate, younger age groups and their parents/guardians had different needs – a higher proportion had questions or concerns about safety and evidence and whether vaccination was in the interest of the child. The drivers of vaccination were also different, as younger groups primarily indicated that they accepted vaccination to protect others, not themselves (28).

### Decreasing consumption of high-sugar drinks through new tax design (United Kingdom)

In 2016, the Government of the United Kingdom announced that the Soft Drinks Industry Levy would come into effect in 2018. The design and implementation of the Levy were informed by a public consultation in 2016. Acknowledging that individual behaviour change is challenging, the tax targets producer behaviour by encouraging reformulation, as the tax escalates according to sugar levels in the drink. This has caused the soft drinks industry to significantly reduce the sugars in their products, leading to a 30% reduction of sugars sold per capita per day from soft drinks (29).



## BCI applied to health services

BCI can be used to strengthen health services by making them more convenient, accessible, acceptable, and equitable, and to make sure they respond to the needs of patients, citizens and health providers. Such a people-centred approach in the health-care system can lead to better uptake of preventive measures, better adherence to treatment, more appropriate use of health services, and more appropriate procedures, treatment and prescribing among health personnel.

### Improving health outcomes and equal access to care through intercultural mediation (Belgium)

Cultural differences between the patient and the health provider can lead to misunderstandings that can have negative impacts on the success of treatment or prevention measures and may discourage patients from returning for care in time. An innovative approach, originating in Belgium, consists of training intercultural mediators who act as bridges between patients and health professionals. Intercultural mediators can help explain and contextualize messages and situations for both the patient and the health worker. Their role also involves interpretation, health education and advocacy. Over three decades, this approach was piloted and evaluated, and is now integrated within the health-care system in Belgium. Evaluation studies have found that cultural mediators can improve the quality of care, strengthen the doctor–patient relationship and lead to improved health outcomes (30).

### Improving physical outcomes and treatment compliance among people with Parkinson's disease through social prescribing of dance lessons (Belgium, France, Malta, Netherlands, Portugal, Sweden, United Kingdom)

The negative impacts of some chronic diseases can be mitigated through the right kinds of physical training; however, repeated training can be a tiresome burden on patients, which may lead to low compliance and high dropout rates. Social prescribing is an innovative and growing alternative, making physical training more appealing and motivating while still following clinical principles. For example, across multiple meta-analyses, dance has been found to provide clinically meaningful improvements in motor scores for people with Parkinson's disease, as well as improvements in balance, gait speed and functional mobility. High compliance and low dropout rates as well as continued activity beyond the study period have also been shown (31).

Within the Region, a number of Member States offer dance classes for people with Parkinson's disease. The majority of these are led by dance organizations that have developed relationships with doctors in primary care facilities, hospitals, or specialist treatment centres. Some provide direct referrals and participants can also self-refer (31).

### Increasing the inclusion of children with disabilities and developmental difficulties through extensive research on cultural and social norms on stigma and discriminatory attitudes (Bulgaria)

Disabilities and developmental difficulties may result in further health disparities. To gain an in depth understanding of the challenges faced by children with disabilities and developmental difficulties, UNICEF Bulgaria carried out a national survey (32,33). The survey was completed by parents of children with and without disabilities up to 6 years, health professionals and social service specialists (32,33).

The study explored perceptions related to children with and without disabilities, institutions and policies and links between norms, social exclusion, and violation of the rights of these children. It identified need for a comprehensive early intervention system in Bulgaria, with education and health services being important areas for improvement. Parents of children with disabilities highlighted unpleasant experiences with health care (32,33).

Informed by the studies conducted, UNICEF Bulgaria is supporting the introduction of an approach to early childhood intervention, with improved monitoring of early childhood development and early detection of developmental difficulties; mechanisms to direct children at risk to early intervention services; provision of quality, family-oriented services; and support for a smooth transition to inclusive early education and care. This systematic approach is introduced in 5 municipalities (32,33,34).

To address some of the structural bottlenecks identified in the survey, UNICEF and partners developed a comprehensive toolkit to be pilot tested in Bulgaria to address stigma, shame culture and discrimination. It was developed using an innovative methodology by Drexel University and aims to serve as a gold standard by introducing positive behavioural and cultural dimensions to the inclusion of children with disabilities and developmental difficulties.

### Improving surgical safety through simple checklists (Global)

Surgical complications are common and often preventable. Drawing on lessons learned from the aviation industry, the WHO Surgical Safety Checklist was developed as a simple tool to promote appropriate behaviours during surgery, thereby decreasing human errors and adverse events (35). Beyond providing a gentle reminder of critical steps in the surgical process, the checklist also encourages changes in the culture and behaviour of the surgical team as a whole. Through the introduction of a formal pause during introductions and debriefings, all members of the surgical team are given the opportunity to speak up, irrespective of hierarchical rank or seniority.

Studies have found that this simple tool is effective in changing behaviours: complications were reduced by over one third and deaths cut by nearly 50% in eight pilot hospitals representing a variety of economic circumstances and diverse patient populations. The list is now used by most surgical providers around the world (36).

## Understanding healthcare workers' vaccine acceptance through survey studies (Greece)

Vaccines have been used in controlling the COVID-19 pandemic since early 2021, but the unfamiliarity of both COVID-19 and the vaccine presented new uncertainties related to their uptake (37). The behaviours of healthcare workers play a crucial role for public uptake of vaccines, including their own perceptions and vaccination behaviour, and their communication related to vaccination, highlighting a need to understand the needs and perceptions of healthcare workers (38).

In Greece in 2021, survey studies were conducted to examine COVID-19 vaccine acceptance by healthcare workers and identify factors related to any possible vaccine hesitancy among them, including knowledge, attitudes and behaviours related to vaccination. One survey was conducted with 1456 healthcare workers from 20 hospitals (37) and another nationwide survey study with 1136 healthcare workers<sup>3</sup>. In both studies, the strongest predictive indicator for COVID-19 vaccination acceptance was history of being vaccinated against influenza virus (37,39), in addition to higher education, greater number of years in healthcare practice, knowledge about the vaccinations, and having a friend or relative who had COVID-19. Common reasons to reject the vaccination were, for example, concerns regarding vaccine safety (37.8% of respondents), need for further information about vaccination (30%), fear of a possible allergic reaction to the vaccine (8.7%) and confidence that they were not susceptible to (severe) COVID-19 disease (9.3%) (37). Noteworthy, in both studies it was found that in health districts where a higher proportion of healthcare workers were vaccinated or willing to receive the vaccine, a greater number of citizens were also vaccinated with at least one dose of COVID-19 vaccine.

Informed by the results, it was decided to continue information efforts, despite vaccination against COVID-19 being mandatory at the time, and to use the findings to help shape the key messages and communication channels.

## Increasing immunization coverage of children under 1 year of age with a vaccination information package for maternity hospitals to (Kyrgyzstan)

Immunization is a key component of primary health care, a human right, and critical to the prevention and control of infectious diseases (40). In Kyrgyzstan, routine childhood vaccinations are free of charge and provided at birth in maternity hospitals, but about 4% of children remain unvaccinated (41). In co-operation with UNICEF, the Ministry of Health in Kyrgyzstan identified and addressed barriers to infant immunization using behavioural insights.

First, the researchers *identified* an opportunity window for increasing the mothers' knowledge about the vaccination schedule when giving the first vaccination at the maternity ward post-birth – with a reminder mechanism for the whole family. Second, a vaccination pack was *designed* in partnership with the Republican Centre for Health Promotion and Mass Communication, mothers, and medial workers, with technical support of the Republican Centre for Immunoprophylaxis and the UNICEF Behavioural Insights Team. The pack contains a vaccination schedule, a vaccine information booklet, and stickers to attach to one's calendar as prompts and encouragement for vaccinating the children at the right time. The maternity ward staff received brief instructions on how to use the pack and information posters were developed for the ward.

Next, the materials were *pretested* in two maternity wards, improved, and approved at the Expert Council of the Ministry of Health. Finally, an *implementation and process evaluation* will be conducted at three days and two months post-birth. It aims to understand how mothers and health professionals use the materials, and the impact on vaccination uptake. A positive evaluation will lead to a scale up with integration into a mobile application for parents.

### Increasing patient treatment adherence through enhancing convenience with digital tools (Republic of Moldova)

Tuberculosis leads to 1.4 million deaths annually, and medical treatment is critical. Many countries use directly observed therapy (DOT) for medical treatment, where a health-care professional observes the patient take the treatment. This requires a high level of effort from both the patient and the health system and can lead to low treatment adherence. BCI can shed light on barriers to optimal treatment adherence, such as the fact that even highly motivated patients can be deterred by the effort it takes to travel to a clinic every time, they need to take the medication.

A potential solution that focuses on making medical treatment easier is video-observed treatment (VOT) where the patient films themselves taking the medication and sends it to their health-care professional. An RCT conducted in the Republic of Moldova found that VOT led to higher adherence (1.29 days missed per two-week period for VOT compared with 5.24 for DOT). The study demonstrates that increasing convenience, for example through VOT, offers a promising, time-saving alternative for increasing medical adherence (42).

### Better inclusion through analysis of vulnerabilities and inequalities in health in the local communities (Slovenia)

Health inequalities are differences in health between population subgroups (43). In Slovenia, a qualitative field study in 2018-19 in 25 communities identified vulnerabilities, inequalities, barriers to health and ways to overcome these barriers. 417 interviews included 629 participants (44).

Results revealed significant vulnerabilities and obstacles in health. Vulnerable groups included the elderly, socially deprived, children and adolescents, immigrants, foreigners and people with international protection, people with disabilities, homeless people, people with mental health problems, people with alcohol and drug addiction, unemployed, precarious and agency workers, Roma, victims of violence, people without obligatory or additional health insurance.

Barriers to accessing health or other assistance were primarily social barriers, linguistic, bureaucratic, material threats, geographic distance, lack of information, feeling of shame, stigma, prejudice, distrust and fear, lack of professional staff, lack of appropriate knowledge and skills.

The results enabled the formulation of recommendations and measures for better inclusion of vulnerable groups in prevention and treatment programmes in health centres and local communities (44).

### Supporting childhood vaccination through tools for dialogue and tailored interventions (Sweden)

Even though vaccination uptake in Sweden is generally high, one in five parents have questions in relation to vaccination (45) and are potentially susceptible to misinformation, would their questions not be answered.

To explore the barriers and drivers to communicating with parents among vaccinating nurses and to inform potential interventions and communication, four studies with nurses and parents were conducted in 2018-2022. Interviews with child and school health nurses showed that the well-educated and experienced nurses mostly answered parental questions without problems. Nevertheless, some questions and positions created a more stressful situation, often related to parents' fear of specific side effects or the content of vaccines (46,47). Focus groups with parents confirmed a strong positive norm and trust in relation to childhood vaccination but pointed out parents' wish for even more information and a responsive and understanding dialogue with the nurse preceding the vaccination decision (47,48). A population survey with parents confirmed that a large majority was pleased with the support from the nurse, highlighting it as important for continuous trust (47). These insights are currently being used for policy, interventions and communication and followed up through systematic programme work.

An intervention was designed with a multi-component, stakeholder approach to support the nurse-parent-child dialogue and vaccination decision, strengthen norms, and build trust. A set of communication tools was developed including films and dialogue materials for schools and pre-schools (49,50,51,52), fact sheets for the vaccination consultation (53), infographics and posters for co-ordinated stakeholder communication (54) and a training material on vaccine conversations (55). When needed due to local pockets of lower vaccination coverage, challenges are being explored and met by tailored interventions (55,56,57).

### Increasing health effects and cost-effectiveness of physical therapy for children through making it fun and engaging (United Kingdom)

Children with hemiplegia (a weakness or paralysis affecting one side of the body resulting from brain injury or stroke) are recommended to undergo intensive programmes of physical therapy. Children can experience this therapy as repetitive and isolating, which may decrease the effectiveness of the treatment and negatively affect their well-being, in turn increasing their care needs. In response, Breathe Magic was designed to incorporate traditional hand therapy exercises into magic tricks to make the exercises more fun and engaging. By delivering the sessions in a group setting, they also meet some of the psychosocial needs of young people with hemiplegia (58).

The programme was co-designed with input from artists, scientists, health-care staff, and patients. Since its inception in 2008, the programme in Australia and the United Kingdom has been shown to result in clinically significant improvements in bimanual motor skills; improved well-being, communication skills, self-esteem, and parent-child relationships; and a cost-saving reduction in the hours of care and support needed by each child. The programme has been shown to be comparable with other treatments such as botulinum toxin injections, both in terms of effectiveness and cost (58).

### Increasing vaccination through identifying and addressing community-specific barriers (United Kingdom)

It is sometimes assumed that low vaccination uptake can be explained by vaccine scepticism alone. Yet the reasons behind low uptake may be complex and require careful consideration. The WHO Tailoring Immunization Programmes (TIP) approach combines multiple data, BCI research and stakeholder engagement to uncover the barriers to and drivers of vaccination in specific communities to tailor a response. Applying the TIP approach to the Charedi Orthodox Jewish community in London, United Kingdom, showed that the main barriers were associated with access to and convenience of immunization services, rather than cultural or religious anti-vaccination sentiment. The insights generated through the TIP approach allowed for the development of targeted interventions, including flexible appointments in family-friendly surroundings and robust call and recall systems (59).

## BCI applied to health communication

Message framing as well as the language, visuals and channels used for engaging and communicating with people need to be tailored to the context to effectively influence health behaviours. To make sure messages and channels are effective, and that they do not have negative backfire effects, it can be useful to test them in an initial experiment. In some cases, it may be possible and effective to use channels that allow a wide number of people to be reached at a relatively low cost; in others, more intensive or direct approaches are needed.

### Increasing uptake of cervical cancer screening through letters and reminders (Armenia)

BCI evidence from high-income countries shows that invitation letters and reminders can substantially increase women's participation in cervical cancer screening programmes. A group of academics worked with the national screening programme of Armenia, the Armenia National SDG Innovation Lab, and a range of other partners to design and run an RCT to test the impact of invitations and reminders in Shirak, the region with the lowest income levels in Armenia. The invitation letters enhanced screening participation, especially when followed by reminders: compared to the 2.1% probability of getting screened among those who did not receive a letter, those who received letters and reminders were three to four times more likely to get screened (60).

The RCT also tested differently framed messages in the letters (such as underlining the potential negative consequences of not attending a check-up) but these did not result in different rates of compliance, suggesting that the act of sending an invitation was more important than the specific wording of the letters (60). The project showed that appropriately tested letters and reminders are a cost-effective intervention which can change health behaviours in both high- and low-income settings.

### Increasing HPV vaccination uptake with SMS reminders (Georgia)

The HPV vaccine was added to Georgia's national vaccination schedule in 2019. In 2020, the coverage rate among females was 22% for all doses of the vaccine. Human centered design research was conducted to understand the reasons for the low uptake. Behavioural insights suggested that using SMS reminders might increase uptake.

With support from UNICEF and in collaboration with the Behavioural Insights Team (BIT), Information Technology Agency (ITA) and National Center for Disease Control and Public Health Georgia, a randomized controlled trial was conducted by a range of partners (61) to test four versions of SMS reminders to select the one most effective in motivating caregivers to bring girls 10-12 years, eligible for the first dose of HPV vaccination.

Findings identified the message with the largest positive effect, relative to the control group. Version 3 of the SMS ("reserved for her" framing) was the most effective in encouraging uptake of the HPV vaccine. The Version 3 message stated "Your daughter is due for her free human papillomavirus (HPV) vaccine which will protect her against cervical cancer. Her vaccine is reserved for her at the polyclinic. Contact them today to arrange an appointment". The selected behavioural-insight informed SMS reminder message was mainstreamed as part of Georgia's national system and delivered to caregivers of eligible girls.



### Enhancing management of hospital waiting lists through redesign and testing of validation letters (Ireland)

It is good practice for hospitals to check whether patients on waiting lists are still in need of treatment. This is commonly done via so-called validation letters to patients. Yet, it is estimated that approximately 25% of patients do not provide a response to the letters.

In Ireland, BCI was used to redesign and test different letter formats to encourage more patients to engage with the validation process. Through a randomized controlled trial, the study found that using the redesigned letter resulted in nearly 20% of non-responders changing their behaviour and responding.

The revised letter includes design elements such as a call for action, simplification, personalization, an apology for the waiting time, and explains the reason for checking waiting lists. Following the publication of the results in 2018, the redesigned letter has been adopted as the national template for waiting list validation correspondence in Ireland (62).

### Promoting health behaviours through trusted health information messengers (Kyrgyzstan)

A key issue in BCI and communication is the importance of selecting the right messenger. When information is delivered by trusted and respected members of the community, it is more likely to lead to change. In response to low levels of health literacy among the rural population in Kyrgyzstan, the Community Action for Health (CAH) programme was initiated in 2002 as a partnership for health promotion between the government health system and village health committees (VHCs). Members of each VHC are democratically elected by neighbourhoods and trained to implement health actions by visiting people in their homes and working with other organizations.

The impacts of this innovative approach on behaviours among village populations are substantial. Outcomes that can be attributed to VHCs include the reversal of the brucellosis epidemic in Kyrgyzstan through the promotion of behaviours that protect people from infection during sheep lambing (with a total estimated cost savings of US\$ 4 827 065 between 2007 and 2011), over 2 million people screened for hypertension, an increase in awareness of nutrition, and early detection of health problems in children and pregnant women. As of 2018, the CAH was a countrywide programme involving some 1700 VHCs that covered 84% of all villages (63).



## Improving adherence to diet and physical activity recommendations through community lifestyle interventions [Netherlands (Kingdom of the)]

The negative impact of an unhealthy lifestyle is well established. Previous studies have shown that computer tailoring, and telephone motivational interviewing have the potential to reach large populations and change health behaviour (64).

In a Dutch randomised controlled trial study, health communication related to physical activity (PA) and healthy diet was tailored to meet the needs and circumstance of a community dwelling population. The study selected 1629 participants, aged 45-70 years, half of them with hypertension, and assessed the effects of computer-tailored print communication, telephone motivational interviewing, and a combined version (65). Interventions were based on behavioural theories that focus on increasing people's awareness, motivation, positive attitudes, positive norms, self-efficacy, and planning skills for healthy habits (66,67,68,69). At the start of the study, 0% met official recommendations for PA, 44% for fruit and 31% for vegetable intake.

The interventions were effective in increasing adherence to PA guidelines, with 29-34% meeting the guidelines one year after baseline (same season) and 24%-27%, 18 months later. Computer-tailored print communication was the most effective for fruit and vegetable intake with about 60% meeting recommendations for fruits and 50% for vegetables after about 12 months (65). Fruit intake was maintained at 18 months and vegetable intake was 40%.

Based on the findings, all interventions are recommended for PA promotion with the note that low self-efficacy and motivation may not be best addressed this way (65). These and other findings about tailored health communication have been included in guidelines and education of health care professionals in the Netherlands.<sup>1</sup>

## Increasing COVID-19 testing in migrant groups with social media campaigns (Norway)

With several migrant groups in Norway disproportionally affected by COVID-19 (70) and difficult to reach with relevant information (71,72), Norwegian health authorities carried out several tailored campaigns, including Facebook posts in various languages. Among these, a "Get tested" campaign was launched in 2021 to increase the COVID-19 test rates among migrant populations (73).

To test whether a social media campaign could have actual effect on behaviour, a two-week randomised controlled trial on the "Get tested-campaign" was rolled out with 386 municipalities and city districts in intervention or control groups including 233 903 individuals. The one half was geographically targeted with Facebook posts in their native languages, explaining in an easily understood way that testing is simple and free of charge. The other half received no messages at all.

Findings showed a 15.7% relative increase in the proportion taking a COVID-19 test among those exposed to the campaign. Targeted social media advertisements sponsored by health authorities can positively influence behaviour during a pandemic.

The methods developed and tested are now part of campaign strategies for both general and migrant populations by Norwegian authorities. In February 2022, Norway implemented this strategy

---

<sup>1</sup> This case example was developed with support from dr. Ilse Mesters (Maastricht University), dr. Djoeka van Dale, dr. Jet Sanders and dr. Mariken Leurs (all from RIVM)

by providing new refugees with basic health information by targeting the communication through social media in their own language immediately upon arrival.

### Understanding the social perceptions, behaviours and attitudes related to COVID-19 to inform the pandemic response (Spain)

In 2020, COVID-19 caused many countries to introduce a range of measures to reduce transmission. In Spain, the Institute of Health Carlos III in collaboration with the Spanish Ministry of Health launched a population survey. With engagement from the University of Erfurt and WHO Regional Office for Europe, this national COVID-19 Snapshot Monitoring (COSMO) study surveyed 1000 people about every two months for over two years on topics related to perceptions of the pandemic, pandemic fatigue, information seeking, health literacy, preventive behaviours, and vaccination, among other aspects. The team joined the WHO Behavioural and Cultural Insights Unit's COVID-19 behavioural insights community of practice, where countries conducting similar surveys gathered to share results and experiences (74,75).

The COSMO-Spain data were shared at meetings with the Ministry of Health and Spanish regions to inform more effective communication strategies and the development of a guide on communication addressing pandemic fatigue. This resulted, for example, in positive messaging, avoiding shaming or blaming. The COSMO-Spain results were regularly published on a website that received a lot of media attention and allowed transparent sharing with the population. All in all, the project generated expertise that can be applied to numerous other health aspects, and that can help to design evidence-based public health strategies to help improving communication and health care (74,75).

### Reducing antibiotic prescribing through social-norm feedback (United Kingdom)

Many doctors continue to prescribe unnecessary antibiotics even though it contributes to antimicrobial resistance. The reasons vary across contexts, including time pressure during consultations, cultural expectations related to prescribing, perceived risk of reputational damage and legal reprisal, and so-called action bias – the desire to do something for the patient (76).

A national-scale RCT run by the Behavioural Insights Team and Public Health England targeted general practitioner (GP) practices in England whose antibiotic prescribing rate was in the top 20% for the area. Half of the high-prescribing GP practices were randomly allocated to receive a letter from a high-profile messenger (the country's chief medical officer) providing social-norm feedback ("The great majority (80%) of practices in [local area] prescribe fewer antibiotics per head than yours"). The results showed a 3.3% relative reduction in antibiotic prescribing among the GP practices that received letters compared to those that did not. The research team calculated that, if the control group was also treated, the intervention would equate to a 0.85% reduction in antibiotic items nationally during the study period. For comparison, the National Health Service set aside significant funding to reward a 1% reduction in antibiotic items prescribed. The effect of the one-time letter was shown to last at least six months. This is a meaningful result for a low-cost intervention that is easy to scale up (77).

## References

1. Bauer JM, Reisch LA. Behavioural insights and (un)healthy dietary choices: a review of current evidence. *J Consum Policy*. 2019;43(1):3–45. doi: 10.1007/S10603-018-9387-Y.
2. Becher S, Gao H, Harrison A, Lai, JC. Hungry for change: the law and policy of food health labeling. *Wake Forest Law Review*. 2019;54:1305–50. ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3352241](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3352241), accessed 27 July 2022).
3. Chantal J, Hercberg S. Development of a new front-of-pack nutrition label in France: the five-colour Nutri-Score. *Pub Health Panorama*. 2017;3(4):712–25 (<https://apps.who.int/iris/handle/10665/325207>, accessed 27 July 2022).
4. Kelly B, Jewell J. What is the evidence on the policy specifications, development processes and effectiveness of existing front-of-pack food labelling policies in the WHO European Region? Copenhagen: WHO Regional Office for Europe; 2018 (<https://apps.who.int/iris/handle/10665/326187>, accessed 27 July 2022).
5. Institute for Health Metrics and Evaluation (IHME). GBD Results. Published online 2020 (<https://www.healthdata.org/data-visualization/gbd-results>, accessed June 12, 2023).
6. Paradis AD, Koenen KC, Fitzmaurice GM, Buka SL. Impact of persistent and adolescent-limited antisocial behaviour on adult health outcomes. *J Epidemiol Community Health*. 2016;70(10):1004-1010. doi:10.1136/jech-2014-205140
7. The Center for Communities That Care. (<https://www.communitiesthatcare.net/>, accessed June 29, 2023).
8. Röding D, Soellner R, Reder M, et al. Study protocol: a non-randomised community trial to evaluate the effectiveness of the communities that care prevention system in Germany. *BMC Public Health*. 2021;21(1):1927. doi:10.1186/s12889-021-11935-x
9. Birgel, V., Röding, D., Reder, M., Soellner, R., & Walter, U. (2023). Contextual effects of community capacity as a predictor for adolescent alcohol, tobacco, and illicit drug use: a multi-level analysis. Manuscript submitted for publication in *SSM - Population Health*.
10. Survey tool and guidance for behavioural insights on COVID-19: monitoring knowledge, risk perceptions, preventive behaviours and trust to inform pandemic outbreak response. Copenhagen: WHO Regional Office for Europe; 2020 (<https://apps.who.int/iris/bitstream/handle/10665/332467/WHO-EURO-2020-690-40425-54211-eng.pdf?sequence=1&isAllowed=y>, accessed 27 July 2022).
11. Latest WHO studies examine perceptions about COVID-19 in North Macedonia [webpage]. Copenhagen: WHO Regional Office for Europe; 2022 (<https://www.who.int/north-macedonia/news/item/19-04-2022-latest-who-studies-examine-perceptions-about-covid-19-in-north-macedonia>, accessed 27 July 2022).
12. Public Health Scotland. Evaluating the impact of minimum unit pricing for alcohol in Scotland. A synthesis of the evidence. Edinburgh. 2023. [Evaluating the impact of minimum unit pricing for alcohol in Scotland: A synthesis of the evidence - Publications - Public Health Scotland](#)
13. Wyper G, Mackay D, Fraser C et al. Evaluating the impact of alcohol minimum unit pricing (MUP) on alcohol-attributable deaths and hospital admissions in Scotland. Edinburgh: Public Health Scotland; 2023. [Evaluating the impact of alcohol minimum unit pricing \(MUP\) on alcohol-attributable deaths and hospital admissions in Scotland - Publications - Public Health Scotland](#)
14. Manca F, Lewsey J, Mackay D et al. The effect of the minimum price for unit of alcohol in Scotland on alcohol-related ambulance callouts: A controlled interrupted time series analysis. *medRxiv*. 2022 Dec 19. DOI: <http://medrxiv.org/lookup/doi/10.1101/2022.12.18.22283513>
15. So V, Millard AD, Katikireddi SV et al. Intended and unintended consequences of the implementation of minimum unit pricing of alcohol in Scotland: A natural experiment. Southampton (UK): NIHR Journals Library; 2021. DOI: <https://pubmed.ncbi.nlm.nih.gov/34699154/>
16. Manca F, Zhang L, Fitzgerald N et al. The effect of minimum unit pricing for alcohol on prescriptions for treatment of alcohol dependence: A controlled interrupted time series analysis. *International Journal of Mental Health and Addiction*. 2023 May 22. DOI: [The Effect of Minimum Unit Pricing for Alcohol on](#)

Prescriptions for Treatment of Alcohol Dependence: A Controlled Interrupted Time Series Analysis | SpringerLink

17. Giles L, Mackay D, Richardson E et al. Evaluating the impact of Minimum Unit Pricing (MUP) on sales-based alcohol consumption in Scotland at three years postimplementation. Edinburgh: Public Health Scotland; 2022. Evaluating the impact of Minimum Unit Pricing (MUP) on sales-based alcohol consumption in Scotland at three years post-implementation - Publications - Public Health Scotland
18. Anderson P, O'Donnell A, Kaner E et al. Impact of minimum unit pricing on alcohol purchases in Scotland and Wales: Controlled interrupted time series analyses. *Lancet Public Health*. 2021 Aug;6(8): e557–e565. DOI: [https://doi.org/10.1016/S2468-2667\(21\)00052-9](https://doi.org/10.1016/S2468-2667(21)00052-9)
19. Griffith R, O'Connell M, Smith K. Price floors and externality correction\*. *The Economic Journal*. 2022 Jan 31. DOI: <https://doi.org/10.1093/ej/ueac011>
20. Holmes J, Buykx P, Perkins A et al. Evaluating the impact of minimum unit pricing in Scotland on people who are drinking at harmful levels. Public Health Scotland; 2022. Evaluating the impact of Minimum Unit Pricing in Scotland on people who are drinking at harmful levels - Publications - Public Health Scotland
21. Emslie C, Dimova E, O'Brien R et al. The impact of alcohol minimum unit pricing on people with experience of homelessness: Qualitative study. *medRxiv*. 2023 Apr 3. DOI: <https://doi.org/10.1101/2023.03.31.23287966>
22. Krzemieniewska-Nandwani K, Bannister J, Ellison M et al. Evaluation of the impact of alcohol minimum unit pricing (MUP) on crime and disorder, public safety and public nuisance. 2021. Evaluation of the impact of alcohol minimum unit pricing (MUP) on crime and disorder, public safety and public nuisance - Publications - Public Health Scotland
23. Ford J, Myers F, Burns J, Beeston C. Minimum unit pricing (MUP) for alcohol evaluation: The impact of MUP on protecting children and young people from parents' and carers' harmful alcohol consumption: A study of practitioners' views. Public Health Scotland; 2020. Practitioners' views on the impact of MUP on protecting children and young people - Publications - Public Health Scotland
24. Leckcivilize A, Whybrow S, Gao N et al. Nutritional impacts of minimum unit pricing for alcohol: Are there unintended diet consequences? *medRxiv*. 2022 Dec 14. DOI: <https://doi.org/10.1101/2022.12.12.22283347>
25. Manca F, Parab R, Mackay D et al. Evaluating the impact of minimum unit pricing for alcohol on road traffic accidents in Scotland: A controlled interrupted time series study. *medRxiv*. 2022 Dec 6. DOI: <https://doi.org/10.1101/2022.12.04.22283071>
26. Vandroos S, Kawachi I. Minimum alcohol pricing and motor vehicle collisions in Scotland. *American Journal of Epidemiology*. 2022 Mar 24;191(5):867–873. DOI: <https://doi.org/10.1093/aje/kwab283>
27. Francesconi M, James J. Alcohol price floors and externalities: The case of fatal road crashes. CESifo working papers; Center for Economic Studies and the IFO Institute. 2022 May. Available from: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4118079#](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4118079#)
28. Resultat för befolkningens acceptans för vaccination mot covid-19 [Results for the population's acceptance of vaccination against COVID-19] [webpage]. Solna: Public Health Agency of Sweden; 2022 (<https://www.folkhalsomyndigheten.se/smittskydd-beredskap/utbrott/aktuella-utbrott/covid-19/statistik-och-analyser/acceptans-for-vaccination-mot-covid-19/>, accessed 27 July 2022) (in Swedish).
29. Bandy LK, Scarborough P, Harrington RA, Rayner M, Jebb SA. Reductions in sugar sales from soft drinks in the UK from 2015 to 2018. *BMC Med*. 2020;18(1):20. doi: 10.1186/s12916-019-1477-4.
30. Verrept H. What are the roles of intercultural mediators in health care and what is the evidence on their contributions and effectiveness in improving accessibility and quality of care for refugees and migrants in the WHO European Region? Copenhagen: WHO Regional Office for Europe; 2019 (<https://bci-hub.org/documents/what-are-roles-intercultural-mediators-health-care-and-what-evidence-their-contributions>, accessed 27 July 2022).
31. Fancourt D, Finn S. What is the evidence on the role of the arts in improving health and well-being? A scoping review. Copenhagen: WHO Regional Office for Europe; 2019

- (<https://apps.who.int/iris/bitstream/handle/10665/329834/9789289054553-eng.pdf>, accessed 27 July 2022).
32. As part of the initiative for piloting the European Child Guarantee programme, and under a partnership between UNICEF and H&M Foundation.
  33. UNICEF. New UNICEF study sheds light on the attitudes toward children with disabilities in Bulgaria. Published September 30, 2022. Accessed June 29, 2023. <https://www.unicef.org/bulgaria/en/press-releases/new-unicef-study-sheds-light-attitudes-toward-children-disabilities-bulgaria>
  34. UNICEF. *National Survey of Attitudes and Social Norms toward Children with Disabilities and Developmental Difficulties in Bulgaria Summary of Data.*; 2022.
  35. WHO surgical safety checklist. Geneva: World Health Organization; 2009 (<https://www.who.int/teams/integrated-health-services/patient-safety/research/safe-surgery/tool-and-resources>, accessed 27 July 2022).
  36. Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat A-H, Dellinger EP et al. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med*. 2009;360:491–9. doi: 10.1056/NEJMs0810119.
  37. Fotiadis K, Dadouli K, Avakian I, et al. Factors Associated with Healthcare Workers' (HCWs) Acceptance of COVID-19 Vaccinations and Indications of a Role Model towards Population Vaccinations from a Cross-Sectional Survey in Greece, May 2021. *International Journal of Environmental Research and Public Health*. 2021;18(19):10558. doi:10.3390/ijerph181910558
  38. Habersaat KB, Narayan S, Malue Nielsen S, Scherzer M, Salvi C, Seale H. How health workers can make a difference in the public COVID-19 vaccination response. *Vaccine*. 2022 Oct 12;40(43):6192-6195. doi: 10.1016/j.vaccine.2022.08.074. Epub 2022 Sep 6. PMID: 36163092; PMCID: PMC9444894.
  39. Avakian I, Anagnostopoulos L, Rachiotis G, et al. Prevalence and Predictors of COVID-19 Vaccination Acceptance among Greek Health Care Workers and Administrative Officers of Primary Health Care Centers: A Nationwide Study Indicating Aspects for a Role Model. *Vaccines (Basel)*. 2022;10(5):765. doi:10.3390/vaccines10050765
  40. WHO. Vaccines and immunization. (<https://www.who.int/health-topics/vaccines-and-immunization>, accessed June 23, 2023).
  41. Rechel B, Lessof S. *Health Systems in Action: Kyrgyzstan*. European Observatory on Health Systems and Policies; 2022 (<https://eurohealthobservatory.who.int/publications/i/health-systems-in-action-kyrgyzstan>, accessed June 23, 2023).
  42. Ravenscroft L, Kettle S, Persian R, Ruda S, Severin L, Doltu S et al. Video-observed therapy and medication adherence for tuberculosis patients: randomised controlled trial in Moldova. *Eur Respir J*. 2020;56(2):2000493. doi: 10.1183/13993003.00493-2020.
  43. WHO. Health Inequality Monitor: Explore health inequality monitoring evidence, tools, resources and training. Accessed June 29, 2023. <https://www.who.int/data/inequality-monito>
  44. Neenakosti in ranljivosti v zdravju v Sloveniji: Kvalitativna raziskava v 25 okoljih [Inequalities and vulnerabilities in health in Slovenia: Qualitative research in 25 settings]. National Institute of Public Health; 2020. <https://nijz.si/publikacije/neenakosti-in-ranjivosti-v-zdravju-v-sloveniji-kvalitativna-raziskava-v-25-okoljih/>
  45. Byström E, Lindstrand A, Bergström J, Riesbeck K, Roth A. Confidence in the National Immunization Program among parents in Sweden 2016 - A cross-sectional survey. *Vaccine*. 2020;38(22):3909-17
  46. Public Health Agency of Sweden. Prata om Vaccinationer. Återrapportering av regeringsuppdrag om att förbättra barns skydd mot smittsamma sjukdomar. (In Swedish, studies summarized on pages 39-40) [Cited cited July 6 2023] Downloaded from: <https://www.folkhalsomyndigheten.se/publikationer-och-material/publikationsarkiv/p/prata-om-vaccinationer-aterrapportering-av-regeringsuppdrag/>
  47. Appelqvist E, Danielsson M, Jama A, Schollin Ask L, Stenhammar C, Lindstrand A, Riesbeck K, Roth A. Parental views of childhood vaccinations in Sweden 2019 - A qualitative focus group study. Submitted 2023.



48. Public Health Agency of Sweden. Film: Fiona vaccinerar sig. . [Cited cited July 6 2023] Downloaded from: <https://www.folkhalsomyndigheten.se/vaccin-funkar/for-barn-och-unga-i-skolan/>
49. Public Health Agency of Sweden. Film: HPV. . [Cited cited July 6 2023] Downloaded from: <https://www.folkhalsomyndigheten.se/vaccin-funkar/for-barn-och-unga-i-skolan/>
50. Public Health Agency of Sweden. Film: Folke frågar om virus och bakterier. [Cited cited July 6 2023]. Downloaded from: <https://www.folkhalsomyndigheten.se/vaccin-funkar/material/#film>
51. Public Health Agency of Sweden. Conversation cards, book and poster: Folke asks about viruses and bacteria. [Cited cited July 6 2023] Downloaded from: <https://www.folkhalsomyndigheten.se/vaccin-funkar/material/>
52. Public Health Agency of Sweden. Fact sheets for parents: Bra att veta om vaccinationer [Cited cited July 6 2023] Downloaded from <https://www.folkhalsomyndigheten.se/smittskydd-beredskap/vaccinationer/kommunicera-om-vaccinationer/#foraldrar>
53. Public Health Agency of Sweden. Infographics, films and posters: Vaccin funkar [Cited cited July 6 2023] Downloaded from: <https://www.folkhalsomyndigheten.se/vaccin-funkar/material/>
54. Public Health Agency of Sweden. Training material and conversation card: Att prata om vaccination. <https://www.folkhalsomyndigheten.se/smittskydd-beredskap/vaccinationer/kommunicera-om-vaccinationer/att-prata-om-vaccination/>
55. Public Health Agency of Sweden. Metod för att förstå förändringar i vaccinationstäckning och vaccinationsvilja – Guide för regionalt och lokalt arbete baserad på WHO Europas Tailoring Immunization Programmes (TIP), pilotversion. 2022. <https://www.folkhalsomyndigheten.se/smittskydd-beredskap/vaccinationer/kommunicera-om-vaccinationer/metod-for-att-forsta-forandringar-i-vaccinationstackning-och-vaccinationsvilja/>
56. Jama A, Appelqvist E, Kulane A, Karregård S, Rubin J, Nejat S, Bach Habersaat K, Jackson C, Butler R, Lindstrand A, Godoy-Ramirez K. Design and implementation of tailored intervention to increase vaccine acceptance in a Somali community in Stockholm, Sweden - based on the Tailoring Immunization Programmes approach. Public Health in Practice 2022
57. Public Health Agency of Sweden. Perspectives on childhood vaccination in Sweden – four studies with child health care nurses, school health care nurses and parents. Draft in progress 2023.
58. Fancourt D, Finn S. What is the evidence on the role of the arts in improving health and well-being? A scoping review. Copenhagen: WHO Regional Office for Europe; 2019 (<https://apps.who.int/iris/bitstream/handle/10665/329834/9789289054553-eng.pdf>, accessed 27 July 2022).
59. Letley L, Rew V, Ahmed R, Habersaat KB, Paterson P, Chantler T et al. Tailoring immunisation programmes: using behavioural insights to identify barriers and enablers to childhood immunisations in a Jewish community in London, UK. Vaccine. 2018;36(31):4687–92. doi: 10.1016/j.vaccine.2018.06.028.
60. Antinyan A, Bertoni M, Corazzini L. Cervical cancer screening invitations in low- and middle-income countries: evidence from Armenia. Soc Sci Med. 2021;273:113739. doi: 10.1016/j.socscimed.2021.113739.
61. National Center for Disease Control and Public Health in Georgia supported by UNICEF, the Behavioural Insights Team and Information Technology Agency.
62. Murphy R, Taaffe C, Delaney L, et al. *The Better Letter Initiative: An Impact Evaluation of a Redesigned Waiting List Validation Letter*. Research Services and Policy Unit, Department of Health; 2020. <https://assets.gov.ie/83368/e980178a-6511-40d8-96f0-01bbf654879a.pdf>
63. Health 2020 priority area four: creating supportive environments and resilient communities: a compendium of inspirational examples. Copenhagen: WHO Regional Office for Europe; 2018 (<https://apps.who.int/iris/handle/10665/342209>, accessed 27 July 2022).
64. Morton K, Beauchamp M, Prothero A, et al. The effectiveness of motivational interviewing for health behaviour change in primary care settings: a systematic review. *Health Psychology Review*. 2015;9(2):205-223. doi:10.1080/17437199.2014.882006

65. van Keulen HM, van Breukelen G, de Vries H, Brug J, Mesters I. A randomized controlled trial comparing community lifestyle interventions to improve adherence to diet and physical activity recommendations: the VitalUM study. *Eur J Epidemiol*. 2021;36(3):345-360. doi:10.1007/s10654-020-00708-2
66. Fishbein M, Ajzen I. *Predicting and Changing Behavior: The Reasoned Action Approach*. Psychology Press; 2011.
67. Bandura A. *Social Foundations of Thought and Action*. Prentice-Hall; 1986.
68. Prochaska JO, DiClemente CC, Norcross JC. In search of how people change: Applications to addictive behaviors. *American Psychologist*. 1992;47:1102-1114. doi:10.1037/0003-066X.47.9.1102
69. Sheeran P. Intention—Behavior Relations: A Conceptual and Empirical Review. *European Review of Social Psychology*. 2002;12(1):1-36. doi:10.1080/14792772143000003
70. Indseth T, Elgersma IH, Strand BH, et al. Covid-19 Blant Personer Født Utenfor Norge, Justert for Yrke, Trangboddhet, Medisinsk Risikogruppe, Utdanning Og Inntekt, Rapport 2021 [Covid-19 among Persons Born Outside Norway, Adjusted for Occupation, Household Crowding, Medical Risk Group, Education and Income, Report 2021]. Norwegian Institute of Public Health; 2021.  
<https://www.fhi.no/globalassets/dokumenterfiler/rapporter/2021/covid-19-blant-personer-fodt-utenfor-norge-justert-for-yrke-trangboddhet-medisinsk-risikogruppe-utdanning-og-inntekt-rapport-2021.pdf>
71. Berg SH, O'Hara JK, Shortt MT, et al. Health authorities' health risk communication with the public during pandemics: a rapid scoping review. *BMC Public Health*. 2021;21(1):1401. doi:10.1186/s12889-021-11468-3
72. Brekke JP. Informing Hard-to-Reach Immigrant Groups about COVID-19—Reaching the Somali Population in Oslo. *Journal of Refugee Studies*. 2022;35(1):641-661. doi:10.1093/jrs/feab053
73. Elgersma IH, Fretheim A, Indseth T, Munch AT, Johannessen LB, Hansen CE. The Evaluation of a Social Media Campaign to Increase COVID-19 Testing in Migrant Groups: Cluster Randomized Trial. *J Med Internet Res*. 2022;24(3):e34544. doi:10.2196/34544
74. Instituto de Salud Carlos III. Monitorización del comportamiento y las actitudes de la población relacionadas con la COVID-19 en España (COSMO-SPAIN): Estudio OMS [Monitoring of behavior and attitudes of the population related to COVID-19 in Spain (COSMO-SPAIN): WHO study].  
<https://portalcne.isciii.es/cosmo-spain/>
75. Romay-Barja M, Rodríguez-Blázquez C, Falcón-Romero M, Forjaz MJ. Behavioral insights in Spain: the COSMO-Spain experience. Presented in 2023. <https://www.youtube.com/watch?v=ZKjxPiN1cZY>
76. Antibiotic resistance: using a cultural contexts of health approach to address a global health crisis. Copenhagen: WHO Regional Office for Europe; 2019 (<https://apps.who.int/iris/handle/10665/330029>, accessed 27 July 2022).
77. Hallsworth M, Chadborn T, Sallis A, Sanders M, Berry D, Greaves F et al. Provision of social norm feedback to high prescribers of antibiotics in general practice: a pragmatic national randomised controlled trial. *Lancet*. 2016;387(10029):1743–52. doi: 10.1016/S0140-6736(16)00215-4.