National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Behaviour as key to the pandemic
Lessons learned, initial insights
6 July 2022; National Institute for Public Health and the Environment (RIVM),
The Behavioural Unit

National Institute for Public Health and the Environment (RIVM) founded the Behavioural Unit in late March 2020. This was during the first phase of the pandemic and a lockdown seemed inevitable. There was a growing awareness that behaviour change was key to limiting the spread of the virus. However, in the Dutch policy context behavioural science expertise had not yet been incorporated into the national crisis structure.

Experts who managed to set up a new team in a single week: the RIVM Behavioural Unit. The unit had a research programme, initial funding, an independent Scientific Advisory Council (WAR) and collaborative ties with the various Municipal Health Services in the Netherlands.

But how can one tackle something like a pandemic, especially when nobody has ever experienced anything like it? Even though the behavioural sciences provide a solid foundation to monitor and support behaviour, well-being, and trust, both the scope, dynamics of required decision-making in crisis were unprecedented. Contributing in times of crisis, without an RIVM behavioural science unit in place at the start of the pandemic, was a major challenge.

Efficient working methods were developed, and a lot of research was conducted since. The behavioural insights yielded by this research have been translated into points of attention[1] for policy and communication. This way the Behavioural Unit has, with great regularity, provided and explained reliable national and regional insights for public support and adherence to the measures, well-being, trust in policy measures among citizens and organisations, as well as vaccination willingness. The results have been used to answer questions by the Ministry of Health, Welfare and Sport (VWS), the government, the NKC, the National Coordinator for Security and Counterterrorism (NCTV), Municipal Public Health Services (GGD GHOR), municipal authorities, the Outbreak Management Team (OMT) and the national media.

Now that we have reached a slower phase of the pandemic (in early summer 2022), it is time to reflect. What was our approach? What key insights have we gained? Which research methods have shown to be valuable? How did we obtain those insights, and how have we used them? And with respect to the future: what can be improved? And what is needed for doing so?

This document contains an account of how we erected the Behavioural Unit, followed by some overarching reflections on steps to ensure its effective use. Next, we present several specific lessons learned in three sections:

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[1] Given that the Behavioural Unit has no formal role in the national crisis structure, the RIVM Behavioural Unit was not in a position to issue direct recommendations. For that reason, the Behavioural Unit uses the term 'points of attention' instead of 'recommendations'.

Behaviour and Well-being, Research, and Implementation. With this report we provide a brief and to the point account, aimed at policymakers, and mindful of future needs and developments. A more extensive version follows in late 2022, based in part on lessons learned elsewhere.

How did the Behavioural Unit set about its task?

To be able to inform the government and provide reflections, we kept track of the scientific literature, set up and conducted a large-scale survey, conducted interviews with citizens and sector representatives, carried out scenario and intervention studies and, very frequently, consulted external scientific experts. Those experts provided up-front input for our research, reviewed our work, and provided commentary. This made it possible to benefit from the available knowledge and safeguard both the quality and transparency of our work and the 'points of attention'.

All this knowledge enabled the Behavioural Unit to answer large numbers of ad-hoc questions from policymakers and communication professionals. In addition, regular studies have been carried out on an ad-hoc basis for in-depth and strategic questions, including scenario and intervention studies as well as extensive research among civil-society organisations.

These 'behavioural reflections', based on research and consensus among experts, have been presented to the NCTV and the Ministry of VWS since 2021. Reflections consist of behavioural scientific perspective on the impact of proposed policy options on compliance, public support, trust, and well-being. These reflections have been presented by the NCTV in so-called Catshuis (the prime minister's residence) consultations and shared by the Ministry of VWS with the House of Representatives. They have also been used to inform debates on policies pursued and its related communication.

The Behavioural Unit also integrated the results of research, translated them into 'points of attention' for policy and communication with other knowledge products, and shared them with the Ministry of VWS, the NCTV, the NKC, the Municipal Public Health Centres, the OMT and the national media.

See the figure on the next page for an overview of the various studies and knowledge products of the Behavioural Unit and the channels used to disseminate the knowledge and insights.
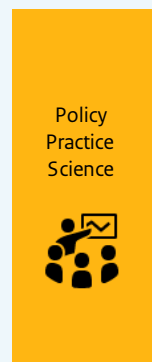
RIVM Behavioural Unit Method

Policy question about behaviour
e.g. about testing, vaccination, measures, public support, trust, well-being

For a broad or specific population

Research methods

- Survey
- Literature search
- Interviews and focus groups
- Trend study coronadashboard
- Service provider case studies
- Scenario and intervention studies

Knowledge products

- In-depth policy memo's
- Research reports
- Ad-hoc questions and answers
- Behavioural reflections
- E-learning and training
- (Scientific) articles

Channels

- RIVM.nl
- Social media
- Media presence Contact persons
- Newsletters
- Presentations
- Webinars
- Network

Policy
Practice
Science

Multidisciplinary Behavioural Unit
Behavioural scientists, data analysts, communication professionals

In collaboration with: partners from the field, experts and knowledge institutes

Overarching reflections for an effective use of a Behavioural Unit

Knowledge base

- Policymakers and communication professionals can be further enabled by direct access to up-to-date knowledge and insights on behaviour, public support, trust and well-being among citizens and organisations to make well-informed policy decisions during the high stake, fast-paced context of a pandemic.
- This requires a permanent and up-to-date knowledge base for them to consult whenever necessary. That knowledge base comprises measurements of behaviour and predictors of behaviour, public support and well-being and can be rapidly scaled up during times of crisis. There is also room for in-depth strategic research (e.g., future scenario studies), literature studies and ad-hoc research to answer urgent questions (e.g., about intervention effectiveness), all of which have shown to be extremely valuable.
- The integration of the various research methods and content-related domains (multi- and interdisciplinary approaches) are important for our ability to identify the areas where, and instruments with which, policy interventions could be effective.
- In the early phase of the pandemic, the Behavioural Unit did not yet exist. This is why the RIVM knowledge base and capacity were limited at the time. As a result, during the pandemic it was not always possible to immediately conduct relevant research, effectively arrange open science structures and apply more advanced methods and analyses.
- Right from the point of initiation of the Behavioural Unit, the choice was made to engage leading experts from the behavioural and communication sciences. Their contributions have shown to be extremely valuable, both in terms of the required speed and scientific quality and reliability.
- To identify the behavioural insights that are relevant for long-term COVID-19 policy in the Netherlands, it is also valuable to analyse examples of the use of behavioural knowledge and insights for policy purposes in other countries, and the experiences gained there.
- The consequences of unhealthy lifestyles were relevant for public health outcomes during the COVID-19 pandemic. Because lifestyle involves behaviour, a behavioural science knowledge base and network can offer great value added to lifestyle policy and practice.

Positioning

- Effective utilisation of behavioural knowledge in government policy calls for the permanent provision of this expertise in both the pre- and post-policy formation phase (knowledge input for policy formation and knowledge input for policy implementation, respectively).
- Behavioural knowledge is spread across multiple institutions in the Netherlands. This calls for an active network, periodic interdisciplinary knowledge exchange and arrangements for complementary collaboration. This will offer an effective and efficient way of making knowledge available for policy and communication purposes.
- With respect to behavioural science input for policy formation (the behavioural reflections), it is important to be well-informed about the proposed measures and the associated epidemiological forecasts. In practice, the Behavioural Unit and the OMT had more or less parallel processes in two separate entities, meaning that the Unit

had not yet been able to study the OMT recommendations and forecasts prior to publication. We could solve this problem by organising those processes sequentially or in parallel and discussing them in a multidisciplinary consultative body.

- The RIVM Behavioural Unit has shown its value as a point of contact and knowledge broker between the government and behavioural science-based knowledge and expertise in the Netherlands.
- A formal structure for consultation with the government ministries involved is necessary to ensure that in times of crisis, behavioural expertise is available in the policy cycle at the right level, at the right time, in the right way and to the right people.

💬 Impact

- To generate impact with insights from the behavioural sciences, it was important to share results with the relevant policymakers and communication professionals (such as the NKC) as quickly, succinctly, and clearly as possible. Short and compact texts and visuals shared via online webinars and personal contacts were extremely valuable for a field of expertise that did not form part of the national crisis structure.
- The toolbox of behavioural science interventions is large. During the pandemic, the main tools used to fight it were government recommendations, communication campaigns, lockdowns, and other restrictions. Policy during a pandemic could benefit from a further systematic integration of recommendations from the behavioural sciences on communication combined with adjustments to the physical and/or social context, facilities, and enforcement.
- In providing behavioural reflections on proposed COVID-19 measures, the Behavioural Unit identified both the impact on aspects such as well-being and loneliness, as well as the extent to which that impact might be particularly burdensome for specific groups. These are relevant aspects to be considered in determining the broad social impact of proposed COVID-19 measures.
- A single, universal approach will not work as citizens and target populations are all different. In policy choices and communication strategies it is therefore important to take account of diversity and of people in socially vulnerable positions. This makes the pandemic approach more inclusive, increases its impact and ensures that policies do not contribute to (or as little as possible) existing health differences between social groups.
- Firmly embedding the results of behavioural science research in policy measures calls for investments in the relationship and interaction between policymakers and researchers. This will help to increase the accessibility and utility of behavioural science-based knowledge for policymaking ('science for policy').
- The knowledge gained by the Behavioural Unit, its methods and experiences also offer opportunities to contribute to solving other major and urgent social issues, such as promoting sustainability, healthier lifestyles, and sensible care.

Block 1: Lessons learned about behaviour and well-being

The Behavioural Unit has gathered a great deal of knowledge and numerous insights on behaviour, well-being and preferences of citizens and organisations during the pandemic. The tools used to collect that knowledge included questionnaires, interviews, focus groups, scenario studies and evaluations of changing policies. Every effort was made to take specific groups into account, such as young people, the elderly, or individuals with vulnerable health. The research distinguishes between three types of preventive behaviour: i) behaviour intended to reduce social contacts (e.g., avoiding crowds, quarantine or isolation), ii) behaviour aimed at reducing the risks associated with social contacts (e.g. following hygiene-related advice, or testing for symptoms) and iii) vaccination behaviour.

Behaviour and determinants

- The effectiveness of policy choices in fighting the pandemic depends in part on careful monitoring of compliance with the measures imposed. Compliance with hygiene-related advice and with quarantine and isolation measures was relatively stable throughout the pandemic. The number of people who tested for symptoms increased substantially over time but halved since the 'closure' of the Municipal Public Health Service testing sites (April 2022). There was considerable variation in levels of compliance with contact-restrictive measures, depending on the measure, target population and viral pressure.
- Long-term behavioural change depends on three key conditions: people must be motivated (for instance, because they feel the measures are effective and proportional, or due to visible enforcement), they need the necessary capabilities (such as self-testing skills and mental fitness), and the opportunity (such as accessible vaccination facilities and financial resources). These factors vary between behaviours and, in part, between groups, and they are important for policy and communication.
- Policy choices have a considerable effect on compliance levels. For example, when measures to restrict visitor numbers are relaxed, people will no longer strictly adhere to social distancing measures - not because they do not want to, but because larger crowds make it more difficult for them to do so. The same applies to communication: if the authorities clearly explain why the chosen measures are useful and important, people will be more motivated to comply with them. To control the pandemic effectively, it is important to know exactly which policies and which communication strategies work best for which target populations.
- In January 2021, the Behavioural Unit formulated three important pillars for COVID-19 vaccination uptake: i) providing transparent information about the pros and cons of vaccination, ii) supporting people in making their choice and enabling them to ask questions, and iii) removing practical obstacles, such as poor accessibility of vaccination facilities and the need to use a digital identification method (DigiD) to make an appointment. People with questions should have easy access to a medical expert and to other people in their environment whom they trust. To increase vaccination uptake, it is important to design intervention strategies which, right from the start of the vaccination campaign, focus on groups where uptake levels are expected to be low, such as young people or people with a migration background.

Trust

- As a pandemic persists, the more likely we are to see social unrest, disinformation and resistance to policies that curb individual or collective freedoms. Transparent, inclusive, equitable and consistent policies and communication are important to maintain the public's trust in COVID-19 policy. When communication stops (as it did in the summer of 2020) or when policies appear to be counter-productive (peak in night-life infections, summer 2021), this is reflected immediately in a sharp fall in trust levels. Trust in the government is also crucial for effective policy. For example, it is an important predictor for a person's willingness to have themselves vaccinated.
- Civil-society organisations play a key role in communicating national COVID-19 policies to the general public. Through a process of trial and error, the government has gained a great deal of experience in implementing COVID-19 policy and identifying the negative effects on the well-being of employees, patients, or students. If sectors fail to utilise that knowledge and experience, this may affect the public support for and compliance with future policies.

Well-being

- Contact-restrictive measures that severely restrict social life involve risks for a person's mental well-being. The measures had a significant impact on the daily lives – and well-being – of young people, even though they faced the lowest risk of severe COVID-19. It is important, therefore, to carefully weigh the expected positive and negative effects of measures in advance, and to communicate about those effects in a comprehensive and transparent manner. This should be done with due regard not only for infection or hospitalisation rates, but also for the mental, social and financial consequences of the measures. If not, people will make their own cost-benefit analysis and decide for themselves whether the advantages of compliance outweigh the disadvantages.

Target populations and contexts

- It is important to differentiate according to target population and context. For example, regular communication strategies were far less effective in reaching individuals with low-literacy skills and people with a migration background. When measures are relaxed, individuals with vulnerable health may actually *reduce* their participation in society due to fear of infection. Young people are more likely to gather in groups but are better at complying with test and hygiene recommendations. A detailed picture – not only of infection rates but also of behaviour and well-being - among various segments of the population is therefore important for tailored policy advice and communication.

Block 2: Lessons learned about research

To be able to answer policymakers' questions about behaviour, well-being and citizens' trust, the Behavioural Unit used a wide variety of research methods. These include periodic online questionnaires, with tens of thousands of people. This has made it possible to not only analyse current patterns, but also to analyse changes in behaviour over time to better explain people's behaviour. Interviews and focus group discussions with citizens and professionals provided supplementary insights, for instance by identifying policy challenges. Literature research, in-depth analyses and (semi-)experimental studies helped to find answers to more specific questions. Integration of the results provided a comprehensive and reliable overview of behaviour and well-being during the pandemic.

How to conduct research in times of crisis?

- Maintaining a solid knowledge base is essential for our ability to provide fast and high-quality policy support and for early detection of emerging topics that may become relevant in the short term. To monitor and explain changes in levels of compliance, well-being, trust and the public support base over time, a large-scale survey combined with interviews among citizens and literature research was extremely useful. Cross-pollination between these studies and integration of the findings made it possible to monitor citizens' response to COVID-19 policy in a reliable fashion. This also provided a basis for recommendations on the best way to address challenges.
- Sectors play a crucial role in translating government policies into practical measures. For policies to remain effective in the long term, we need insight into public support base within organisations, the negative effects they experience and their need for assistance. To that end, we performed narrative research among various civil-society organisations. Stakeholders indicate to feel more involved with policy development if policymakers take results of such research into account.
- Effective control of a pandemic calls for an ability to look ahead, involving citizens and sectors in a timely fashion. For this purpose, we carried out large-scale scenario studies among citizens and focus groups among civil-society groups, and organisations with the relevant networks and expertise, to gather their ideas about the (medium and long term) future.
- During a pandemic, unique situations will occur that require rapid research to determine the effectiveness of various policy options. For this purpose, we used intervention studies. For example, to study the effects of the proximity of test sites on testing behaviour, the effect of face masks on social distancing, vaccination willingness among young people, and the impact of the pandemic on persons with a migration background. The ability to interact and work with partner institutions was found to be extremely valuable.
- To strengthen the quality of the research and recommendations, external senior academics supported the Behavioural Unit's research at the study design and review stage. Expert consensus was also a valuable source of information in situations where scientific evidence was lacking.
- Working from a central Behavioural Unit helped to ensure "short lines of communication". Enabling efficient integration of knowledge from different research methods, contributed to the rapid provision of high-quality knowledge.

Room for improvement

- Very limited intervention research was performed. To effectively support engagement with behavioural measures, we need systematic, controlled research into the effects of different types of behavioural measures (communication, context, control). By developing protocols for this type of research, we will be better prepared for any future pandemics.
- If we are to enhance the effectiveness of interventions, we need to pay more attention to differences between people (and between groups of people) in our research. Similarly, we need to attend to the fact that behavioural interventions do not have the same impact on every group or on every member within a group.
- To gain more insight into specific groups or sub-groups of citizens and professionals (e.g., persons with a migration background, persons who have had practical training or who work in various sectors), we need supplementary research methods that are more attuned to the specific social environments and contexts of these people. This calls for a solid knowledge base and high-quality collaboration with organisations that have specific expertise in this area.
- It is quite likely that the spread of inaccurate information (misinformation) affected public support for and compliance with all COVID-19 measures (including vaccination). This phenomenon of manipulating public debate has been addressed, but it has not been studied to any significant degree. Such research calls for specific expertise and research methods which the Behavioural Unit and its partners could not yet provide.
- More advanced methods of analysis could have yielded supplementary insights but could not be realised effectively in the short term due to a lack of capacity. This underlines the need for a central base with an established academic network from which various areas of expertise can be deployed when required.
- General Data Protection Regulations (GDPR) made it impossible to share data of the Behavioural Unit with external parties other than at an aggregated level. During the start-up phase of the survey, more time was required for legal advice than expected, and the legal experts themselves did not always agree with each other. It is better to build the framework for large-scale research in a cold phase.
- Processing behavioural knowledge in infection models may improve our understanding of the effect of behaviour on infection rates, and it may also help us produce more reliable assessments and forecasts.

Block 3: Lessons learned about implementation

The entire process - formulating the question, developing knowledge, integrating, and disseminating knowledge and insights - has yielded a diverse range of knowledge products that have been disseminated via different channels. To determine the form and content of the lessons learned, we used the results of needs assessments among professionals in policy and practice, an internal evaluation and additional reflections from the Behavioural Unit and experts involved.

What is required for the effective dissemination of behavioural knowledge?

- Close collaboration with the NKC enabled the continuous exchange of knowledge and insights for communication purposes. This made it possible to provide input for speeches at the government's press conferences, for the national campaigns and the government's websites.
- During a crisis it is crucial that the knowledge and insights gained are promptly made available to and shared with the Ministry of VWS and other parties, in a concise and accessible manner, either orally or in writing. In this way, policy questions can be answered at the right moment. This enhances the utilisation of behavioural knowledge for policy formation.
- Interviews among policymakers and communication professionals about the knowledge supplied and related knowledge products generated useful insights and opportunities for intermediate improvements. This is important for the development of compact and tailored products integrating insights and interpretations.
- The development of knowledge products was intended to increase our ability to rapidly share new insights and interpretations, based on policy questions and current developments during the pandemic. To that end, in addition to providing knowledge products in written format, the Behavioural Unit deployed contact persons at the Ministry of VWS and launched webinars. Due to their interactive nature, these instruments made it possible to provide tailored knowledge and insights and make them accessible for policy and practice.
- The insights from behavioural science research about compliance, trust and well-being were regularly shared with national and regional media by RIVM, by members of the Scientific Advisory Council and the expert teams. Contributions from this behavioural science perspective are necessary to explain to the public what role behaviour plays in the pandemic.
- The Behavioural Unit organised several training courses and numerous online webinars for communication professionals and policymakers (national and regional). These were well attended and highly appreciated and appear to fill a need. Demand exceeded the capacity and possibilities available.
- Collaboration with the Netherlands School of Public & Occupational Health (NSPOH) helped to reach practicing professionals (e.g., public health and communication). For this purpose, the knowledge and insights gained have been gathered and broadened in an e-learning module called 'Behaviour and COVID-19' and the 'Communication Methods to Support Behaviour' matrix.

What is required to achieve more?

- The effective dissemination and utilisation of knowledge to support policy calls for a good understanding of the knowledge needs, working methods and context of policy professionals in times of crisis. This is determined by a wide variety of factors, such as timing and the socio-political context. The deployment of contact persons (liaison officials) at the Ministry of VWS and the NKC was greatly appreciated and found to provide added value. However, this is not sufficient for a truly profound understanding of the behaviour and context of the policymakers themselves, which is needed to facilitate the optimal utilisation of knowledge for policy purposes.
- A further crucial element for such effective knowledge utilisation by policymakers, in addition to the need for knowledge to be accessible, understandable, up to date, reliable and to offer concrete courses of action, is the *interaction* about the knowledge and insights presented. This calls for knowledge brokers that can build bridges and create interaction between the domains of policy and research, which each have their own reality, dynamics, time horizon, work cycle and reference framework.
- An intensive relationship and exchange with the responsible policymakers is important in the effort to improve the behavioural reflections on future policy - which had to be available within 6 to 48 hours - and to make them more meaningful. The Behavioural Unit's contact persons at the Ministry of VWS are crucial for this. In this way, preparations can be initiated as early as possible. In addition, this arrangement offers the possibility of an oral explanation by a behavioural expert. This is helpful when weighing the policy options available.
- To be able to reflect on issues such as public support, compliance and impact on people's well-being, it is important that the relevant expertise is brought in at the right moment during the policy preparation and execution process. In addition, it is important for this expertise to be represented among those who weigh and assess the policy options.
- A great deal of behavioural science expertise concerns the effect and evaluation of specific interventions: an integrated approach to communication, context adjustment, (social) control and, if necessary, enforcement. That solid, substantiated, and integrated approach in the collaboration between policy, research and practice has not always been materialised, due to time pressure and the structure in the execution phase. To prepare for the future, this issue will need to be addressed as a matter of priority.

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