

# **Public Health Foresight Study**

## *(Volksgezondheid Toekomst Verkenning)*

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## List of Abbreviations

<b>AC</b>	Audit Committee
<b>BoD</b>	Board of Directors RIVM
<b>COVID-19</b>	Coronavirus Disease 2019
<b>fte</b>	Fulltime-equivalent
<b>GGD</b>	<i>Gemeentelijke of Gemeenschappelijke Gezondheidsdienst</i>
<b>HRU</b>	Heads research unit
<b>KNAW</b>	<i>Koninklijke Nederlandse Akademie van Wetenschappen</i> (Royal Netherlands Academy of Arts and Sciences)
<b>LO</b>	Liaison Officers of the SAB
<b>NWO</b>	<i>Nederlandse Organisatie voor Wetenschappelijk Onderzoek</i> (Netherlands Organization for Scientific Research)
<b>PBL</b>	<i>Planbureau voor de Leefomgeving</i>
<b>PhD</b>	Doctor of Philosophy
<b>PL</b>	Project leader audit
<b>PT</b>	Project Team audit RIVM
<b>RIVM</b>	<i>Rijksinstituut voor Volksgezondheid en Milieu</i> (National Institute for Public Health and the Environment)
<b>SAB</b>	Scientific Advisory Board of RIVM ( <i>Commissie van Toezicht</i> )
<b>SCP</b>	Sociaal en Cultureel Planbureau
<b>SEP</b>	Strategy Evaluation Protocol 2021-2027
<b>SWOT</b>	Strengths, Weaknesses, Opportunities, and Threats
<b>UMC</b>	University Medical Centre
<b>VNG</b>	<i>Vereniging van Nederlandse Gemeenten</i>
<b>VTV</b>	<i>Volksgezondheid Toekomst Verkenning</i> (Public Health Foresight Study)
<b>VWS</b>	<i>Ministerie van Volksgezondheid, Welzijn en Sport</i> (Ministry of Health, Welfare and Sport)

## 1. Summary

This report presents the evaluation of the scientific quality and independence of the public health foresight studies performed by the Dutch National Institute for Public Health and the Environment (RIVM) in the period 2016-2021. The evaluation (audit) was commissioned by the Scientific Advisory Board of RIVM and was performed by an external audit committee. The committee based its conclusions on a self-assessment report, a stakeholder assessment report, and several additional documents provided by RIVM, as well as a series of interviews with representatives of RIVM and external stakeholders during a three-day site visit on 20-22 June 2022.

The scope of the audit concerned the entire field of expertise of public health foresight, primarily positioned within the RIVM Centre for Health and Society. During the evaluation period, one full edition of the public health foresight study (*Volksgesondheid Toekomst Verkenning*, VTV) was created (VTV-2018) and one special, COVID-19 related, edition (c-VTV-2020). The overall aim of the VTV is to better prepare policymakers and society for the future by providing insight into important current and potential future developments and societal challenges in public health and healthcare.

The committee rates the **scientific quality** of the VTV-2018 and c-VTV-2020 as variable, with some components of outstanding quality and others unsatisfactory. The quantitative work within the VTV project has an excellent academic reputation and is scientifically sound. The qualitative work is in its infancy, not optimally making use of the sophisticated qualitative methods that are available nowadays. Since the first VTV was produced by RIVM in 1993, other research groups and organizations have entered the field of foresight studies. As a result, RIVM's VTV has lost some of its unique position as a frontrunner from a methodological perspective. Nevertheless, the VTV is regarded as an authoritative resource by many scientists and other users in the Netherlands. The peer-reviewed papers and presentations at international conferences can be interpreted as a sign of international scientific acknowledgment. The committee experienced difficulties in finding the exact methodology underlying the various components of the VTV on the websites of the VTV-2018 and c-VTV-2020. The committee recommends investing in the transparency of the methodology and the overall VTV process because reproducibility is a core aspect of research quality. In addition, the committee recommends involving more critical experts in the VTV process, to ensure a rigorous scientific quality assurance.

The committee rates the **independence** of the VTV from the commissioner as sufficient in terms of choosing the agenda and methodology of the VTV, assessing the data, and weighing alternative explanations, and publishing results that may deviate from the expectations or wishes of the Ministry of Health, Welfare and Sport. Independence also implies not being guided by commercial, political, or scientific interests of individual VTV team members, stakeholders, and all other participants involved in any form. At present, this form of independence is not structurally embedded in the VTV process, although the committee did not find direct evidence of independence being compromised. The committee suggests adopting more structured methods for stakeholder consultation and a more standardized process to make possible conflicts of interest of participants transparent. This would also help the VTV team members to enhance the inclusivity of the VTV process and messages, and to

include (organized) citizens as stakeholders. The committee also recommends engaging in sustainable long-term collaborations with academic research groups to strengthen the independent position of the VTV project and to benefit from 'fresh' outside views.

RIVM is keenly aware that **involving practice and stakeholders** is the key to making a societally relevant product. To this end, RIVM is involving a broad range of external experts, scientists, and other stakeholders in the VTV process. The committee acknowledges the effort that RIVM makes to engage these various groups. However, the committee recommends adopting a more structured approach in stakeholder participation process and putting more effort in engaging (organized) citizens. In addition, we recommend investing in the development of in-house expertise in exploring signals from society (e.g., through a citizen panel or other participatory approaches). This will allow RIVM to make optimal use of collective intelligence, resulting in a product with maximal societal impact.

Despite several clear examples of the **contribution of the VTV to public health decision-making by the national government**, the committee has the impression that the Ministry of Health, Welfare and Sport experiences difficulties in optimally exploiting the VTV. The VTV team may consider increasing its impact on policymakers by seeking more interaction with directorates of the Ministry of Health other than exclusively Public Health, as well as other ministries (especially Social Affairs & Employment and Education, Culture & Science). In addition, the VTV team may consider approaching the '*Vaste Tweede Kamer Commissie Volksgezondheid*' and scientific agencies of the political parties to facilitate a wider influence of its product(s). In addition, the committee sees room to increase the impact of the VTV on the local health memoranda, for instance by providing local projections and foresights.

To preserve or improve the research quality, independence, societal impact, and viability of the VTV in the future, the committee has the following **strategic recommendations**:

1. Develop a future scientific strategy regarding foresight studies in public health.
2. Become more active in the broader field of foresight studies.
3. Invest in transparency and findability of the VTV methodology and process details.
4. Engage in sustainable long-term collaborations with academic research groups.
5. Expand and improve the methodological rigour of qualitative research within the VTV, including the stakeholder engagement process.
6. Rethink the communication about the VTV messages.
7. Include more critical opinions in the various advisory boards and in the VTV process and do this in a structured, transparent, and traceable way.
8. Increase the impact of the VTV in Dutch municipalities and regions.

## 2. Introduction

This report presents the evaluation of the scientific quality and independence of the field of expertise ‘Public health foresight study’ of the Dutch National Institute for Public Health and the Environment (RIVM) in the period 2016-2021. The evaluation was commissioned by the Scientific Advisory Board (SAB, *Commissie van Toezicht*) of RIVM, and was performed by an external audit committee (section 2.4) using the Guide for external evaluations at the Dutch National Institute for Public Health and the Environment (section 2.3).

### 2.1 Public health foresight studies at RIVM

RIVM works towards a healthy population living in a sustainable, safe, and healthy environment, and has done so for more than a century. It is an agency of the Ministry of Health, Welfare and Sport (*Volksgesondheid, Welzijn en Sport, VWS*, referred to as ‘Ministry of Health’ in this report).

Commissioners of RIVM include national ministries, inspectorates, and international organizations such as the European Union and the United Nations. In addition to its role as a research institute in the field of public health and epidemiology, RIVM is a longstanding trusted advisor to the government, professionals, and members of the public. The institute has five operational roles (policy advice, information provision, monitoring & surveillance, crisis & incident management, and programme coordination), supported by research. Scientific knowledge constitutes the basis for the execution of RIVM’s tasks. This knowledge is gathered by RIVM itself, commissioned by RIVM, or collected from elsewhere by RIVM.

RIVM performs public health foresight studies (*Volksgesondheid Toekomst Verkenningen, VTVs*) as part of its legal task. The VTV is commissioned by the Ministry of Health and used to select policy themes for the National Health Policy Memorandum of this ministry. This Memorandum subsequently forms the basis for the local health memoranda of municipalities. RIVM has produced a VTV approximately once every four years since 1993. During the evaluation period, one full edition was created (VTV-2018, entitled ‘A healthy prospect’) and one special edition (c-VTV-2020, entitled ‘Looking beyond COVID-19, about the future of public health’). The latter was developed in a period of only nine months and focused on possible health impacts of the COVID-19 pandemic. The next full edition of the VTV is planned to be completed in 2024. With the VTV, RIVM has developed a tradition of describing, interpreting, and exploring Dutch public health through a recurring project with a prominent position in the public health division of RIVM.

RIVM’s activities in the field of public health foresight studies are concentrated in the **Department** of Public Health Explorations within the **Centre** for Health and Society, which is embedded in the RIVM **Domain** Public Health and Healthcare Services. Although the project leadership is always allocated to the department of Public Health Explorations, the development of the VTV draws from the knowledge, skills, and expertise of multiple RIVM departments and centres.

The VTV is produced by a multidisciplinary core team consisting of epidemiologists, physicians, social scientists, mathematicians, historians, economists, and communication experts. The VTV team is supervised by two project leaders, a project secretary, and several subproject leaders (VTV core

team). Multiple committees advise the VTV project team, including an internal RIVM committee, an external scientific advisory board (which is a different entity than the above-mentioned *Commissie van Toezicht*) and a policy advisory group (with representatives of the Ministry of Health as well as other ministries). During the evaluation period, approximately fifty persons were actively involved in developing the VTV, with an average capacity of 4.32 fte per year allocated to the VTV project (ranging from 1.2 to 7.6 fte per year). This number excludes the manpower invested in the basic data and knowledge infrastructure at the Centre for Health and Society. The average annual budget was M€0.78 (ranging from M€0.28 to M€1.3). Further details about staff capacity, output, and funding are provided in the Appendix in section 5.2.

## 2.2 Scope and function of the evaluation

The SAB regularly organizes independent evaluations (audits) to assess whether the RIVM activities comply with current scientific standards. These audits fulfil a duty of accountability towards government and society. The main function of the audit described in this report was to determine the scientific quality and independence of the RIVM work regarding the VTV. The audit was expected to result in specific lessons to improve the scientific quality and independence of future editions of the VTV (i.e., to learn). The scope of the audit concerned the entire field of expertise of public health forecasting, primarily focused within the Centre for Health and Society. The audit focussed on the VTV-2018 and the c- VTV-2020, i.e., the work of RIVM regarding the VTV in the period 2016-2021. The VTV contributes particularly to the RIVM roles of research, policy advice, and information provision, so the assessment focused on these three roles. In addition, the audit addressed the way in which knowledge is generated from practice and stakeholder consultation and the impact of the VTV on evidence informed policy making.

Two main questions and two sub questions summarize the scope of the audit:

### *Main questions*

1. What is the **scientific quality** of RIVM's work concerning the VTV?
2. To what extent are the activities concerning the VTV carried out **independently**?

### *Sub questions*

3. In what way is VTV-knowledge partly generated from **practice and stakeholder consultation**?
4. Does the VTV contribute to **informed public health decision-making** by the national government?

### *Assessment criteria*

The audit committee answered the above-mentioned questions by exploring four main assessment criteria:

- **Research quality**, i.e., the quality and scientific relevance of the research, including the academic reputation, originality of the research and approach, importance for the field, quality of publications and other research products for peers, and invitations for lectures and congresses. Since scientific publications are not the main objective of the VTV, the research output was not only assessed based on academic output such as journal articles and book chapters, but also on the methods used and the quality of other products such as websites for professionals, presentations and conference proceedings, and data sets and software.

- **Integrity/independence**, i.e., the extent to which the VTV is based on an independent and critical pursuit of science; how scientific independence from policymakers (including the commissioner) and societal stakeholders is assured; how conflicts of interest are prevented; how data integrity and general attention to integrity and ethics are guaranteed; the prevailing research culture and mode of interaction; and relevant dilemmas that have arisen and how the VTV team has dealt with these issues.
- **Relevance to society**, i.e., use of the VTV by policymakers, professionals, and societal groups, including the question whether the contents of the VTV are communicated efficiently and used as intended at the national as well as the local level. Indicators of societal relevance also include the involvement of policymakers and other stakeholders and professionals in the VTV production process, as well as the question whether signals from society are adequately picked up and addressed.
- **Viability and future proofing**, i.e., the future strategy, governance, and leadership of the VTV, the ability of the project teams to learn and improve over time, and activities to maintain the position in the field. Another key component for future proofing is quality assurance over time. Data, methodology, processes, considerations, uncertainties, and knowledge should be documented and shared so that the project could be reproduced by other people with the same capacities.

In addition to these main assessment criteria, four other criteria were briefly addressed in the context of research quality and independence: operational quality, open science, timeliness, and human resources.

## 2.3 Followed procedures

The Centre for Health and Society had the final responsibility for carrying out the audit and appointed an audit project team led by Dr Louise Dekker. This team organized the audit process and programme in close consultation with the SAB and the chair and secretary to the audit committee. Two members of the SAB (Professors Linda Steg and Jaap Seidell) were appointed as liaison officers with daily oversight of the audit.

### *Instructions*

The following documents were sent to the audit committee in December 2021 to provide instructions about the audit procedure:

- **Terms of Reference**, which specified the purpose and criteria of the assessment, the overall schedule of the assessment procedure, and the responsibilities of the audit committee,
- **Strategy Evaluation Protocol 2021-2027 (SEP)**, which was drawn up by the Universities of the Netherlands, Royal Netherlands Academy of Arts and Sciences (KNAW), and the Netherlands Organisation for Scientific Research (NWO). The primary aim of SEP assessments is to evaluate the research quality, societal relevance, and viability of a research unit considering its own aims and strategy, and to suggest improvements where necessary. The SEP is geared towards the evaluation of research conducted at Dutch universities, University Medical Centres, and NWO or KNAW institutes,
- **Guide for external evaluations at RIVM**, which is based on the SEP. RIVM has transformed the SEP into a guide for evaluations to accommodate the evaluation of the broader tasks of RIVM, i.e., its role as a trusted advisor for the government in addition to its role as a research institute.



### *Documents*

In April and May 2022, the committee received several documents to prepare for the audit:

- **self-assessment report**, which described the composition and purpose of the VTV organization, the relevant areas of expertise and the societal challenges, a SWOT analysis, the past and future goals, and factual evidence from recent years for the assessment criteria,
- **stakeholder assessment report**, which described the conclusions from structured interviews that the audit project team conducted with nine stakeholders of the VTV (prioritized based on their influence on and stake in the VTV),
- 15 publications related to the VTV that were produced during the period 2016-2021,
- reports of meetings of the external scientific advisory board of the VTV,
- documents regarding integrity procedures at RIVM,
- internal evaluation reports of the VTV-2018 and c-VTV-2020.

### *Meetings*

A series of online and face-to-face meetings were organized:

- **December 2021:** online preparatory meeting of the audit committee to get acquainted and discuss the audit procedure,
- **February 2022:** online preparatory meeting of chair and secretary of the audit committee with RIVM representatives Louise Dekker (leader of audit project team), Henk Hilderink (VTV project leader, expert in public health foresight, and member of audit project team), Els Slichter (VTV secretary), Birgitte Blatter (head of Department Public Health Explorations within the Centre for Health and Society), and Mariken Leurs (head of Centre for Health and Society) to discuss the expectations and points of attention regarding the audit, and to provide an overview of the aims and strategy of the VTV,
- **May 2022:** online preparatory meeting of the audit committee to discuss first impressions after reading the self-assessment report and stakeholder assessment report, and to make an inventory of questions to be asked during the site visit,
- **June 2022:** three-day site visit to RIVM to conduct a series of interviews with representatives of RIVM: current and former heads of the relevant RIVM domain, centre, and departments; the liaison officers of the SAB; current and former project leaders; former theme coordinators; and RIVM experts in trend scenario, data, and analysis. In addition, the site visit programme featured interviews with several external professionals: current and former members of the external scientific advisory board of the VTV; representatives of the policy advisory group and the Ministry of Health, representatives of the *Sociaal en Cultureel Planbureau* (SCP), *Planbureau voor de Leefomgeving* (PBL), *Vereniging van Nederlandse Gemeenten* (VNG), and external experts in modelling burden of disease. The majority of RIVM employees were interviewed in a face-to-face setting in groups of two to four interviewees. The external interviewees joined the site visit online. The site visit programme is listed in the Appendix in section 5.1.

## **2.4 Members of the audit committee**

The SAB of RIVM appointed as members of the audit committee:

- Professor Pim van Gool, **chair** (Amsterdam UMC),
- Dr Laurent Bontoux (European Commission Joint Research Centre),

- Dr Crétien van Campen (Sociaal en Cultureel Planbureau),
- Dr Stans van Egmond (Evita Zorg),
- Professor Jochen Mierau (University of Groningen).

Professor Dike van de Mheen (Tilburg University) was originally also appointed as a committee member but had to withdraw due to personal circumstances. Dr Linda van den Berg (Washoe Life Science Communications) served as the secretary to the audit committee. All committee members have collaborated with RIVM in the past in various roles, but never as an employee of RIVM. Professor van Gool, Dr van Campen, and Dr van Egmond have been involved indirectly in editions of the VTV. They have declared that this shall not lead to a biased assessment, as also approved by the SAB. The evaluation and recommendations in this report constitute the committee's consensus. 'Currently' refers to the time of the site visit; 'we' refers to the committee members.

## 2.5 Summary of aims and strategy of the VTV (based on self-assessment report)

The **overall aim** of the VTV is to better prepare policymakers and society for the future by providing insight into important current and potential future developments and societal challenges in public health and healthcare. A VTV explores the future quantitatively and qualitatively in a systematic way. It provides an interpretation of the opportunities and challenges associated with projected future developments. Data on disease incidence, prevalence, trends, provided healthcare, prevention, and healthcare expenditures constitute the basis of the VTV. The VTV uses quantitative and qualitative input from the knowledge base project, but also from other projects such as [www.staatvenz.nl](http://www.staatvenz.nl) and [www.volksgezondheidenzorg.nl](http://www.volksgezondheidenzorg.nl). (Note that these were incorporated as integral parts of the VTV project in earlier editions.) Modelling approaches are used for future projections of these indicators. The VTV-2018 and c-vtv-2020 consisted of multiple elements, such as quantitative trend scenarios, qualitative thematic foresight studies, policy options for action, and a synthesis of the most important findings. The results of the VTV are shared on a freely accessible website. In addition, other products are developed tailored to specific target groups, e.g., an official publication for the commissioner, a synthesis report, scientific articles, infographics, factsheets, brochures, (e-)magazines, videos, background reports, methodology reports and open access datasets.

In line with the above-mentioned overall aim and the RIVM roles described in section 2.1, the VTV aims to

- generate and apply knowledge through **scientific research** in a broad, transparent, and interdisciplinary way using a participatory approach,
- **provide** practical, reliable, and impartial **information** and inspiration for the benefit of governmental authorities and society at large,
- be **relevant to society** with a clear and integrated role in the policy cycle, which is unique in Europe.

The senior VTV staff and the management of the RIVM Centre for Health and Society have formulated the following **objectives** to achieve the overall aim:

- Regarding content and societal relevance:
  - encompass a broad concept of health and wider determinants of health,
  - integrate and synthesize state-of-the-art knowledge,

- provide insight in cognitive (knowledge) and normative (perspective) uncertainty,
- provide useful input for policymakers at different levels.
- Regarding methods and scientific quality:
  - use state-of-the-art foresight methodology,
  - include quantitative and qualitative analysis,
  - make innovative use of new data and methods,
  - be scientifically sound and transparent.
- Regarding cooperation and support in society:
  - a committed client,
  - involvement of three RIVM domains,
  - collaboration with universities and knowledge institutes,
  - participation of stakeholders from policy and practice.
- Regarding communication of the VTV results:
  - include easily accessible results,
  - include visualizations and videos supporting a clear message,
  - be aimed at multiple and different target groups,
  - be for Dutch and English-speaking audiences.

Three **strategic themes** were formulated retrospectively for the period 2016-2021:

1. The development of a public health foresight study with scientific and societal reputation and authority,
2. Important aspects of health for the future of public health
  - trend scenario,
  - vulnerable groups & health inequalities,
  - connections between health and the living environment,
  - future trends in healthcare (including technology) and health-care expenditure,
3. COVID-19 and public health after the pandemic.

### 3. Findings

#### 3.1 Research quality

##### *Scientific relevance, academic reputation, and position in the field*

One of the strategic themes for the evaluation period was the development of a VTV with scientific and societal reputation and authority. The committee observed that the VTV is regarded as an authoritative resource by many scientists and other users in the Netherlands. The 11 peer-reviewed papers published in international scientific journals in the period 2016-2021 and the regular presentations at international conferences and meetings by VTV team members can be interpreted as a sign of international scientific acknowledgment. When the first VTV was produced by RIVM in 1993, the work was highly original and ground-breaking at an international level in its synthesis of public health and epidemiological data and in its development of standardized health measures to be used to explore the health status of the Dutch population 25 years ahead. Other research groups and organizations have entered the field of foresight studies more recently. For instance, the Global Burden of Disease is an effort to measure epidemiological levels and trends worldwide. Although the focus of the Global Burden of Disease is different, this work is closely related to the VTV project and introduces some methodological innovations. Taken together, RIVM's VTV has lost some of its unique position as a frontrunner from a methodological perspective. Nevertheless, the VTV team continuously seeks to develop novel approaches to improve the synthesis of data to engage in foresight, resulting in a reputable product with original elements.

The VTV has made a substantial contribution to the Dutch scientific field of public health during the evaluation period. For instance, many PhD candidates use the VTV to generate hypotheses for their studies. In addition, members of the VTV team have received invitations for lectures at congresses and other meetings, both nationally and internationally. The VTV's contribution to and contacts in the field of foresight studies outside the domain of public health are less prominent. The committee encourages the VTV team to explore generic developments in these fields as well. We will elaborate on this recommendation and others in section 4.2.

##### *Transparency and reproducibility*

RIVM is actively working on the implementation of its open science policy, striving to make publications, reports, data sets, and software available to researchers within and outside the institute. We strongly encourage RIVM to continue this endeavour because it will increase the relevance of the VTV to science and society. It may also invite relevant input from academic researchers outside RIVM, with the possibility of ensuing collaborations.

Reproducibility is a core aspect of research quality. The committee experienced difficulties in finding the exact methodology underlying the various components of the VTV on the websites of the VTV-2018 and c-VTV-2020. We recommend investing in the transparency of the methodology and the overall VTV process, for instance by publishing more journal articles or exploring other methods to achieve this goal (see 4.2). In addition to improving the findability of research methods, inviting international peer review may also act as a quality control step.

### *Methodology*

The VTV explores the future quantitatively and qualitatively. The committee noticed that the culture in the VTV team was oriented towards quantitative research during the evaluation period. The quantitative work within the VTV project (e.g., trend scenarios and modelling burden of disease) has an excellent academic reputation and is scientifically sound. Nevertheless, we suggest seeking more collaboration with academic research groups to drive further development of the models and incorporation of novel techniques such as artificial intelligence.

Compared to the quantitative work, the qualitative work within the VTV-2018 and c-VTV-2020 was in its infancy, not optimally making use of the rigorous qualitative methods that are available. For instance, the stakeholder meetings that are part of the preparation of the thematic foresight studies are not transparently structured. The selection of topics for these foresight studies was based on scoping sessions with stakeholders. Next, the most relevant future developments were determined (along with potential consequences, solutions, and options for action) in an interactive process in which the client and social stakeholders were involved. These stakeholder sessions appeared to lack a systematic and structural approach. The VTV-2024 project team plans to focus more strongly on qualitative research. The committee encourages RIVM to strengthen this initiative and to invest in sophisticated qualitative methodology, preferably by building in-house expertise, or through longstanding strategic collaborations with academic partners, rather than outsourcing this important new methodological approach to commercial parties. In addition, we recommend that RIVM explores best practices in using qualitative methods in foresights studies, both scientific and applied.

### *Output*

Although academic output is not the primary goal of the VTV, 11 peer-reviewed scientific papers of excellent quality were published in international journals during the review period, 2016-2021. In addition, the VTV team has developed output for specific target groups, including an official publication for the commissioner, a synthesis report, infographics, factsheets, brochures, (e-) magazines, videos, background reports, methodology reports, and open access datasets. The key messages of the VTV were also shared through presentations at congresses and other meetings. The main output of the VTV project is the VTV website. The committee considers the current form of this website suboptimal to facilitate knowledge transfer to scientists and public health professionals other than policymakers at the Ministry of Health. It is difficult to localize information about specific topics and to trace the exact methodology that underlies the various components of the VTV on this website. We recommend rethinking the communication form of specifically this component of the VTV.

### *Quality assurance*

Scientific quality assurance of the VTV is organized as a systematic scientific check by the external scientific advisory board of the VTV, who review the focus and topics, methods, and results of the VTV. In addition, a formalized, in-depth internal peer review system is in place. The extensive involvement of external experts, scientists, and stakeholders should further safeguard scientific rigour. However, the committee noticed that many members of the VTV community are strongly connected to the VTV, e.g., through formal positions in previous years. This may hamper the opportunity to invite rigorous critical comments from the perspective of outsiders. As the VTV may

benefit from this form of critique from a scientific point of view, we recommend involving more critical experts in the VTV process, to ensure a more rigorous scientific quality assurance.

### 3.2 Independence

The VTV aims to provide practical, reliable, and impartial information and inspiration for the benefit of governmental authorities and society at large. This calls for scientific independence from the commissioner as well as stakeholders in policy, science, and society. RIVM strives to ensure its impartial position by independently determining the most effective research methods and by making research results publicly available in a transparent way. RIVM has an institute-wide procedure for reporting suspected violations of integrity. The committee did not receive information about incidents that were reported during the evaluation period. RIVM organizes trainings to understand the dilemmas and temptations involved in research integrity and the relationship with the commissioner (e.g., '*Goed opdrachtnemerschap*'). In general, the Department of Public Health Explorations appears to foster an open and safe research culture, facilitating a critical pursuit of science. For instance, scientists that the committee met appeared to feel free to challenge the ideas of their colleagues and supervisors. Taken together, the mechanisms to ensure research integrity and independence are in place. However, given RIVM's status as an agency of the Ministry of Health and the active involvement of many stakeholders, the practical implementation of these mechanisms will remain a continuous point of attention. The committee recommends engaging in sustainable long-term collaborations with academic research groups to strengthen the independent position of the VTV project and to benefit from 'fresh' outside views on science, methodology, and societal perspectives.

#### *Independence from the Ministry of Health*

The VTV project team continuously needs to monitor the delicate balance between maintaining an independent position and delivering policy-relevant results. RIVM is aware of this fine line and the VTV project members that we met during the site visit appear to experience this as a pressure. The committee heard several examples of dilemmas that arose during the evaluation period. For instance, publication of the trend scenario of the VTV-2018 was postponed from November 2016 to June 2017 at the request of the Ministry of Health considering the 2017 elections. Although the *exact* reason for this delay remained elusive to the committee, we acknowledge that timing in the policy cycle is important. Adjusting the timing of publication is acceptable if it is motivated by optimizing the uptake of the VTV results. To avoid reoccurrence of this dilemma in the future, the publication of the VTV-2024 has been synchronized with the cycle of elections. In addition, the VTV-2024 project team has developed a 'Plan B' to accelerate publication of the VTV in case of early elections. This new approach has been developed in collaboration with the policy advisory group.

Another example of a dilemma relates to the normative perspectives that were incorporated in the VTV-2014. The VTV team described four normative perspectives reflecting alternative views on what people consider a desirable future regarding public health and healthcare. This approach (which appeals to the committee from a scientific point of view) was not used in the VTV-2018 anymore because the Ministry of Health did not consider it policy-relevant. However, the approach was retained in a more implicit way in the VTV-2018 and the normative perspectives were re-introduced in the c-VTV-2020.

Despite these examples of some degree of interference by the Ministry of Health, the committee has the overall impression that RIVM sufficiently follows its own course in choosing the agenda and methodology of the VTV, assessing the data, weighing alternative explanations, and publishing results, also if these may deviate from the expectations or wishes of the Ministry of Health.

#### *Independence from other stakeholders*

Independence also implies not being guided by commercial, political, or scientific interests of individual VTV employees or stakeholders. RIVM aims to safeguard this aspect of independence in the design and execution of the VTV, for instance by involving a balanced representation of stakeholders. Nevertheless, the committee has the impression that this form of independence is not structurally embedded in the VTV process and that interests of participants are insufficiently transparent. For instance, the VTV stakeholder gatherings are visited by selected persons representing a wide range of organizations; these persons naturally have certain interests, ranging from commercial or political interests to individual scientific interests. If the selection of stakeholders is not properly organized, stakeholder meetings could introduce a risk of conflict of interests without this being explicitly known to RIVM or to future readers of the VTV. We suggest adopting more structured methods for incorporating various perspectives and guaranteeing transparency in case conflicts of interests may arise. To achieve this, participants of stakeholder meetings, interviewees, and other contributors may be asked to sign a statement to declare conflicts of interest.

### **3.3 Relevance to society**

The VTV aspires to provide information and inspiration for the benefit of governmental authorities (to develop health policy) and society at large. Although policymakers are the VTV's primary target audience, the VTV is highly appreciated by a broad range of other users and stakeholders, including public health and healthcare professionals, scientists, health insurers, municipal health services (GGDs), the general public, and specific groups of patients. It is widely considered as a valuable source of information that provides relevant scientific information. The committee rates the societal relevance of the VTV as very high.

#### *Relevance for and involvement of policymakers*

The role of the VTV in the policy-making process has been formalized with the establishment of the law on the RIVM in 1996. According to this law, periodic VTVs are used to select policy themes for the National Health Policy Memorandum of the Ministry of Health. This memorandum subsequently forms the basis for the local health memoranda of municipalities. This explicit role in evidence-informed policy support is unique in Europe. In addition, the VTV-2018 has been used to develop the National Prevention Agreement. The VTV team may consider increasing its impact on policymakers by seeking more interaction with directorates of the Ministry of Health other than Public Health, as well as other ministries. In addition, the VTV team may consider approaching the '*Vaste Tweede Kamer Commissie Volksgezondheid*' or scientific agencies of the political parties, as these institutions represent the organized citizen.

The VTV project leaders interact intensively with the commissioning client. To optimize policy relevance, a policy advisory group has been installed for the VTV-2018 to advise the VTV project

team. This group includes representatives of the Ministry of Health and other ministries such as Education, Culture and Science; Economic Affairs and Climate Policy; and Social Affairs and Employment. The committee acknowledges that the active involvement of policymakers is a prerequisite to ensure policy-relevance, and to prevent misunderstandings and inappropriate interference. We recommend considering the Ministry of Health explicitly and openly as a stakeholder in addition to its role as the commissioner of the VTV. Acknowledgment and precise delineation of these roles may contribute to the transparency of the VTV and as such increase the public trust in its results.

In addition, the committee sees room to increase the impact of the VTV on the local health memoranda. Although many challenges such as population aging and an increase in non-communicable diseases play out at the national level, many regions are faced with specific challenges that are more unique in the Dutch context (but they may have these challenges in common with other European regions). Consider for instance population decline, rapid aging, and mining-induced earthquakes. There formerly used to be regional VTVs. Now, some regions engage in them at their own expenses, but the regions with the largest challenges (who probably could benefit most from a regional VTV) do not have the means and expertise to engage in one. Hence, the current set-up may well lead to a widening of the regional health gap. Therefore, we recommend increasing the impact of the VTV on the local health memoranda, for instance by providing local projections and foresights.

#### *Relevance for and involvement of stakeholders and professionals*

A variety of societal groups and professionals make ample use of the VTV, including for instance the *Vereniging Nederlandse Gemeenten* and the *Hersenstichting*. The VTV is also frequently used in higher education on health and epidemiology, for example Health Sciences at Maastricht University, Health and Wellbeing at Tilburg University, and the Erasmus School of Health Policy & Management at Erasmus University Rotterdam. External stakeholders are consulted to select the themes and indicators for the VTV. In addition, stakeholders are consulted as part of thematic foresight studies. Over the years, substantial experience has been built regarding stakeholder participation in the VTV. The committee learnt that the Stakeholder Participation Guidance of the Netherlands Environmental Assessment Agency serves as a template for the stakeholder participation in the VTV. However, there is no formal description of the exact stakeholder selection and involvement. As mentioned in section 3.2, the committee recommends adopting a more systematic (structured) and science-based approach in stakeholder consultation by applying methodologies from the field of qualitative research. This will also facilitate picking up and addressing signals from society in a more systematic way. The committee learnt that the VTV-2024 project team is planning to consult a panel of citizens. We applaud this development. The committee would like to emphasize that it is important to build in-house expertise rather than for instance outsourcing this activity to a commercial agency.

#### *Communication*

Independent evidence-informed policy support depends on the quality and independence of the VTV, and on proper information provision. RIVM is keenly aware of the importance of effective communication. A variety of products are developed to communicate the VTV results to various target groups. As mentioned in section 3.1, the VTV website should be improved because it does not optimally facilitate information provision, preventing the VTV from achieving maximal scientific and societal impact. We recommend rethinking how to efficiently communicate with various target



groups, i.e., rethinking how to formulate messages targeted at specific groups of users of the VTV, such as members of parliament, employees of municipal health services, municipal officials, and scientists.

### **3.4 Viability and future proofing**

#### *Future strategy*

The aims and strategy of the VTV in the period 2016-2021 are summarized in section 2.5. A strategic self-evaluation takes place at the end of each VTV development cycle. In the self-assessment report, the audit project team reflected on strategic questions linked to the results of their SWOT analysis. The VTV organization adjusts its course when needed, at least to a certain extent. Examples are the stronger focus on qualitative research and the instalment of a citizen panel in the VTV-2024. However, a clear overall scientific strategy for the future appears to be lacking and this renders the viability of the project vulnerable. The committee recommends assessing strategically and explicitly how the VTV should develop scientifically in the next ten years. This will also help the organization to keep its focus on the strengths.

#### *Organization and governance*

The committee learnt that a reorganization took place in 2014. Formerly, the VTV was made by a dedicated centre. After the reorganization, it became a project embedded in the Centre for Health and Society. This reorganization has clearly promoted interactions with experts at other departments and centres within RIVM, which is positive. However, the project-based organization makes it more difficult to use the quiet periods in between the publication of VTVs for reflection (e.g., brainstorming on the concept of foresight studies, a journal club). The committee considers such activities an essential component of scientific endeavours and foresight, and therefore recommends seeking opportunities for these activities within the current project-based organization. Otherwise, the scientific character of the VTV may become vulnerable.

The VTV is developed by a multidisciplinary group of highly enthusiastic, devoted, competent and conscientious employees. The VTV project members are mainly white persons with a Dutch ancestry. Hardly any members with a second or third generation migration background are currently involved. Increasing the diversity of the team to better reflect the composition of Dutch society at large is advisable. The project teams of the VTV-2018 and c-VTV-2020 were led by two project leaders with responsibility for the daily process. The same holds for the VTV-2024. The committee thinks that this dual project leadership may be particularly successful if one project leader specializes in the overall process and the other takes up a role specifically as a scientific guarantor. Both project leaders need a substantial level of epidemiological, demographical, foresight, and public health knowledge. In general, the VTV project benefits from a proper balance between managers and content specialists in the project team, so we recommend monitoring this balance, as well as the continuity over several VTV cycles to ensure efficacy of the process.

#### *Collaboration*

The future strategy should also reflect on the desired position the VTV in the field of public health and foresight in the Netherlands. The VTV project has always involved public health scientists from outside RIVM. Nevertheless, based on the interviews with VTV employees and the stakeholder

assessment, the committee concludes that more effort should be put into a renewal of interactions and collaborations with experts at other departments, centres, and academic research groups. The committee also heard examples of collaboration with organizations such as SCP, Nivel, and Trimbos. We recommend continuing along this path of collaboration and engaging in sustainable long-term alliances with academic research groups because this will promote research quality and independence of the VTV, rendering the viability of the project less vulnerable.

#### *Resources*

With an average capacity of 4.32 fte per year and an average annual budget of M€0.78, the resources of the VTV project are modest, with significant variations over time. It may be difficult to thoroughly improve the VTV process with the available fluctuating budget. It may be advisable to allocate seed money to further develop the quantitative models and to seriously invest in qualitative research. Allocation of additional budget should be driven by a strategic vision on the VTV project, as well as its relationship with other RIVM initiatives, departments, and centres.

#### *Quality assurance*

A key component of future proofing is quality assurance over time. Data, methodology, processes, considerations, uncertainties, and knowledge should be documented and shared so that the project can be reproduced by other people with the same capacities. As we discussed in previous sections, this is a weak point of the VTV project and RIVM is aware of this weakness. One potential solution may be to publish more journal articles about the VTV methodology, process, and results, as well as alternative strategies that will be discussed in 4.2.

## 4. Recommendations

### 4.1 General conclusions and answers to key questions

The audit committee appreciated the well-organized process of the audit. The discussions with interviewees took place in an open atmosphere and they were transparent and constructive. This enabled the committee to formulate the following general conclusions (4.1), resulting in several specific recommendations (4.2).

*Main question 1: What is the scientific quality of RIVM's work concerning the VTV?*

As substantiated in 3.1, the committee rates the scientific quality of the VTV-2018 and c-VTV-2020 as variable, with some components of outstanding quality and others unsatisfactory. The VTV is regarded as an authoritative resource by many scientists and other users in the Netherlands and abroad regarding the integration of health data, but it has lost some of its unique position as a frontrunner in developing health measures and in foresight studies. To improve the research quality in the future, we recommend to

- interact with scientists in the broader, general field of foresight studies to benefit optimally from developments in other fields,
- invest in transparency and findability of the methodology and process details,
- establish sustainable long-term collaborations with academic research groups,
- expand and improve the qualitative research with a sound methodological basis within the VTV,
- rethink the communication form of the VTV (especially the website),
- invite and enable more critical opinions in the various advisory boards in a structured, transparent, and traceable way,
- formulate an explicit long-term scientific strategy and vision on the societal role for both the near and more distant future.

We will elaborate on these recommendations in section 4.2.

*Main question 2: To what extent are the activities concerning the VTV carried out independently?*

The committee rates the independence of the VTV from the commissioner as sufficient in terms of choosing the agenda and methodology of the VTV, assessing the data, and weighing alternative explanations, and publishing results that may deviate from the expectations or wishes of the Ministry of Health. Independence also implies not being guided by commercial, political, or scientific interests of individual VTV team members, stakeholders, and all other participants involved in any form (members of focus groups, interviewees, etcetera). At present, this form of independence is not structurally embedded in the VTV process. We suggest adopting more structured methods for stakeholder consultation and a more standardized process that is transparent to make possible conflicts of interest of participants transparent, while preserving inclusivity.

*Sub question 3: In what way is VTV-knowledge partly generated from practice and stakeholder consultation?*

If performed correctly, a foresight study exploits collective intelligence, resulting in practical, reliable, and impartial information to support governmental authorities at all levels. This should result in the

development and implementation of an appropriate public health policy to benefit society at large. RIVM is keenly aware that involving practice and stakeholders is the key to making a societally relevant product. To this end, RIVM is involving a broad range of external experts, scientists, and other stakeholders in the VTV process. The committee acknowledges the effort that RIVM makes to engage various groups. However, we recommend adopting a more structured approach in the practice and stakeholder participation process. In addition, we recommend investing in in-house expertise in exploring signals from society (e.g., through a citizen panel). This will allow RIVM to make optimal use of collective intelligence, resulting in a product with maximal societal impact.

*Sub question 4: Does the VTV contribute to informed public health decision-making by the national government?*

The VTV acts as a base for the National Health Policy Memorandum, so its role in evidence-informed policymaking is evident. In addition, the VTV-2018 has been used to develop the National Prevention Agreement. Despite these clear examples of the contribution of the VTV to public health decision-making by the national government, the committee has the impression that the Ministry of Health experiences difficulties in optimally exploiting the VTV. The Ministry appears to focus on the quantitative components of the VTV, whereas sense making constitutes the most important added value of the VTV. Hence, the contribution of the VTV to informed public health decision-making by the national government may be improved. The VTV team may consider increasing its impact on policymakers by seeking more interaction with directorates of the Ministry of Health other than exclusively Public Health, as well as other ministries. In addition, the VTV team may consider approaching the '*Vaste Tweede Kamer Commissie Volksgezondheid*' or scientific agencies of the political parties to facilitate a wider influence of its product(s).

## **4.2 Strategic recommendations for the near future**

### **1. Develop a future scientific strategy regarding foresight studies in public health.**

Any structural change in the VTV organization should be guided by a strong scientific strategy, considering the societal impact of the VTV. The committee recommends assessing strategically how the VTV should develop scientifically in the next ten years and what societal needs it will serve. This may then drive decisions regarding the organization, governance, and funding of the project and communication with stakeholders. The committee noticed that RIVM is more governable and less agenda-setting compared to the '*planbureaus*'. Although this is a logical result of the different roles of the *planbureaus*, we suggest inspecting the strategies of the *planbureaus* for inspiration. The VTV team may consider publishing unsolicited interim explorations of specific topics inspired by developments in science and society. It may also be advisable to allocate seed money to further develop the quantitative models and to seriously invest in qualitative research, but allocation of additional budget should be driven by a strategic vision.

### **2. Become more active in the broader field of foresight studies.**

The VTV has made a substantial contribution to the scientific field of public health during the evaluation period. Its contribution to the scientific field of foresight studies from a generic point of view (outside the specific field of health) is less prominent. Over the years, foresight studies have matured as a discipline, taking place in domains such as public health, climate, environmental

sciences, and economic sciences. We encourage the VTV core team to interact with scientists in these other domains of foresight studies and to obtain a position in this field as well. This may be achieved for instance by visiting foresight conferences and engaging with the Association of Professional Futurists (<https://www.apf.org>) or other professional foresight organizations. It will be inspiring to learn which techniques are used in other disciplines of foresight studies and the overall VTV process can benefit from rigorous methodological discussions with peers.

### **3. Invest in transparency and findability of the VTV methodology and process details.**

The process of developing a VTV involves integrating up-to-date scientific knowledge (both quantitative and qualitative) about public health and healthcare. We recommend investing in the transparency of the methodology and the overall VTV process, for instance by publishing more journal articles (peer reviewed, open access manuscripts). If this would prove difficult to realize, another option may be to publish (e.g., on the RIVM website) the methodology used in VTV in the format of an easily accessible conventional 'materials and methods' section as if it would concern a section of a traditional scientific manuscript. Publishing a VTV periodic with an associated peer review system may be another option. In addition to improving the findability of research methods, international peer review may also act as a quality control step, especially if the results of these peer reviews are made publicly available. Improving the transparency of the overall VTV process (including the stakeholder consultation) will benefit the scientific quality, independence, societal impact, and viability of the VTV.

### **4. Engage in sustainable long-term collaborations with academic research groups.**

We recommend engaging in sustainable long-term collaborations with academic research groups because this will promote research quality and independence of the VTV and strengthen the viability of the project. Intensifying the collaboration with academic research groups may provide a solution to the challenge of finding manpower and resources to further develop the models and incorporate novel techniques such as artificial intelligence. In addition, social scientists at academic institutes may assist in improving the methodology of the qualitative research embedded in the VTV process (including stakeholder and citizen consultation). Academic collaborations may also help to recruit MSc students and PhD candidates to the VTV project, bringing fresh ideas and new connections. A first potential operationalization is recruiting (a group of) students to study the development of the views on prevention from the first VTV until now.

### **5. Expand and improve the methodological rigour of qualitative research within the VTV, including the stakeholder engagement process.**

The committee encourages the VTV team to seriously invest in methodologically sound qualitative research, preferably by building in-house expertise. An alternative may be to establish collaborations with academic research groups in the field of social sciences to strengthen the qualitative research within the VTV project. For instance, we suggest adopting more structured methods for stakeholder and citizen engagement to guarantee a balanced representation of different viewpoints. It may also be useful to consult a handbook on co-creation for policy that was published by the European Commission: <https://publications.jrc.ec.europa.eu/repository/handle/JRC128771> and this paper on assessing the quality of qualitative research:

<https://onlinelibrary.wiley.com/doi/full/10.1111/tct.13242>. In addition, participants of stakeholder meetings may be asked to sign a statement to declare conflicts of interest. Note that we recommend considering the Ministry of Health explicitly and openly as a stakeholder in addition to its role as the commissioner of the VTV.

#### **6. Rethink the communication about the VTV messages.**

The committee considers the current form of the VTV website suboptimal to facilitate in depth information provision to scientists and public health professionals other than policymakers at the Ministry of Health. It is difficult to localize information about specific topics and to trace the exact methodology that underlies the various components of the VTV on this website. We recommend rethinking how to efficiently communicate with various target groups. The VTV team may also consider increasing its impact on policymakers by seeking more interaction with directorates of the Ministry of Health other than Public Health, as well as other ministries. In addition, the VTV team may consider approaching the '*Vaste Tweede Kamer Commissie Volksgezondheid*' or scientific agencies of the political parties.

#### **7. Include more critical opinions in the various advisory boards and in the VTV process in a structured, transparent, and traceable way.**

The committee noticed that many members of the VTV community are strongly connected to the VTV, e.g., through formal positions in previous years. The scientific quality of future VTVs may benefit from rigorous critique, also from outsiders. We recommend inviting these forms of critique into the VTV process, to ensure a more rigorous scientific quality assurance. This can be organized by inviting *ad hoc*, outside reviewers originating from the Netherlands or abroad. Making the results of this review process openly available will foster the scientific character of the VTV.

#### **8. Increase the regional impact of the VTV.**

In addition to its legal role to inform the National Health Policy Memorandum, the VTV should inform local health memoranda of municipalities through the national Memorandum. Comparing public health data between regions will allow municipalities to obtain benchmarking information. The committee sees room to increase the impact of the VTV on the local health memoranda, for instance by providing local projections and foresights. It would be good to provide resources for RIVM as well as the regions to engage in regional VTVs. A selection of results of the regional VTVs could then be channelled back into the national VTV to provide a balanced picture of the national as well as the regional foresights.

## 5. Compulsory appendices

### 5.1 Site visit programme

#### Day 1: 20-6-2022

Start	End	Activity	Attendants*	Physical/Online/Hybrid
09.30	10.00	Arrival at RIVM		
10.00	10.30	<b>Private preparatory meeting</b>	AC	
10.30	11.00	Opening Sicco Louw, Deputy Director Public Health and Health Services <ul style="list-style-type: none"> <li>Welcome by Hans Brug (video)</li> <li>Introduction RIVM – Sicco Louw</li> <li>Introduction liaison officers – Sicco Louw</li> <li>Introduction G&amp;M/scope of the audit - Mariken Leurs</li> </ul>	AC, LO (SAB), BoD, PT, Louw, Leurs, Blatter	Physical
11.00	11.45	Interview with Liaison Officers SAB Jaap Seidell and Linda Steg	AC, Seidell, Steg	Physical
11.45	12.30	Interview with Mariken Leurs (Head of Centre for Health and Society), Birgitte Blatter (Head of Department of Public Health Explorations), and Monique Verschuren (Head of Department Chronic Diseases Determinants)	AC, Leurs, Blatter, Verschuren	Physical
12.30	13.30	<b>Private lunch + reflection on morning sessions</b>	AC	
13.30	14.30	Interview with members of the external scientific advisory board of the VTV Karien Stronks, Dirk Ruwaard, André Knottnerus	AC, Ruwaard, Stronks, Knottnerus	Online
14.30	15.15	Interview with Annemiek van Bolhuis (former Directeur Public health and Health services), Mariska van Blankers (former Head of Public Health Explorations and former ad interim Head of the Centre for Health and Society) and Hans van Oers (former Head of Public Health Explorations)	AC, van Bolhuis, van Blankers, van Oers	Hybrid: Van Bolhuis online; Van Oers and Van Blankers Physical
15.15	15.45	<b>Private tea break</b>	AC	
15.45	16.45	Interview with project leaders VTV Henk Hilderink (VTV-2018, c-VTV-2020), Erwin Eisinger (c-VTV-2020) and Johan Polder (VTV-2010 and member VTV klankbordgroep RIVM)	AC, Hilderink, Eisinger, Polder	Physical
16.45	17.45	Interview with VWS/Beleidsadviesgroep Ciska Scheidel and Rudo van den Brink	AC, Scheidel, v.d. Brink	Online
17.45	18.30	<b>Private reflection on the day with drinks</b>	AC	
18.30		Transportation to restaurant	AC	
19:00	21.00	Dinner	AC, PT, Leurs, Blatter, LO (SAB)	

\* AC=Audit Committee, BoD=Board of Directors RIVM, LO=Liaison Officers Scientific Advisory Board, HRU=Heads research unit, PL=Project leader audit, PT=Project Team audit RIVM

## Day 2: 21-6-2022

Start	End	Activity	Attendants	Physical/Online/Hybrid
08.30		Transportation to RIVM		
09.00	09.15	Walk to building G22 & coffee		
09.15	10.45	Interview with theme coordinators – part 1 <ul style="list-style-type: none"> <li>Leefomgeving: Brigit Staatsen (c-VTV-2020)</li> <li>COVID-19: Pieter de Boer (c-VTV-2020)</li> <li>Zorg: Geertjan Kommer (VTV-18, c-VTV-2020)</li> </ul>	AC, Staatsen, de Boer, Kommer	Physical
10.45	11:00	<b>Private coffee and tea break</b>	AC	
11.00	12:15	Interview with Theme Coordinators – part 2 <ul style="list-style-type: none"> <li>Technologie: Mirjam Busch (VTV-2018)</li> <li>Uitdagingen/Jongeren: Frank den Hartog (c-VTV-2020)</li> </ul>	AC, Busch, den Hertog	Physical
12.15	12.30	<b>Walk to T0.19</b>	AC	
12.30	13.30	<b>Private lunch + reflection on morning sessions</b>	AC	
13.30	14.15	Interview with external experts Sjoerd Kooiker (SCP) and Guus de Hollander (PBL)	AC, Kooiker, de Hollander	Physical
14.30	15.00	External experts 'ziektelast berekeningen': interview with Juanita Haagsma (EUR) and Brecht Devleeschauwer (Belgium)	AC, Haagsma, Devleeschauwer	Online
15.00	15.30	<b>Private tea break</b>	AC	
15.30	16.15	Interview with current project leaders VTV-2024 Lea den Broeder, Evelyn Heugens (till May 31, 2022), Chrisje Couwenbergh (since April 1, 2022)	AC, den Broeder, Heugens, Couwenbergh	Physical
16.15	17:15	<b>Private reflection on the day with drinks</b>	AC	
17:15		Return to hotel	AC	
19.00	21.00	<b>Private dinner at hotel</b>	AC	



### Day 3: 22-6-2022

Start	End	Activity	Attendants	Physical/Online/Hybrid
08.30		Transportation to RIVM		
09.00	10.30	Interview with VTV employees on Trendsscenario/Data/Analysis Henk Hilderink, Petra Eijsink, Marjanne Plasmans and Ellen Uiters	AC, Hilderink, Eijsink, Plasmans, Uiters	Hybrid: Uiters online, the others physical
<b>10.30</b>	<b>11.00</b>	<b>Private coffee break</b>		
11.00	11.30	Interview with Hidde Boonstra (VNG)	AC, Boonstra	Online
<b>11.30</b>	<b>14.15</b>	<b>Final private meeting with lunch</b>		
14.15	14.45	Closing session <ul style="list-style-type: none"> <li>Presentation of preliminary findings by Professor P. van Gool</li> <li>Closing by Sicco Louw</li> </ul>	AC, PT, BoD, LO (SAB), all those that contributed to the visitation programme	Hybrid
<b>14.45</b>	<b>15.30</b>	<b>Drinks and closure</b>	AC, PT, BoD, LO (SAB), all those that contributed to the visitation programme	Physical

## 5.2 Quantitative data on the VTV composition and funding

**Table 1:** VTV Staff (from self-assessment report)<sup>1</sup>

VTV	2016	2017	2018	2019	2020	2021
<b>Expert (fte)</b>	2.01	1.67	1.73	0.99	2.69	0.75
<b>High (fte)</b>	2.65	3.48	1.46	0.90	3.28	1.49
<b>Middle (fte)</b>	0.31	0.61	0.51	0.21	1.22	0.22
<b>Low (fte)</b>	0.02	0.18	0.31	0.11	0.37	0.07
<b>PhD students</b>	0	0	0	0	0	0
<b>Post-docs</b>	0	0	0	0	0	0
<b>Visiting scientists</b>	0	0	0	0	0	0
<b>Total staff (fte)</b>	<b>5.01</b>	<b>5.95</b>	<b>4.03</b>	<b>2.22</b>	<b>7.56</b>	<b>1.2</b>

<sup>1</sup> According to the self-assessment report, the average capacity allocated to the VTV project was 4.32 fte per year in the period 2016-2021. These employees include experts, senior researchers and junior researchers, management staff and one project supporter. There were no PhD students, post-docs or visiting scientists who contributed to the VTV in 2016-2021.

**Table 2:** Research output VTV field of expertise (from self-assessment report)

	2016	2017	2018	2019	2020	2021
Refereed articles	2	0	2	1	3	0
Professional publications	0	0	2	2	1	0
Book chapters	0	0	1	1	1	0
Publications aimed at the general public	0	0	2	1	1	0
<b>Total publications</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>6</b>	<b>0</b>

**Table 3:** Funding details

<b>Total budget (M€)</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Centre Health & Society	9.9	9.6	10.2	11.5	16.8	19.2
Dpt Public Health explorations	3.1	2.6	2.5	2.9	3.0	2.1
VTV project	0.89	0.97	0.80	0.50	1.3	0.28