SWISS NATIONAL COVID-19 SCIENCE TASK FORCE

Final report of the Swiss National COVID-19 Science Task Force (ncs-tf)

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Part I – Summary report

During the COVID-19 pandemic, the Swiss National COVID-19 Science Task Force (hereinafter referred to as the ncs-tf) advised policymakers and informed the public about the latest scientific findings over a period of 24 months. Over the course of the pandemic, there was close and constructive cooperation between the various committees. This document sets out the origin, role, structure and work of the scientific advisory committee ncs-tf. The aim of this document is to provide both an overview of the work of the ncs-tf and fresh impetus for the future development of the dialogue between scientists, politicians and administrators.

I.1 Summary of the origin, role, structure and work of the ncs-tf

Scientists inside and outside the ncs-tf were working flat out at all times on researching SARS-CoV-2. They contributed to a rapid and efficient national and international exchange of scientific results, on the one hand through ad hoc exchanges in online sessions, on the other hand via social media and preprint servers. The ncs-tf experts worked on a number of pandemic-related topics, analysed and classified the rapidly developing evidence and carried out risk-benefit assessments. These topics included, for example, epidemiological developments, the clinical picture of COVID-19, therapeutic treatment approaches, vaccine impact, infection prevention and control (including masks and aerosols), the characteristics and effects of new variants of concern, the effects of the pandemic on mental health, and economic, social and ethical issues related to the impact of the pandemic and the response to the pandemic.

Key to the work of the ncs-tf was to identify strategies for managing the pandemic, including their advantages and disadvantages, and to evaluate measures. The first aspect, for example, – once the first wave subsided in the spring of 2020 – was to assess the risks to health, the economy and society of a high level of virus circulation in order to demonstrate the benefits of containing the virus until everyone had the opportunity to get vaccinated. The second aspect included, for example, the evaluation of possible vaccines and treatment options, the presentation of the benefits of masks and of possible protection plans in schools. This document does not focus on a retrospective evaluation of the effectiveness of various strategies and measures. Ideally, such assessments should be carried out by experts who were not involved in advising decision-makers or developing strategies and are therefore independent.

Thanks to its interdisciplinary focus, the ncs-tf was able to contribute through its advisory activities to ensuring that Swiss decision-makers had up-to-date and relevant scientific findings at their disposal, enabling them to respond to the challenges posed by the pandemic and make evidence-based decisions. Compared to similar advisory groups in other countries, a wide range of expertise was represented on the Swiss Task Force. For example, due consideration was given to the fact that the COVID-19 pandemic is not only a serious health crisis, but also affects all aspects of life. This means that, in addition to areas directly related to the virus (such as medicine, immunology, virology, epidemiology and nursing sciences),

a wide range of scientific disciplines were relevant to supporting policy decisions (such as economics, ethics, law, sociology and education sciences). This broad interdisciplinary approach was aimed for and implemented from the outset. The lack of expertise in political science and history was partially compensated by working with experts outside the group.

Cooperation and a regular exchange of ideas between all disciplines within the ncs-tf made it easier to reach a consensus and to communicate a consolidated scientific message to the outside world. Even though each member was able to express themselves freely, the majority of members were always intent on coordinating communication within the ncs-tf. In this way, the current state of scientific knowledge reached the public quickly, transparently and straightforwardly. This is important for generating trust in science and for communicating public health messages clearly. All key documents and assessments of the ncs-tf have been published. These publications took place – as agreed with the mandators – only after internal circulation and, if relevant, after communication of the relevant political decisions. As a result, documents containing important scientific information were sometimes only published with a delay.

At the beginning of the pandemic, there were no established processes for putting together an interdisciplinary scientific advisory group for acute crises. This raised key questions regarding the legitimacy, composition and operational procedures of the ncs-tf.[1] In the case of the ncs-tf, four Swiss academic institutions – the ETH Board, the Swiss National Science Foundation (SNSF), swissuniversities and the Swiss Academies of Arts and Sciences – played a decisive role in the formation of the group, particularly also in the nomination and selection procedures.

In addition to the regular obligations at higher education institutions, hospitals and research institutions, ncs-tf's work required a high degree of voluntary work, which could only be accomplished with a sufficient number of dedicated contributors. Some experts were able to temporarily gain exemption from some of their regular duties. General support in the form of a partial exemption from regular duties would enable the members of a scientific advisory group to focus even more on advisory activities. In general, the experts were assisted by members of their working groups and other colleagues who were not formally members of the task force (more on this below). Support from experts in the fields of data analysis, coordination, graphics and communication was of key importance for the functioning of ncs-tf.

A clear understanding of roles is essential for a scientific advisory committee in a crisis situation. The ncs-tf has increasingly sharpened its understanding of its role and endeavoured to communicate it clearly to the public, the media, politicians and the mandator. A key element of the developed understanding of roles was the clear distinction between the political decision-making process on the one hand and the presentation of scientific findings during the advisory process and for the attention of the public on the other: scientists provide advice and policymakers make decisions. In doing so, it should be ensured that scientific advisors, as scientists, can speak freely about their subject area at any time without undermining important public health messages and without expressing their own political views. It was sometimes difficult to present a scientific evaluation of measures in a precise and subtle way without expressing one's own political opinion, especially when the public expected a clear position. Coordinated communication

on the part of the ncs-tf provided support on these points. The aim was also to avoid double roles within the ncs-tf and in higher education policy, in order to prevent conflicts of interest.

Equally key to the work of the scientific advisory group was an appropriate understanding of the roles of the other stakeholders. Here it became clear that for a scientific advisory group, it has to be clarified what scientific expertise should be provided by the advisory group to the ncs-tf, how this should be done and what expertise should be covered by a competent authority or relevant commissions. It was also necessary to clarify which data the monitoring group needs to access in order to fulfil the advisory mandate. The ultimately established understanding of the roles made it possible to work together constructively without unnecessary conflicts.

I.2 Recommendations for strengthening the future dialogue between scientists, politicians and administrators

In order to ensure good relations, trust and legitimacy, as well as the collection and exchange of data and information, from the very first day of a crisis, the ncs-tf believes that a national framework for cooperation between scientists and politicians is helpful. This should already be established during crisis-free periods. Various models are conceivable in this respect. One possibility is that the Federal Council will in future designate the academic institutions in the Swiss education, research and innovation system (ERI Area) – the Academies of Sciences, the ETH Board, the SNSF, swissuniversities, the Swiss Science Council and Innosuisse ("policy for science" actors) – as supporters of a "science for policy" interface on the part of science. Through this interface, the necessary structures would already be established in the event of a subsequent crisis, making it possible to immediately set up a corresponding scientific advisory group with a clear understanding of the roles and to give this scientific advisory group direct access to the essential data. At the time of writing this report, the academic institutions of the ERI Area and the Federal Chancellery are discussing what such cooperation might look like.

Providing scientific expertise to all federal departments, rather than to individual authorities or departments, would simplify the transparent presentation of all aspects to the relevant decision-makers.[2] The mandate given to the ncs-tf by the General Secretariat of the Federal Department of Home Affairs (GS-FDHA) and initially also the State Secretariat for Education, Research and Innovation (SERI), which is part of the Federal Department of Economic Affairs, Education and Research (EAER), enabled direct dialogue with parts of the Federal Council. Through the Steering Committee, the ncs-tf was in dialogue with all seven General Secretariats of the federal departments. Furthermore, the mandators welcomed the informal dialogue of the ncs-tf with other departments. Direct mandated advice to all federal departments (instead of via the GS-FDHA with effect from August 2020 in the context of the ncs-tf) could increase the added value of scientific advice in future crises. For example, the General Secretariat of the Federal Department of Economic Affairs, Education and Research (GS-EAER) or the General

Secretariat of the Federal Department of Finance (GS-FDF) would then be informed about the assessment of the economists on the advisory board of the financial and economic effects of the crisis, rather than being informed about this by another department. In other countries, providing direct scientific advice to the government is envisaged[3,4] and establishing direct dialogue with the government, rather than primarily through the administration, is considered necessary[2].

When decision-makers explain how scientific findings were taken into account and which other aspects were referred to when communicating decisions, **this helps in two ways:** on the one hand, in order to make decisions comprehensible; on the other hand, it helps the public to understand the role of science in political decision-making.

I.3 Aspects for dealing with SARS-CoV-2 in the next 12 months

The most important aspects for the next 12 months from the point of view of the ncs-tf are set out in a document published in February 2022[5]. Continuous monitoring of infection rates, circulating variants and immunity in the population is key. Monitoring is crucial in order to be able to react quickly with vaccinations, measures and precautions in hospitals in the event of new variants or decreasing immunity. Expanding and automating data collection and consolidating data sets (including between the cantons and the federal government) would help to ensure an evidence-based decision-making basis at all times in the coming phases of the pandemic. Monitoring and gaining a better understanding of the long-term consequences of COVID-19 and thus of the post-COVID-19 infection "Long COVID" is also key. Ideally, this will take place within a Switzerland-wide cohort. The number of mental illnesses has increased during the pandemic; it is crucial to ensure adequate treatment for those affected. A key insight from the pandemic is that air quality, wearing masks and social distancing are effective measures to reduce the circulation of respiratory viruses (including influenza, for example). It is valuable to make use of these measures, especially during the winter months, even after the COVID-19 pandemic.

In addition to these epidemiological, medical, immunological and virological aspects, the pandemic has raised a number of social, ethical, and economic issues. For example, people with lower socio-economic status are more affected by the consequences of the pandemic than people with high socio-economic status. These differences need to be understood in detail, in order to alleviate inequalities resulting from the pandemic. In future, scientific questions in these areas will also be investigated as part of the national research programme "COVID-19 in Society".[6]

The pandemic is not yet over, but the acute phase of the crisis, which focused on developing and presenting scientific findings, has ended for the time being. Decision-makers and the general public have an understanding of how SARS-CoV-2 is transmitted, which measures are slowing the spread of the virus, and how vaccines can be used to protect oneself. In this new phase, unresolved issues and challenges are shifting more and more from science to politics and individual responsibility of the population.

Science remains active even after the dissolution of the ncs-tf. If questions arise that require a scientific contribution, the researchers are prepared to provide analyses and assessments and to discuss them. The ncs-tf hopes that its contribution to pandemic management, as summarised in this document, will also provide important impetus for a well-functioning interface between science and politics for future crises.

Part II – Detailed explanations on the origin, role, structure and work of the ncs-tf

II.1 Timeline of the most important developments

The aim of this section is to provide an overview of the timeline of epidemiological and political developments and of the evolution of the ncs-tf.

II.1.1 Phase 0 (January 2020-30 March 2020)

II.1.1.1 Epidemiological and political situation

From the end of February 2020 onwards, Switzerland was affected by an epidemic wave of SARS-CoV-2.
Following the first known outbreak of SARS-CoV-2 in Wuhan in November 2019 and the increasing spread of this virus, the World Health Organization (WHO) declared a public health emergency on 30 January 2020. From January 2020 onwards, scientific and medical experts in Switzerland also pointed out the risk posed by this infectious disease and presented initial analyses of the spread of SARS-CoV-2.[7] After the first confirmed case in Ticino on 25 February 2020, the first epidemic wave peaked in the second half of March 2020, with just over 1,000 confirmed cases per day (moving 7-day average) and a positive rate of around 25%, with around 170 hospitalisations per day (moving 7-day average) at the end of March, up to 55 COVID-19 deaths per day (moving 7-day average) and 450 patients in intensive care. Of the approximately 13,000 total deaths due to COVID-19 in Switzerland by the end of March 2022, just under 4% were reported by the end of March 2020.[8] During the first wave, over the course of five weeks, there was excess mortality across Switzerland in the age group over 65.[9]

On 16 March 2020, Switzerland entered the "extraordinary situation"[10] pursuant to the Epidemics Act. At the same time, the Federal Council introduced a series of measures to reduce contact within the population and thus the transmission of SARS-CoV-2. These measures were the most severe restrictions in Switzerland during the COVID-19 pandemic.[11]

II.1.1.2 Developments relating to the ncs-tf

On 18 March 2020, M. Hengartner (President of the ETH Board) founded the "ETH Domain COVID-19 Task Force". The aim is to bundle expertise and resources in the ETH Domain and make them available to the federal government, in order to be able to react to the COVID-19 pandemic. This task force initially comprised 13 researchers from all the institutions of the ETH Domain. It was headed by M. Ackermann.

On 23 March 2020, this task force of the ETH Domain was transferred to an extended "ad-hoc Swiss Scientific COVID-19 Task Force". This expanded task force was the forerunner of what later became the ncs-tf. It was supported by the ETH Board (represented by the President M. Hengartner), the SNSF (represented by M. Egger, the President of the National Research Council of the Swiss National Science Foundation (SNSF), swissuniversities (represented by the President Y. Flückiger) and the Swiss Academies of Arts and Sciences (represented by the President M. Tanner). The aim of this expansion was to establish this group of experts more broadly within the Swiss scientific community, both with regard to the scientific disciplines and the institutions involved, in order to be able to provide better support to the federal government.

On 24 March, M. Hengartner, M. Egger, Y. Flückiger and M. Ackermann wrote an e-mail[12] to L. Bruhin, head of the

Federal Council Coronavirus Crisis Unit (KSBC). Based on previous talks with L. Bruhin, they requested an official mandate for a Swiss science task force. This request met with a positive response, leading to the formation of the ncs-tf. At the same time, there were other parallel initiatives for the formation of a scientific advisory group. One of these initiatives was initiated by M. Battegay, who then also joined the ncs-tf. –

II.1.2 Phase 1 (31 March 2020-31 July 2020)

II.1.2.1 Epidemiological and political situation

During **the first epidemic wave, less than 10% of the Swiss population appeared to have been infected with SARS-CoV-2**. According to seroprevalence data, around 10% of the population in Geneva, where the virus was circulating heavily, were infected.[13,14]

From the end of May 2020 onwards, the sharp decline in the epidemic wave was once again followed by slow exponential growth in confirmed infections with SARS-CoV-2. This exponential growth started from a low level (the 7-day average of confirmed cases at the end of May 2020 was below 20). The number of confirmed daily cases remained at below 200 until the end of July 2020 (with a positive rate of less than 4%) and the number of daily hospitalisations did not exceed 10 (moving 7-day average). The intensive care occupancy rate rose from a low of around 15 in the second half of June to around 30 patients at the end of July. A total of 26 COVID-19 deaths were reported in June and July 2020. Of the approximately 13,000 total deaths due to COVID-19 in Switzerland by the end of March 2022, around 10% were reported between the beginning of April and the end of July 2020.[8]

From the end of April 2020 onwards, containment measures were gradually eased. On 19 June, the transition from the extraordinary to the special situation took place, with a transfer of responsibility and decision-making authority with regard to the pandemic from the federal government to the cantons. A major easing of restrictions was carried out at the start of June 2020 and two smaller easing steps took place in June 2020.

II.1.2.2 Developments relating to the ncs-tf

The Swiss National COVID-19 Science Task Force (ncs-tf) was formed on 31 March 2020[15], with a mandate from SERI (State Secretariat for Education, Research and Innovation)[16], the FOPH (Federal Office of Public Health)[17] and the KSBC (Federal Council Coronavirus Crisis Unit)[18] (mandate in Appendix A.1)**.** The SNSF, the ETH Board, swissuniversities and the Swiss Academies of Arts and Sciences are the mandataries. This new task force was headed by M. Egger.

The ncs-tf established ten expert groups that covered various scientific fields relevant to the response to the pandemic. These groups were: Clinical Care, Infection Prevention and Control, Data and Modelling, Ethical Legal and Social Issues, Economics, Public Health, Diagnostics and Testing, Vaccines and Immunisation Strategies (later renamed Immunology), Exchange Platform (later renamed International) and Digital Epidemiology. M. Egger, President of the ncs-tf, together with the other three Presidents of the mandated institutions (see above), appointed a leader for each expert group. The leaders then elected the members of the expert groups in consultation with the President. The task force was complemented by an Advisory Board, which included other scientists from Switzerland. The basic structure of the task force was thus defined at the beginning of April 2020, and remained unchanged until August 2021. The presidents of the four mandated academic institutions (in the case of the SNSF: President of the Research Council) were closely associated with the ncs-tf: M. Egger as President, M. Tanner as head of the Public Health Expert Group and M. Hengartner and Y. Flückiger through regular dialogue with the management of the ncs-tf.

The ncs-tf established the processes and cooperation within the task force. Meetings were held three times a week within the ncs-tf, in which all expert groups participated. Meetings with the Advisory Board were also held twice a week. The members of the expert groups also usually met up once or twice a week (see Section II.3.1 for more information on the procedures within the ncs-tf).

Immediately after its foundation, the ncs-tf commenced cooperation with the organisations of the federal government and the cantons (see also Section II.3.2). It took part in weekly meetings of the KSBC and presented a brief assessment of the epidemiological situation. Emerging topics related to COVID-19 were discussed at regular meetings with the FOPH. Contact with the Swiss Conference of the Cantonal Ministers of Public Health was first established as part of the KSBC meetings and later also directly. Two experts from the ncs-tf, M. Battegay and J-E. Sturm, attended the meeting of the whole Federal Council on 8 April 2020.

In this first phase, the ncs-tf wrote 43 policy briefs with scientific and often interdisciplinary perspectives on current topics related to COVID-19 (see also Section II.3.1). The reports were first shared with the mandators and then published. The ncs-tf prepared them both at the request of the mandators as well as on its own initiative on topics which the ncs-tf considers relevant. A website was created for the publication of information. The ncs-tf was supported by a coordinator who is a member of SERI.

The main focus of the ncs-tf in this first period was on scientific assessments of the easing of containment measures[19], strategies for avoiding a second wave[20] including strategies for TTIQ (testing, contact tracing,

isolation and quarantine) and on preparing new scientific insights and analyses. During this time, these were quickly available across all relevant scientific disciplines, such as for the use of masks[21] (all policy briefs are listed in Appendix A.4). Furthermore, the ncs-tf supported the evaluation of vaccine candidates and the development of diagnostic tests from the outset.

The ncs-tf also provided scientific support to the mandator and other organisations in implementing public health measures. Based on experiences from the first epidemic wave, experts from ncs-tf were actively involved in planning an increase in intensive care capacity and coordinating the transfer of patients between Swiss hospitals. In addition, ncs-tf experts worked with other scientists to develop an online platform for providing resources and expertise from the academy for hospitals and test centres.[22] This platform made large-scale equipment, consumables, reagents, know-how and staff from academic institutions available to companies in the healthcare sector. More details on the main scientific topics can be found in Section II.3.4.

The extraordinary situation also marked the end of the first mandate of the ncs-tf on 19 June 2020. At the end of the extraordinary situation, the KSBC – one of the mandators – was dissolved and the mandate was thus terminated. After the dissolution of the first mandate, the ncs-tf continued its work. The FOPH and the GS-FDHA discussed the creation of a new mandate with the ncs-tf. At the same time, mandators and mandataries were also preparing a change in the management of the ncs-tf. M. Egger stepped down from this position, in order to concentrate on his work as President of the Research Council of the SNSF and a professor at the University of Bern. The office was taken over by M. Ackermann, who was already Vice-President during the phase of the first mandate.

II.1.3 Phase 2 (1 August 2020-10 August 2021)

II.1.3.1 Epidemiological and political situation

Between August 2020 and August 2021, Switzerland was affected by two epidemic waves of SARS-CoV-2. In August 2020, the number of confirmed cases increased with a doubling time of around four weeks.[11] In September 2020, less than 10% of the Swiss population probably had some immunity following infection with SARS-CoV-2.[14] After a temporary decline in the rate of infection in the second half of September, the rate of increase accelerated from the end of September to a doubling time of about one week. The containment measures were eased further at the end of September. It is obvious that the rapid increase in contact-based infections was due to a combination of weak containment measures and thus a large number of infectious contacts, a seasonal increase in infections and a low level of immunity in the population.

Around 85 to 90 deaths were reported per day in November and December 2020. In total, more than 5,300 deaths due to COVID-19 were reported in these two months. This is equivalent to 40% of all COVID-19 deaths by the end of March 2022.[8] Over a period of 15 weeks, this second wave produced excess mortality across Switzerland in the over 65 age group.[9] At the end of October, there was a peak of around 8,000 confirmed cases (7-day average) reported with a positive rate of around 30%. At this point, 250

people were hospitalised every day (moving 7-day average). During the peak, more than 500 patients were in intensive care. After an approximately 50% reduction in the number of infections and a roughly 30% decrease in hospitalisations, these figures remained largely unchanged in December.[8] On 19 October, the obligation to wear a mask was introduced in public institutions. On 28 October and 22 December, the social distancing measures were further increased.

At the same time, a variant of SARS-CoV-2 spread throughout Switzerland from mid-December 2020 onwards. This variant had a higher transmission rate and resulted in more severe cases of the disease. This variant was first referred to as B.1.1.7 and later as Alpha. As Alpha was still rare at first, the number of confirmed infections and daily hospitalisations continued to decline in January and February 2021. Alpha, however, spread exponentially. The measures were tightened further on 18 January 2021. In March, the dominance of Alpha resulted in a further increase in infections. The peak of this third epidemic wave was around 2,200 cases per day (moving 7-day average), around 10% positivity (PCR tests), about 80 hospitalisations per day (moving 7-day average) and around 250 people in intensive care. Around ten people died every day (moving 7-day average).[8]

Of the approximately 13,000 total deaths due to COVID-19 in Switzerland by the end of March 2022, around two-thirds were reported between August 2020 and August 2021. By August 2021, more than 10,000 deaths had been reported throughout the entire pandemic.[8] In the spring of 2021, up to 25% of the Swiss population had antibodies against SARS-CoV-2, depending on the region.[14]

From the end of 2020 onwards, the roll-out of a vaccination campaign with effective RNA vaccines increased immunity among the population. Initially, the vaccination was offered to people at higher risk of a severe COVID-19 infection and to health professionals. A little later, staggered according to the age, this was extended to all adults for whom the vaccination was approved. From June 2021 onwards, young people from the age of 12 were also be able to get vaccinated.[23] The vaccine coverage achieved in Switzerland was lower than in other comparable countries: at the end of July, fewer people had been vaccinated in Switzerland than in any other country in Western Europe.[24] On the other hand, the mRNA vaccines used in Switzerland offered greater protection against infection and serious illness than other vaccines.[25]

At the end of April 2021, the Federal Council presented a plan for the gradual abolition of the social distancing measures. The three-phase model[26] described planned easing measures depending on the progress of the vaccination rate, together with a shift in objectives from protecting people from infection to protecting the hospital system. The three-phase model also provided for opportunities to tighten social distancing measures again in the event of a deterioration of the epidemiological situation.

II.1.3.2 Developments relating to the ncs-tf

The second mandate for the ncs-tf entered into force on 1 August 2020[27] (mandate in Appendix A.1). The mandators were the FOPH and the GS-FDHA. The ncs-tf was formally assigned to the FOPH COVID-19 Task Force, which coordinated the COVID issue at federal level. The mandatories were M. Hengartner as President of the ETH Board and M. Ackermann as the new President of the ncs-tf. SERI, the SNSF, the Swiss

Academies of Arts and Sciences and swissuniversities signed a statement stating their approval. The structure of the ncs-tf with ten expert groups and an advisory board was retained. The ncs-tf now had a steering group: in addition to M. Ackermann as President, the steering group initially consisted of M. Bütler, S. Hurst and M. Battegay as Vice-Presidents (J.E. Sturm and U. Karrer replaced outgoing Vice-Presidents M. Bütler and M. Battegay in this role).

The second mandate intensified the dialogue between the FOPH and the ncs-tf. The regular meetings (usually every two weeks) between the FOPH, representatives of the CMPH (the Swiss Conference of the Cantonal Ministers of Public Health) and the ncs-tf continued. From mid-August 2020, there were weekly meetings between A. Lévy (the Director of the FOPH), other FOPH employees and the President of the ncs-tf. In addition, there were further ad hoc meetings between employees of the FOPH and the ncs-tf (in certain periods several times a week) as well as a meeting every two weeks between A. Lévy, C. Berger (the President of the Federal Commission for Vaccination FCV) and the President of the ncs-tf.

From September 2020 onwards, the ncs-tf had increased contact with Federal Councillor A. Berset, the GS-FDHA, the Federal Council as a whole and members of parliament. On 22 September 2020, the ncs-tf management team met up with Federal Councillor A. Berset, A. Lévy and other members of the GS-FDHA and the FOPH. Following this meeting, direct dialogue with the GS-FDHA also intensified. Federal Councillor A. Berset initially met up sporadically and then regularly with the management team of the ncs-tf (a total of ten meetings between September 2020 and August 2021). GS-FDHA employees also held regular discussions with the ncs-tf steering group. Members of the ncs-tf also took part in several hearings of parliamentary committees or meetings with parliamentary groups (see Section II.3.2 for details). On 21 October 2020, the management team presented the epidemiological situation, new medical findings and their implications to the whole Federal Council. The ncs-tf also took part in the COVID-19 steering committee, a body headed by the GS-FDHA, during which the secretary-generals of the seven Federal Departments, the secretary general of the CMPH, a vice-chancellor and the Director of the FOPH met up, usually once a week, and presented an assessment of the situation from their point of view. The social partners were also occasionally invited (extended steering committee).

From October 2020 onwards, the ncs-tf regularly took part in press conferences on COVID-19 organised by the Federal Chancellery (technical press briefings). The ncs-tf is usually represented by its President. The vice-presidents and other experts, who gave opinions on specific scientific topics, also took part from time to time. From October 2020 onwards, the ncs-tf took part in the press conferences, initially mostly weekly and in 2021 usually every two weeks.

The ncs-tf increased the coordination of its communications. From August 2020 onwards, the ETH Board supported the ncs-tf in communication matters. ETH Zurich also supported the ncs-tf President. In the following weeks, a communication plan and a new website were developed. From the end of August 2020 onwards, the ncs-tf also worked with an external communications service provider, which coordinated media work within the task force and supported the experts with media interviews and reports. In addition, the media offices of the universities and academic institutions involved supported the Task Force members in their media work.

In this second period, the ncs-tf continued to regularly present the latest scientific findings on SARS-CoV-2 and COVID-19 in 46 policy briefs and 46 scientific updates and epidemiological assessments. A key finding is that a quick response to epidemic waves reduces the burden on health, the economy and society.[28] At the same time, it emphasises the importance of ensuring a daily routine for children.[29] In July 2020, the ncs-tf reported a marked increase in infections[30] for the first time and, in the second wave, provided estimates of the expected burden on the healthcare system and, in particular, intensive care units[31]. When Alpha emerged, information on the effects on the epidemiological event was provided in good time.[32] Two policy briefs discuss possible COVID-19 certificates[33,34] (in addition to a policy brief dated 22 April 2020 on this topic[35]). Furthermore, an economic analysis of the consequences of the measures decided so far was submitted to the Federal Council on 7 January 2021 at its request.[36] These points are discussed in more detail in section II.3.4.

The ncs-tf prepared for a reorganisation and a change in management in the summer of 2021. The structure consisting of expert groups and an advisory board was abolished, and the number of members was reduced from almost 80 to around 25. This reduction was possible because dialogue within the scientific disciplines had become well established (also due to the previous work within the ncs-tf), and the experts remaining in the task force remained in close contact with colleagues in their field. The management of the ncs-tf was transferred from M. Ackermann to T. Stadler. There were two reasons for this change: due to the voluntary nature of the task force, managing the task force involved a great deal of additional work (especially for the leaders), which could not be performed in the long term in addition to their actual job. In addition, rotating leadership corresponded to the nature of the task force as a committee of scientists, which was chaired by the leader as *primus inter pares*.

II.1.4 Phase 3 (11 August 2021-31 March 2022)

II.1.4.1 Epidemiological and political situation

Between August 2021 and March 2022, Switzerland was affected by further epidemic SARS-CoV-2 waves triggered by the spread of the Delta and Omicron variants. By March 2022, it is estimated that more than 95% of people had been vaccinated or recovered. Between August 2021 and March 2022, around 20% of the total of around 13,000 COVID-19 deaths occurred.[37]

The normalisation phase of the Federal Council's three-phase model began on 11 August 2021. It is assumed that all adults had access to a vaccine during the normalisation phase. The Federal Council defined its primary objective during the normalisation phase as preventing the hospital system from being overloaded. From 13 September onwards, the certificate requirement involving 3G (vaccinated, recovered, or tested) was significantly expanded. From 20 December onwards, the certificate was restricted to vaccinated and recovered individuals (2G). Quarantine was lifted at the beginning of February 2022 and the certificate requirement was lifted in mid-February.

Additional vaccinations were offered in the autumn and winter of 2021/22. The third vaccinations were first offered to risk groups[38] and, from the end of 2021 onwards, to the general population[39]. Children from the age of five were vaccinated from the start of 2022.[40]

The peak of an epidemic wave with the SARS-CoV-2 variant Delta was reached at the beginning of September 2021.[8] The peak for confirmed cases was just under 2,800 (moving 7-day average). The positive rate climbed to a peak of around 25% in mid-August (PCR tests). The peak number of hospitalisations in the second half of August was around 80 per day (moving 7-day average), with occupancy in intensive care increasing to around 280 patients. On a seven-day average, fewer than ten people died every day. Over the course of two weeks, people over the age of 65 experienced excess mortality across Switzerland.[9] Around 40% of infections were attributable to people returning to the country after a trip abroad.[41]

In December 2021, there was another epidemic wave with the Delta variant. The maximum number of confirmed cases was just over 9,300 (moving 7-day average), with a positivity of up to 25% (PCR tests). The maximum number of hospitalisations per day was around 130 (moving 7-day average) and there were approximately 315 patients in intensive care. On a 7-day average, slightly less than 30 people died every day.[8] Over the course of nine weeks, there was excess mortality in the over 65 age group throughout Switzerland.[9]

In November 2021, a new SARS-CoV-2 variant with a large number of mutations was detected in South Africa. On 26 November 2021, the WHO classified it as a variant of concern and called it "Omicron". Omicron is capable of partially evading immune protection and a reduction in intrinsic virulence compared to Delta. As a result, Omicron causes a large number of infections within a short space of time. Because many infected people have been vaccinated and the variant is less virulent overall, only a smaller proportion of those infected are admitted to hospital.

At the end of January 2022, the Omicron wave reached its first peak in infections. The maximum number of confirmed cases per day at the end of January was around 36,000 (moving 7-day average) with a positive rate of up to about 50%[8]. Assuming an estimated number of unreported cases of between 3-fold and 4-fold, this means that around 10% of the Swiss population was infected every week over several weeks.[42] The number of daily hospitalisations varied by 130 (moving 7-day average) from the beginning of December 2021 to the end of January 2022 before the numbers fell back to around 80 daily hospitalisations (moving 7-day average).[8]

From the end of January onwards, the number of (reported) infections and hospitalisations decreased.[8] This decrease is attributable – for the first time during the course of the pandemic in Switzerland – to at least temporary immunity among the population that reduced the spread of infections sufficiently. On 17 February 2022, most of the social distancing measures were lifted. From the end of February 2022 onwards, the number of reported cases increased again, which can be explained plausibly by the easing of measures and the spread of Omicron variant BA.2.[43]

A peak of the Omicron BA.2 wave was reached in mid-March. In 20 days, the number of cases doubled from around 14,000 to about 28,000 on a moving seven-day average, the number of daily hospitalisations increased by around 50% within two weeks and positivity rose to just under 60% (PCR tests). At the time of this report (29 March 2022), the number of new confirmed cases is in decline.[8]

The total number of deaths between the beginning of January 2022 and the end of March 2022 (data taken into account until 28 March 2022) was around 1,000, while the total number of new hospitalisations was around 9,600. The number of daily deaths during this period did not exceed 16 on a moving 7-day average.[8] Over the course of two weeks, there was excess mortality across Switzerland for the over 65 age group.[9] The intensive care occupancy rate fell by around half between the beginning of January (more than 300 patients) and the end of March.[8]

II.1.4.2 Developments relating to the ncs-tf

The third mandate for the ncs-tf entered into force in August 2021 ([44]; mandate in Appendix A.1)**.** The mandate has now been set up as a cooperation agreement between the ncs-tf (represented by T. Stadler), the ETH Board (represented by M. Hengartner) and the GS-FDHA, the FOPH, SERI, SNSF, the Swiss Academies of Arts and Sciences and swissuniversities. This cooperation should remain in place until 31 May 2022 at the latest. The ncs-tf will now be headed by T. Stadler as President and S. Hurst, J.E. Sturm and U. Karrer as vice-presidents. The structure consisting of expert groups and an advisory board was abolished and the number of ncs-tf members was reduced from almost 80 to 25. At the same time, new experts bring paediatric expertise to the ncs-tf (see Section II.3.1 for details). At her request, the term of office of T. Stadler was limited until 31 December 2021 for the time being. Due to the difficult epidemiological situation at the end of 2021, T. Stadler decided to take over as President until the end of the mandate.[45]

The ncs-tf continues to be in close dialogue with the FOPH and the GS-FDHA. Regular meetings with the management of the FOPH, experts from the FOPH and Federal Councillor A. Berset, as well as dialogue with GS-FDHA employees, will be continued and contact with the management of the CMPH expanded.

The coordination of communication within the ncs-tf as well as with the Federal Chancellery and the FOPH will continue. The President and Vice-Presidents of the ncs-tf regularly took part in the technical press briefings, sometimes together with other experts of the ncs-tf who explained individual scientific topics in detail.

The ncs-tf also regularly presented the latest scientific findings on SARS-CoV-2 and COVID-19 in 7 policy briefs and 34 scientific updates and epidemiological assessments. The ncs-tf proposed possible objectives for phase three of the three-phase model together with measures for achieving them[46]: to prevent overloading of the hospital system, to minimise the burden on 0- to 12-year-olds (who were unable to be vaccinated in August 2021) and to protect those aged 12 and over who cannot be vaccinated or for whom the vaccination offers poor protection against hospitalisation or long COVID. The ncs-tf continued to analysed data in particular, in order to record any drop in immunity in the Swiss population at an early stage[47] and thus support the planning of a third vaccine dose. With the emergence of the

Omicron variant, the ncs-tf illustrated the resulting possible consequences.[48] These points are discussed in more detail in section II.3.4.

On 16 February 2022, the Federal Council announced that it will dissolve the ncs-tf at the end of March 2022 at its own request.[49] In a press release[50], the ncs-tf stated that from April 2022 onwards there would still be numerous political, social and medical challenges in dealing with the long-term consequences of COVID-19. Switzerland will gradually address these challenges within its regular structures again. Individual members will continue to be available to the authorities and politicians as experts. At the same time, the ncs-tf is publishing a document with suggestions[5] on how Switzerland can prepare itself as well as possible for future developments of the pandemic.

II.2 Understanding of roles

The ncs-tf was established as an ad hoc committee with a large number of members. The understanding of the role of the ncs-tf therefore had to be developed and improved after its founding. The focus has always been on fulfilling the main duty of the mandate of the ncs-tf in the best possible way, namely by ensuring independent scientific advice for Swiss politicians and authorities.

Over the course of 24 months, the ncs-tf developed an understanding of its role, which focused on four key tasks in dealing with the pandemic and included transparent documentation of its work:

1. The **scientific work**, i.e. the collection and analysis of data and the compilation of findings from international studies (see also Section II.3.4).
2. The **internal presentation of the scientific findings and options for action in dealings with the mandatary**[2] as well as a presentation of possible goals and how they can be achieved (e.g. avoidance of the second wave[2], see also Appendix A5).
3. **Cooperation with mandataries at the interface of evidence-based knowledge and implementation in the public health sector**. Several members of the ncs-tf were involved in various FOPH working groups, for example in the procurement of medicinal products or vaccination issues. This was not about political decisions, but about incorporating scientific aspects into medical and public health measures.
4. The **transparent, coordinated and target-group-oriented presentation of scientific results to the public** via our own platforms and media. Here, it was crucial to present the facts and assumptions behind the scientific findings and also to communicate the uncertainties transparently without adopting a judgemental or political position.

This understanding of roles was based on the principle of a clear separation between the political decision-making process and the communication of relevant scientific findings. Politicians are elected to make decisions and bear responsibility for them. Scientists, on the other hand, cannot and should not perform this task. Their task is to provide evidence.

This principle also meant that those scientists who belonged to the ncs-tf should neither make political demands nor participate politically as stakeholders and lobbyists. Their role was that of honest brokers.[51] The emergence of the ncs-tf has therefore given the experts involved a new role that most of them have never taken on before, with clear differentiation from the political decision-making process. The incorporation of this new role in the work of the ncs-tf, as well as the perception of this new role by the media and the public, took some time. Compliance with the principles of understanding their roles required a high degree of political restraint from all members of the ncs-tf, including in their roles as individual experts. Depending on the situation, these requirements could be perceived as restrictive and contradict one's own personal and professional values as an individual scientist. Over the course of the 24 months, individual scientists decided to leave the task force. This step allowed them to express themselves politically.

A keen understanding of the role of the mandator was just as important as one's understanding of one's own role. It was important to clarify which scientific expertise should be covered by a federal office in the event of a crisis and which external scientific expertise should be used in order to avoid irritation on either side about perceived overstepping of powers. The better understanding of roles on both sides served as the basis for a constructive dialogue between the ncs-tf and the FOPH.

In order to ensure a clear separation between political and scientific work, the ncs-tf should provide decision-makers with its options for action. Politicians have the task of choosing between various options for action, weighing up values and interests, and taking into account the current state of knowledge. The assessments of expert committees may also include assessments, which are then disclosed in a transparent form of scientific communication. Over the course of the pandemic, questions of values were repeatedly addressed as part of our consulting activities. In the autumn and winter of 2020/21, the ncs-tf proposed political measures without presenting other options for action or explicitly discussing the values on which the proposals are based.[52] This assessment was based on a previous analysis which showed that it is desirable from a health, social and economic point of view to avoid widespread infections among the population (as pointed out on 14 September 2020[28]). Furthermore, without measures to reduce infections, the constitutional social objective "[that] every person receives the care they need for their health" seemed unattainable due to the risk of triage in hospitals.[53] Later, the ncs-tf made a clearer distinction between values and goals on the one hand and the actions taken to achieve these goals on the other. When Omicron first emerged, the ncs-tf, for example, outlined possible targets and discussed the precautions needed to achieve these goals (11 December 2021, Appendix A in[54]). Whether and how values are incorporated into scientific advice is a difficult issue. When the Omicron variant emerged, the German National Academy of Sciences Leopoldina explicitly included questions relating to values (but no alternative value priorities) and declared the corresponding values.[55]

From an external perspective, it was often unclear how the assessments of the ncs-tf were taken into account in political decisions. One explanation for this could be that the public only received very little information as to whether and how scientific findings were incorporated into the decision-making process.[56,57,58]

At the same time, it must be ensured that scientists, as specialists, are able to speak freely about their subject area at any time. The second and third mandates of the ncs-tf (i.e. for the period from August 2020 to March 2022) stipulate that the ncs-tf may make the expertise available to the public and that individual experts may express their views in their role outside the ncs-tf. Various demands were made that the ncs-tf should change its communication style in the media (there were calls to "muzzle" the task force[59]). It was requested that either 1) only the President and no other members should express their views in the media or in public, or 2) that the ncs-tf should consult only the government, but should not comment on the President or other members in public. Both demands were problematic because they are incompatible with freedom of research and opinion (guaranteed at constitutional level) and contradict the public's right to transparent information. In addition, the ncs-tf comprised a significant proportion of the relevant scientists in Switzerland. If these experts had no longer been allowed to express themselves scientifically, there would have been a risk that the scientific assessments in the Swiss media would have

been less representative and less broad based, that many scientists would have decided not to participate in the ncs-tf or that primarily international experts would have had their say in Switzerland, and that scientific aspects would have been largely unrelated to the situation in Switzerland.

Communicating the scientific evaluation of measures proved to be a difficult area. On the one hand, a scientific assessment of the possible impact of containment measures on policy was key and therefore the task of the ncs-tf. On the other hand, it was important for the ncs-tf as an advisory body not to be perceived as political in public. Finding the right balance in the communication strategy was not easy when it came to a scientific evaluation of measures. Due to the drastic consequences of many measures and the associated public interest, these issues were understandably constantly the focus of attention and some sections of the public and the media expected a clear political positioning of the ncs-tf. However, a political position does not correspond to the understanding of the role of the ncs-tf. The understanding of the ncs-tf's role included that it collected and analysed the available knowledge at all times, developed options for action based on this knowledge, and then subjected it to a risk-benefit assessment. In addition, the potential effects of measures at a national level were sometimes subject to major uncertainties which had to be communicated – even if clear answers were desired. Over time and with increasing experience, the ncs-tf managed to master this balancing act better in its own view.

The need for a clear understanding of roles has also become clear in public discourse. Over the course of the 24 months, for example, the ncs-tf was criticised for expressing its opinion with a scientific evaluation of measures (the highlight was the "muzzle" discussion, see above). This criticism took place above all in the traditional media. At the same time, the ncs-tf was strongly criticised on social media for not demanding political measures (e.g. whether masks should remain mandatory indoors). This shows how important it is for the role of a scientific advisory group to also be clearly communicated to the outside world.

It is important for an advisory body to clearly distinguish between "science for policy" and "policy for science" for two reasons.[2] By appointing a "science for policy" advisory body on the recommendations of the heads of ERI institutions ("policy for science" actors) with regard to scientific expertise, the advisory body is broadly supported and legitimised. ERI stakeholders have an overview of all experts and can therefore propose an objective and technically sound selection of members. This selection process should be clarified and communicated at an early stage together with the understanding of roles. It should be clear to the public and the committee as to why these particular experts are elected rather than others who might possibly have represented different views.

Second, it is important to separate scientific advice from higher education institution policy. In order to avoid conflicts of interest, for example, a crisis advisory body should not be involved in discussions about which scientific programmes politicians should invest money in. These two areas were initially not clearly separated when the ncs-tf was formed on an ad hoc basis in the spring of 2020. Heads of the academic institutions (ETH Board, SNSF, swissuniversities and the Swiss Academies of Arts and Sciences) were best qualified to assemble and lead a group of experts, both in terms of their overview of the Swiss research landscape and their own scientific expertise. In the first mandate, the identification of opportunities for

innovation and research was also explicitly mentioned as a field of action for the ncs-tf. This activity was then no longer listed as a field of action in the second mandate, and scientific advice was separated from proposals for research funding.

II.3 Work

II.3.1 Internal structure

II.3.1.1 Composition of the ncs-tf

In the spring of 2020, there were no established processes in Switzerland for assembling an interdisciplinary scientific advisory group for acute crises. There was the established instrument of the extra-parliamentary commissions, and at least two existing commissions (the Federal Commission for Vaccination (FCV) and the Federal Commission for Pandemic Preparedness and Response (FCP) with a central focus on a pandemic. However, the composition requirements of an interdisciplinary scientific advisory group tailored to an acute crisis had not been defined. This raised key questions as to who should decide on the scientific disciplines to be represented and the experts who represent them. This issue is also of key importance for the legitimacy of an advisory group.

In the case of the ncs-tf, four of Switzerland's central academic institutions played a key role. The ETH Board, the SNSF, swissuniversities and the Swiss Academies of Arts and Sciences initiated the formation of the ncs-tf, determined the thematic composition, nominated the President in consultation with the FOPH and the GS-FDHA and appointed the heads of the ten expert groups. The President of the Academies of Sciences (M. Tanner) and the President of the Research Council of the SNSF (M. Egger) played a leading role as President of the ncs-tf during the first mandate and as head of the Public Health Expert Group. In addition, the presidents of these four institutions (or, in the case of the SNSF, the President of the Research Council, and from autumn 2020 onwards the Vice President of the Research Council) met every two weeks with the management team of the ncs-tf and thus remained heavily involved.

The selection of the members of such a scientific advisory group is also of great importance. The aim was to have the most relevant scientific expertise in Switzerland for the crisis represented in the ncs-tf. The selection of members of the ncs-tf was based on the scientific expertise of the individual researchers. The members were chosen regardless of their affiliation with scientific organisations, societies or professional associations. In addition, the ncs-tf did not recruit any members who were not scientifically active.

Between the beginning of April 2020 and January 2021, the ncs-tf expanded to 83 experts. The number of expert groups remained constant at ten, but several expert groups have widened the scope of their represented expertise. For example, the portfolio of the ncs-tf has been supplemented with nursing sciences, educational sciences and mental health sciences. These extensions to the ncs-tf were usually proposed by the expert groups concerned and then defined in discussions between the management team and the expert group. Formally, the President of the ncs-tf was responsible for decisions on memberships up to August 2021, in consultation with the other mandators and mandatories. From August 2021 onwards, such decisions on the procedure were entrusted to the ncs-tf by means of a mandate. In practice, these decisions were always made within the ncs-tf management team. A list of all ncs-tf experts can be found in Appendix A.2.

The interdisciplinary approach and the voluntary work – in addition to the regular duties – led to the task force being made up of a large number of members. The task force served as a platform for interdisciplinary discussion of emerging questions regarding the development of the pandemic, which required the participation of a wide range of experts. In addition, it was important for the individual expert groups to have enough members for two reasons: firstly, the most relevant scientific perspectives should be represented within a discipline. The pandemic raised many new questions for which there were not yet any consolidated scientific answers. If important disciplines had only been represented by one or two experts, there would have been a risk that important perspectives would have been lacking. Secondly, there was a very large volume of work in many areas, which the experts had to deal with in addition to their employment at higher education institutions, hospitals or research institutes. The workload was only possible thanks to the cooperation of a large number of experts.

However, the size of the task force made coordination and management more difficult. Specifically, there were two challenges. The first challenge was communication. As individual experts, the members of the task force were able to express their opinions freely in public and in the media (see also Section II.2). This made a positive contribution to increasing the diversity and interdisciplinarity of the scientific categorisation of pandemic issues in Switzerland. One difficulty was to coordinate communication in such a way that the variety of statements was not perceived as confusing and the public health message was clear at all times. A second challenge was that not all members had the same level of information and understanding of their roles.

The task force had no expertise in political science and history. The establishment of such a scientific advisory body generally leads to a conflict of objectives: the more relevant disciplines are covered, the larger the group and the more difficult the coordination. This makes compromises relating to composition unavoidable. Over the course of the pandemic, it became clear that expertise in political science and history is relevant to such an advisory body, not least because many experts had no experience in dialogue between scientists, politicians and administrators. Discussions with experts outside the ncs-tf were helpful in getting to know and implementing tried-and-tested principles of this form of dialogue.

The ncs-tf was reorganised in August 2021. The previous structure of the expert groups and the Advisory Board was abolished. The management team remained in place and now led a smaller group of 25 experts, without further subdivision into expert groups. This small-scale task force comprised members of all previous expert groups. In addition, experts were recruited for additional topics, in particular in paediatric infectiology and paediatric mental health.

The ncs-tf was also in close dialogue with scientists who were not formally members of the task force. Key roles were played by members of the ncs-tf's own research groups, who carried out analyses and research. In addition, the ncs-tf was in close contact with numerous scientists from its own network. As a result of the large number of scientists involved in relation to the size of Switzerland (compared to other countries), Switzerland experienced a special situation when compared with other countries: a large

proportion of scientists from the relevant disciplines were involved in the dialogue with decision-makers, either formally or informally.

Dialogue with scientists outside the task force was systematically cultivated, particularly in the area of Ethical Legal and Social Issues (ELSI). As part of the discussions on policy briefs in this area, SNSF-backed researchers were informed via Division 1 of the Swiss National Science Foundation (SNSF) and invited to share their views. The ELSI Expert Group turned directly to researchers to obtain input on specific topics (e.g. here[60]). Sometimes topics for policy briefs were suggested by experts who were not members of the ncs-tf (e.g. here[60]), or they were initiated at the request of citizens (e.g. here[60]).

The ncs-tf was supported by additional specialists. Many members were supported by their institutions in administrative and communicative aspects. A coordinator organised the processes in the ncs-tf and played a key role in the overall organisation over the two years. Support from communication experts was also crucial, especially when it came to communicating to the outside world by the President, the members of the management team and the other members of the ncs-tf (see below). From August 2021 onwards, a scientific coordinator provided additional support in carrying out analyses and creating graphics. This support from specialists, who were only able to provide support for the work of the ncs-tf, was key. In the area of coordination and data, only one person was available at a time, which made the situation more difficult in the event of illness-related absences. The salaries of these healthcare professionals were paid by the ETH Board, which was also formalised like this in the third mandate (Annex A.1). The members of the ncs-tf, on the other hand, received neither remuneration nor compensation for their work in the task force.

II.3.1.2 Work within the ncs-tf

The central body for internal ncs-tf discussions was the internal meetings of the task force. These meetings initially took place three times a week and from June 2020 onwards, this was reduced to twice a week. Up to November 2020, these meetings were attended by the management team, the members of the Advisory Board and the heads of the expert groups – a total of almost 20 people and additional experts depending on the main topic. Sometimes members of the mandating committees also took part as guests. From November 2020 onwards, the meetings were also opened to the other members of the ncs-tf. From August 2021 onwards, with the reorganisation and reduction of the task force, all members attended the meetings, which took place twice a week, wherever possible. The agenda of all meetings is set out in Annex A.3. Additional ad hoc meetings were mainly organised in the autumn and winter of 2020/21. Topics were both proactively placed on the agenda by the ncs-tf and included on the agenda in response to enquiries from the mandators.

In concrete terms, the timetable for the ncs-tf meetings within the ncs-tf was as follows:

- Internal meetings of the ncs-tf: from the beginning of April 2020 onwards, three times a week with the heads of the expert groups and twice with the Advisory Board; in June 2020, this changed to twice a week;

- Meetings within the expert groups were initially held several times a week and later once a week in most expert groups; the expert groups organised themselves;
- Management team meetings: twice a week;
- Management team meetings with the communications team: once a week;
- Meetings of the management team with heads of the academic institutions (ETH Board, SNSF, swissuniversities and the Swiss Academies of Arts and Sciences): every two weeks.

Between April 2020 and the end of March 2022, members of the ncs-tf attended a total of several hundred meetings on the topic of COVID-19. The members of the ncs-tf met about two hundred times. There were also around 200 other meetings within the management team and many meetings in the expert groups. In addition, a number of ad hoc meetings were organised as and when required. In addition, experts were in close dialogue with members or were themselves members of specialist committees such as the Swiss Society of Infectiology, the Swiss Society of Intensive Care Medicine, the Swiss Academy of Medical Sciences and Swissnoso. Information from dialogue with these companies was fed into the ncs-tf meetings.

The results of the ncs-tf meetings were summarised in documents and reports which were made publicly available. Consolidated assessments of current scientific issues were prepared at the meetings of the ncs-tf. The results focused on policy briefs and scientific updates (Annex A.4, Section II.3.3). These were developed in an iterative process that was open to all expert groups and included epidemiological, medical, economic, social, ethical and legal perspectives. The scientific opinions were published publicly from the end of April 2020 onwards. The policy briefs were usually initiated within the ncs-tf. If the policy briefs were requested by external parties, this was declared transparently. Updates to policy briefs were published either as an update to the original policy brief or as part of scientific updates. All scientific updates were initiated by the ncs-tf. Appendices to the scientific updates were partly created on the basis of external enquiries, which were always declared transparently.

The interdisciplinary focus was decisive for the work within the ncs-tf. The ncs-tf took a more interdisciplinary approach than similar support groups in other countries.[61] This made it possible to take into account the fact that COVID-19 is not just a health crisis, but affects virtually all areas of life. In addition to doctors, virologists, epidemiologists, immunologists and a nursing scientist, a wide range of other scientific disciplines, such as economics, ethics, law, education and sociology, were considered relevant for supporting political decisions. In the ncs-tf discussions, a comprehensive understanding was developed with the inclusion of the various disciplines. This broad, interdisciplinary approach was aimed for and implemented from the outset and has shaped the nature of scientific support in Switzerland.

The experts were in close dialogue with the international scientific community. In this way, the internal ncs-tf meetings were able to incorporate the latest findings from international colleagues before they were made public. ncs-tf experts have also been in close contact with experts from middle-income and low-income countries, and the ncs-tf emphasised the importance of the international distribution of vaccines (e.g. within the vaccine alliance GAVI[62,63]).

II.3.2 Interaction with mandators and other stakeholders

In the extraordinary situation, scientific advice was mandated by SERI/the EAER, the FOPH and the KSBC and, in the special situation, by the GS-FDHA and the FOPH.

The ncs-tf performed the following consulting activities:

1. Meetings of the management team with Federal Councillor A. Berset: 26 in total; usually every two weeks since the end of April 2021.
2. Meetings of the management team or ncs-tf experts with the whole Federal Council : three (8 April 2020, 21 October 2020 and 14 April 2021).
3. Active participation in meetings of the KSBC (during the extraordinary situation): once a week.
4. Active participation in the COVID-19 steering committee (during the exceptional situation). The ncs-tf has always presented the epidemiological situation. These meetings were usually held once a week. The participants were all secretaries-generals of the Federal Departments, the secretary general of the CMPH, a vice-chancellor and the Director of the FOPH. In addition, the social partners were represented on the enlarged steering committee, which occasionally convened.
5. Meeting of the President of the ncs-tf with the management of the FOPH (from the 2nd mandate): once a week.
6. Meeting of the President of the ncs-tf with the Director of the FOPH and the President of the FCV (from the 2nd mandate): twice a month.
7. Meeting between Federal Councillor A. Berset and the task force plenary, 29 January 2021.
8. Meeting between the Director of the FOPH A. Lévy and the task force plenary on 6 January 2021 and 15 October 2021.
9. Meeting of digital epidemiology experts with the "Digital Certificate and SwissCovid" *Steering Committee*: every two weeks.
10. Meeting between the FOPH, the Swiss Conference of the Cantonal Ministers of Public Health (CMPH) and the ncs-tf (with the management of the KSBC during the extraordinary situation): every two weeks.
11. Meetings of the FOPH, the FCV and the ncs-tf from March 2021 to February 2022: every two weeks (from March 2022 onwards, this dialogue takes place within the meetings under item 10).
12. Meeting with the FOPH medicine group from April 2020 onwards, initially twice a week, then weekly, then approximately every two to four weeks.
13. Meetings with parliamentary committees: three.
14. Meetings with parliamentary groups (a total of 13; list in Appendix A.6; some of these meetings took place together with experts who were not, or no longer, members of the ncs-tf; meetings were offered to all parliamentary groups).
15. Meetings with the Swiss Conference of Cantonal Ministers of Education (EDK): several meetings with the Public Health Expert Group; also close dialogue between individual experts and the EDK.

16. Dialogue with the Swiss Society of Paediatrics and *Kinderärzte Schweiz* (25 October 2021 and 13 December 2021), which resulted in a joint statement.[64]
17. International meetings: 25 meetings with EU science advisors, five meetings with members of the White House (USA) and from other countries, and eight bilateral meetings with members of parliament from various countries (list in appendix A.7).

There were also numerous other meetings with the management of the FOPH, experts from the FOPH on specific topics, employees of the State Secretariat for Economic Affairs (SECO) and the Federal Finance Administration (FFA) and representatives of the CMPH, cantonal doctors and cantonal authorities. Individual experts from the ncs-tf were also represented on WHO committees and shared their findings with the ncs-tf, who passed on this information to the decision-makers if necessary.

The deliberations were based on scientific assessments, which were published in writing after the deliberations. Section II.3.3 deals in detail with the preparation and publication of the documents.

The mandators' enquiries were coordinated centrally by mandate. As part of the crisis management of the extraordinary situation, the Federal Council Coronavirus Crisis Unit (KSBC) has been appointed as the main point of contact for scientific enquiries. The second mandate of the ncs-tf, which was granted during the special situation in the summer of 2020, and the third mandate from the summer of 2021 onwards, provided for the FOPH task force (an internal FOPH group) to be the coordination centre for such enquiries. From the outset, the ncs-tf also received many direct enquiries from various interest groups and individuals, including cantonal and communal authorities, parliamentary committees, party factions, professional associations and others. The ncs-tf did not advise individual citizens or companies and forwarded the enquiries to the FOPH accordingly.

A close dialogue has been established with the mandators. In the course of time, a clear understanding of roles developed between the mandators and the ncs-tf: the remit of the ncs-tf was to provide scientific results and analyses at all times. The input of the scientific community was incorporated into the political discussions and work of the mandators. In addition to the formal meetings (see above), an informal bilateral telephone exchange took place between the President of the ncs-tf, the Director of the FOPH and a personal employee of the head of the GS-FDHA. In particular, this helped to quickly clarify difficult situations.

Meetings with Federal Councillor A. Berset took place every two weeks from the end of April 2021 onwards. Three meetings were held with experts from the ncs-tf and the whole Federal Council . The Epidemics Act stipulates that action should be taken in accordance with the latest scientific findings. However, it has not been specified what scientific advice and support should entail.[65] Until August 2020, the assessments of the ncs-tf were shared with the KSBC Crisis Unit. In the special situation, assessments and estimates of the ncs-tf were shared with the mandator GS-FDHA and the FOPH. As the mandate was given by the GS-FDHA and the FOPH, the ncs-tf had no regular contact with other departments (apart from contact within the framework of the KSBC and the steering committee; see above). In other

countries, providing direct scientific advice to the government is envisaged [3,4] and establishing direct dialogue with the government, rather than primarily through the administration, is considered necessary[2].

II.3.3 Interaction with society and the media

II.3.3.1 Communication strategy

A central task of the ncs-tf was to provide society and the media with the scientific findings and assessments that were shared with the decision-makers within the ncs-tf mandate. This information has been disseminated in the form of written reports (policy briefs, current situation assessments and scientific updates), at media conferences and through the media. The written communication together with further information from the ncs-tf was published on the website in three national languages (German, French and Italian) and made available centrally. New publications were announced on the ncs-tf Twitter channel (Swiss National COVID-19 Science Task Force, @SwissScience_TF) and also sent out as press releases.

Policy briefs

The ncs-tf policy briefs covered a wide range of COVID-19-related topics (see also Section II.3.4). The complete list of a total of 96 policy briefs can be found in Annex A.4. The majority of policy briefs were written in English (and a few were issued in German). Summaries in German, French and Italian were prepared at the expense of the ETH Board.

Current situation assessments and scientific updates

From the beginning of October 2020 onwards, the ncs-tf published weekly situation assessments in German, French and Italian on its website.[66] From November 2020 onwards, the ncs-tf published scientific updates in German at an average of two-week intervals, with summaries translated into French and Italian. The ncs-tf produced a total of 46 epidemiological assessments and 34 scientific updates.

Press conferences

From October 2020 onwards, the ncs-tf, together with other experts, regularly appeared before the media at the technical press briefings on COVID-19 in the Media Centre of the Federal Palace in Bern. In the first few months, the ncs-tf was represented by the President, and later sometimes also by other members (especially members of the management team). At these 39 presentations in total, the ncs-tf provided information on the current situation from a scientific point of view and was available to answer questions from media representatives.

Further media relations

The great public interest in scientific assessments was reflected in the large number of media enquiries sent to the ncs-tf (from the autumn of 2021 to the spring of 2022, an average of around 10 enquiries per day were submitted to the ncs-tf media office and further enquiries were sent to individual experts). The ncs-tf was available to answer questions whenever possible.

Website

Until 2 December 2020, the ncs-tf used a website[67] provided by the State Secretariat for Education, Research and Innovation (SERI) and managed by a coordinator. From this date onwards, a new website developed by the ETH Board and an agency[68] was introduced and maintained by a specialist. In addition to the communication measures and channels mentioned above, the website contained information on the mandate, the list of members (including declarations of conflicts of interest), epidemiological information, press releases and selected press briefings.

The great public and media interest in the latest scientific findings and the special challenges in the context of infodemics and the politicisation of the virus required additional support in coping with the new tasks and requirements in the field of communication and media relations. The importance of a coordinated approach to incoming media enquiries was most evident in enquiries sent to several experts and answered individually. Coordination helped ensure that the same core statements were clearly communicated and that differences in the statements of different experts were not perceived as contradictions. In order to meet the communication requirements, the media offices of the ETH Board, ETH Zurich and the institutions to which the ncs-tf members belonged provided support. Additional support came from external experts in the fields of media relations, translations, website and editorial work on a mandate basis.

Communication with the public and the media followed agreed rules, which are laid down in the second and third ncs-tf mandates under section 4. Accordingly, external communication was handled by the President of the ncs-tf or by a member of the management team nominated by him/her. The other

members were free to express their views outside the task force. However, the distinction between a member of the ncs-tf and a specialist expert was difficult to communicate to the outside world and was not always noticed. Despite this practice, individual experts were portrayed in reports as ncs-tf representatives. Over time, with the better understanding of roles and repeated communication, it became easier to keep the separation.

The ncs-tf regularly and promptly communicated scientific findings in the scientific updates. If the topic concerned an upcoming political decision, the ncs-tf published these documents according to the mandate guidelines only after the decision had been communicated. On 29 November 2021, for example, the ncs-tf provided detailed information on the new Omicron variant found in South Africa at the press briefing.[69] Analyses on dealing with Omicron, which the ncs-tf presented to the decision-makers for decision-making in the context of the new variant (finalised on 11 December 2021), were published in the scientific update[54] on 27 December 2021.

The aim of the ncs-tf was to communicate all scientific findings transparently (Section II.2). This also applied to the transmission of information which could be perceived as negative or worrying. In a crisis, communicating negative information can influence trust and acceptance of measures, depending on the situation.[70] The remit of the ncs-tf was to always communicate current findings transparently and quickly, regardless of whether this information could trigger negative or positive reactions. According to the understanding of the roles described in Section II.2, the requirement in external communication was always not to back up the scientific evaluation with values or to explicitly state which values were included in the evaluation.

II.3.3.2 Thematic focus of communication

The ncs-tf proactively provided information from a scientific perspective on a wide range of topics related to the pandemic: for example, the importance of aerosols in the transmission of SARS-CoV-2, the advantages of masks, the risk of a second wave, and the advantages of a booster vaccination in the autumn of 2021 (see Section II.3.4). In general, the aim was to point out at an early stage the opportunities and risks arising from national and international data.

Media and society showed great interest in the topics of the ncs-tf throughout the pandemic. The media and the general public were particularly interested in future developments in case numbers and hospitalisations. This complex of issues has also generated the most criticism of the ncs-tf. Much of this criticism was based on the misunderstanding that a scenario can be equated with a prediction. Scenarios are always based on assumptions and are therefore subject to uncertainties. A scenario formalises future developments on the basis of a model and selected assumptions.[71] During a pandemic, the data situation is often thin on the ground, which means considerable uncertainties in the assumptions and the model, and so scenarios are also subject to uncertainties. However, we were not always able to clearly communicate these uncertainties.[72]

Scenarios based on current findings provide a basis for decision-making from a scientific point of view. The assumptions are clearly formulated in scenarios. The assumptions are adjusted with new insights. The ncs-tf produced scenarios in the following cases, among others, which showed that:

- the community infection approach does not work (14 September 2020;[28]),
- there is a risk of a second wave in the autumn (from 3 July 2020 onwards;[30]),
- intensive care units in Switzerland during the 2nd wave may reach maximum capacity (23 October 2020;[31]),
- the Alpha variant will be dominant in March 2021 and could trigger a third wave (29 December 2020; [32]),
- the 4th wave in the hospital could be very difficult to manage (29 June 2021;[73] indication of the risk of a wave; 17.8 reference to the situation in the hospitals[46]), and
- Omicron would dominate the infection rate in the first few months of 2022 (29 November 2021;[74]).

In two applications, there was a clear deviation between the scenarios of the ncs-tf and the actual events: (i) In April 2021, the number of cases fell despite the easing of restrictions;[75] (ii) In the Omicron wave in 2022, there were fewer hospitalisations than expected in January and February.[76] Case (i) has highlighted the importance of seasonality for the transmission dynamics of SARS-CoV-2; case (ii) is explained by the fact that relatively few older people became infected in January and February 2022. Following the scientific process, these new findings flow into the next scenarios and can thus improve future estimates. Without this scientific background, however, the scenarios were often understood as predictions[72] and the ncs-tf sometimes failed to clearly communicate the added value and limitations of scenarios.

II.3.4 Key scientific findings and contributions to pandemic monitoring

II.3.4.1 Scientific data and analyses

The scientific contributions of the ncs-tf were based on the research and expertise of its members. During the pandemic, ncs-tf scientists conducted research on a number of open – or emerging – questions about SARS-CoV-2. Scientific publications can be found on the websites of the individual scientists. The vast majority of research results were financed by external funding or universities. In some cases, research projects were mandated and financed by the authorities (e.g. [77, 78, 79]).

In the ncs-tf, members from various scientific disciplines contributed their perspectives and together developed a consolidated scientific perspective on policy-relevant issues. The ncs-tf developed 96 policy briefs, 34 scientific updates and 46 epidemiological updates. These publications shed light on and analysed a wide range of topics (cf. Annex A.4). As part of this monitoring, the ncs-tf has estimated the reproduction figure since 4 May 2020[11] and provided daily updated information on the status of the pandemic on various dashboards. Information about SARS-CoV-2 variants was presented daily on NextStrain[80] and covSPECTRUM[81].

Supporting the authorities in monitoring the pandemic situation requires stable and reliable financing of data collection and access to the relevant data. As part of the data collection process, for example, from March 2021 onwards the genetic monitoring of SARS-CoV-2 was guaranteed by an order from the FOPH until March 2022.[82] Work is currently under way to continue this programme beyond 31 March 2022; however, the scientists involved have not yet been given a specific mandate (as of 29 March 2022). A continuation of the immunological monitoring programmes is also being prepared. There are currently no plans for a cohort (as of 29 March 2022). Data access was gradually expanded, enabling more detailed pandemic monitoring.[81] However, the exchange of data has not yet been fully clarified. For example, at the time of writing this report, the genomes cannot be linked to the hospitalisation status of the associated patients and the contact tracing data is not available anywhere in Switzerland. Systematisation, whereby a scientific advisory body has access to data collected by the authorities and includes an automated exchange of data between the actors, would make the situation much easier in the future.[83]

II.3.4.2 Key scientific topics of the ncs-tf

In the following passage, key topics are discussed, to which the ncs-tf has contributed scientific expertise.

Infection prevention and control: transmission paths, aerosols and masks

In order to control a pandemic, it is essential to know the transmission chains of the pathogen and to be able to estimate the relative importance of different transmission chains. One of the ten expert groups of the ncs-tf focused on this topic of infection prevention and control. An important question at the beginning of the pandemic was the relative importance of transmission by surfaces (e.g. hands), droplets and aerosols. In its policy brief dated June 4, 2020, the ncs-tf stated that SARS-CoV-2 can also be transmitted by aerosols, especially in poorly ventilated rooms.[84] The ncs-tf emphasised that the ventilation of closed interiors is an important measure for preventing transmission. The aerosols document was updated on 29 October 2020 with new findings on the role of aerosols.[85] The advantages of using CO_2 sensors were presented in the policy brief dated 19 April 2021.[86]

Masks as a means of preventing infection have played a key role in the ncs-tf's activities since it was founded in April 2020. On 20 April 2020, the ncs-tf published its assessment that the risk-benefit ratio largely supports the general wearing of masks in conjunction with hand hygiene if the required distance cannot be maintained.[21] Criteria for community masks were also created, which were particularly important at times when masks were scarce.[87] The importance of masks was discussed in detail in further documents.[20, 88] Experts from the ncs-tf worked on methods to counter the shortage of medical masks at the start of the pandemic by storing them appropriately and using them for longer periods.[89,90]

The ncs-tf also contributed expertise to infection prevention and control, with the aim of supporting the development of public health campaigns. In the autumn of 2020, experts from the ncs-tf highlighted the importance of clear communication on the implementation of the measures.[91] This was repeatedly emphasised, also in view of the 2020[92] festive season.

Infection prevention and control in the healthcare sector

In its first policy brief in May 2020[93], the ncs-tf addressed the topic of infection prevention and control and its implications for the dignified lives of elderly and very elderly people. Discussions with other institutions and direct carers helped to maintain self-determination and dignity coupled with high-quality care following the initial wave in the spring of 2020. Health risks, for example in different age groups, and new possibilities through therapies and vaccinations were continuously evaluated by the ncs-tf and were factored into overall considerations. This was an important tool, especially for planning in acute care hospitals over large parts of the epidemic.

Schools

In contrast to many countries, schools in Switzerland remained largely open. There are hardly any countries that have had fewer school closures.[94] On 14 June 2020, the ncs-tf first drew attention to the negative effects of school closures on mental health.[29] This aspect was also emphasised in later

publications.[95] In view of the negative effects of school closures, the focus of the ncs-tf was on the "last to close, first to open" approach. This approach refers to the strategy of closing schools only when all other opportunities for reducing contact have been exhausted and of re-opening them first when the epidemic situation improves. The ncs-tf recommended safe school operation – and thus open schools – with protection plans that take into account the importance of aerosol transmission. In a number of other documents, the ncs-tf presented the emerging insights on SARS-CoV-2 infections in children and effective protection plans. Specifically, the ncs-tf discussed the role of testing and quarantine in children ([96]; this document was later revised), measures to reduce infection in schools[97] and the role of children and adolescents in the SARS-CoV-2 pandemic[98]. Scientific updates and statements at press briefings by specialists also drew attention to the consequences of the pandemic for children and young people in the area of mental health, emphasised the positive effect of protective measures in schools and discussed the adaptation of protective measures to the school situation and level.[46, 64, 97, 99, 100] An exchange was also held with the Swiss Society of Paediatrics and *Kinderärzte Schweiz* (25 October 2021 and 13 December 2021) , resulting in a joint statement[64]. The ncs-tf was also in dialogue with the EDK on this topic. In particular, the Public Health Expert Group and individual ncs-tf experts were in regular contact with the EDK.

Strategy to avoid a second epidemic wave

With a view to a possible second epidemic wave of SARS-CoV-2 in the autumn and winter of 2020/21, the ncs-tf proposed a scientific strategy to respond to epidemic waves early and effectively. This strategy was published on 8 June 2020.[20] Key aspects included: (1) respond early in the event of epidemic waves, (2) implement interventions within an appropriate geographical framework, (3) introduce specific measures in the correct order, and (4) define responsibilities in good time and clarify financial issues. With regard to point (3), the ncs-tf proposed on 8 June 2020 [20] to consider masks as an effective measure in places where there is a high transmission potential and social distancing is difficult (e.g. in shops and public transport). The risk of major events was also highlighted.

Assessments regarding the imminent second epidemic wave

The ncs-tf repeatedly referred to the imminent second epidemic wave (detailed documentation in Appendix A.5). On 3 July 2020, the ncs-tf issued an emergency notification due to rapidly increasing numbers of infections[30] and advised people to avoid situations with a high risk of transmission and to comply with the already known protective measures. In September and early October, the ncs-tf shared with the mandators the assessment that the situation at that time posed a risk of a resurgence of the epidemic with negative consequences for health, the economy and society (see also Appendix A.5). From 9 October 2020 onwards, assessments of the rise of the epidemic wave and the resulting risk for individuals and the healthcare system were regularly published on the ncs-tf website.

The ncs-tf also analysed the evolution of the burden on the healthcare system and, in particular, the intensive care units. It pointed out that due to the large number of infections, the capacity of the intensive care units would be insufficient to maintain the standards of medical care. A retrospective analysis[101] of

hospital admissions and referrals to intensive care units in January 2021 showed that, during the peak value of the second epidemic wave, the proportion of hospitalised patients receiving intensive care fell by around a factor of two. One plausible reason for the decline is that the capacity of the intensive care units was insufficient. A second consequence of the heavy burden on the healthcare system was that around 19,000 procedures requiring intensive care were postponed.[103]

The SwissCovid app and proximity tracing

Within the ncs-tf there was a close dialogue between the development of digital epidemiological methods and other scientific aspects of the pandemic response. The idea of an app that informs users about a potential risk of infection and protects their privacy was launched by experts from EPFL and ETH Zurich before the ncs-tf was founded and developed in collaboration with the FOPH, the Federal Office of Information Technology and Telecommunication (FOITT) and the private company Ubique.[102] Several of the key experts involved became members of the ncs-tf and worked together in a separate expert group focused on digital epidemiology.

The idea behind Digital Proximity Tracing is to minimise the social and economic costs of the pandemic response by notifying people if they have been exposed to a possible infection. This allows people with an increased risk of infection to get tested quickly and limit contact with others. The system developed in Switzerland respects privacy. The underlying protocol (DP-3T, "decentralised, privacy-preserving proximity tracing") was adopted by Google and Apple. The experts from Switzerland were closely involved in the design and development of a system at the European level and played a key role in the conceptualisation and development of NotifyMe, a decentralised check-in system for meetings and events.

The collaboration of these experts in the ncs-tf made it possible to embed digital proximity tracing in a general scientific analysis of the TTIQ system, i.e. in the process of testing, contact tracking, isolation, and quarantine. A number of policy briefs analysed digital and conventional methods of TTIQ. [34, 103, 104, 105, 106]

"Community infection approach"

In its policy brief dated 14 September 2020,[28] the ncs-tf analysed the approach proposed by various parties at the time to achieve herd immunity in the population through large-scale infections (the idea of a so-called "community infection approach"). Based on the data on the risk of hospitalisation and mortality following an infection, it became clear that such an approach would entail an extremely high disease burden, would lead to major social and economic damage and would take a very long time. At that time, the ncs-tf also evaluated the progress made in vaccine development and came to the conclusion that the prospect of vaccines being approved soon was good, so that an approach involving infecting a large part of the population without immune protection (which would also violate people's right and conflict with your need to be protected against physical harm) would not make sense from this perspective either.

Monitoring of variants of concern (VOC)

From the end of 2020 onwards, new and variants of concern (VOCs) dominated the dynamics of the pandemic. The evolution of such variants had been expected since the outbreak of the pandemic, and the ncs-tf pointed out the necessity of genomic sequencing in its policy briefs dated 20 April 2020[107] and 15 June 2020 [108]. On 1 March 2021, the FOPH launched the national SARS-CoV-2 monitoring programme[78], which was implemented in cooperation with the National Centre for Emerging Viral Diseases (NAVI) at the University Hospitals in Geneva, the Swiss Federal Institutes of Technology, the university and private laboratories, the NextStrain platform and the ncs-tf. This programme expires on 31 March 2022. A continuation is planned, but the laboratories involved have not yet been given a specific mandate (as of 29 March 2022).

Alpha

The Alpha variant, which is classified as a variant of concern, was first detected in the UK in September 2020. In mid-December 2020, there was increasing evidence that this variant had a transmission advantage.[109] The ncs-tf informed the FOPH and GS-FDHA on 19 December 2020. On 22 December 2020, the ncs-tf shared its assessment of the spread of Alpha and the expected consequences for epidemiological events.[110] On 29 December 2020, the ncs-tf explained at the press briefing its assumption that this variant would dominate the infection rate in Switzerland in March and that the number of cases could increase.[32] The number of cases increased from mid-February and the epidemiological wave reached a peak in April 2021, with around 80 hospitalisations per day and 250 people in intensive care.[8]In April, the epidemic wave subsided, contrary to expectations from the ncs-tf scenarios ([76]; section II.3.3), partly thanks to seasonal effects.

Delta

The Delta variant, originally described in India and classified as a variant of concern, was first identified in Switzerland in a sequenced sample on 23 April 2021.[111] Due to the increasing prevalence of this variant with an increased transmission rate in other countries, such as India and the UK, the ncs-tf pointed out the risk of an epidemic wave with the Delta variant in its policy brief dated 29 June 2021[74].

With a transmission advantage over Alpha, Delta also spread rapidly in Switzerland and led to some severe cases, particularly among the non-immune population. On 17 August 2021[46] and 24 August 2021[41], for example, the ncs-tf drew attention to the risk of a severe strain on hospitals. The fourth epidemic wave peaked at the end of August with around 80 hospitalisations per day (moving 7-day average). At its peak, around 280 patients were in intensive care. The number of cases and the strain on intensive care units decreased from the second week of September onwards. At the end of December 2021, there was another Delta wave with 315 patients in intensive care.[8]

Furthermore, the future number of expected hospitalisations was estimated in July 2020 based on hospitalisation and vaccination data from the FOPH and seroprevalence data from Geneva.[112] The ncs-tf estimated that the expected disease burden would be similar to or greater than the total disease burden over the course of the pandemic so far if a large proportion of the currently non-immune people were infected and no further vaccinations were given. At the time of the estimates (July 2021), there were cumulatively around 30,000 COVID-19 hospitalisations. According to the data available as of 28 March 2022, there were cumulatively around 50,000 hospitalisations.[8] This means that around two-thirds of the maximum potential disease burden expected in July 2021 (in the hypothetical extreme case that *all* non-immune people would be infected and *no one* would have been vaccinated any more) had occurred by the end of March 2022. Since July 2021, 17% of people in Switzerland have been vaccinated with a first dose and thus protected against severe complications.[8]

Omicron

On 24 November 2021, a new variant B.1.1.529 was identified in South Africa. After information was received from South Africa on 25 November, which indicated that this variant could have a lasting effect on epidemiological events in Switzerland, the ncs-tf immediately contacted the FOPH and the GS-FDHA. On 26 November, the WHO classified it as a variant of concern because it exhibited increased transmissibility and the ability to bypass the immune response. At the press briefing on 29 November, the ncs-tf[75] announced that Delta could be replaced by Omicron after Christmas 2021.

On 20 December 2021, the ncs-tf calculated based on scenarios[48] that at the beginning of January 2022, around 20,000 confirmed cases of infection with SARS-CoV-2 could be reached and exceeded. On 1 January 2022, around 20,400 confirmed cases (moving 7-day average) were reported.[8] Updated calculations from 11 January 2022[113] showed that a large proportion of the Swiss population could become infected before the epidemic wave subsides due to increasing immunity among the population. This would be the first time during the pandemic that a wave subsides due to immunity rather than measures, behavioural adjustments or seasonal fluctuations. Around 10% of the Swiss population was infected each week over a period of several weeks at the start of 2022.[114] The actual strain on hospitals was lower than that expected by the ncs-tf, which had been calculated on the basis of international data (see also section II.3.3). In total, around 9,600 people have been hospitalised since the beginning of January 2022 (data as of 28 March 2022).[8]

Third vaccine dose

Monitoring immunity in the population is important for the sustained control of disease waves and the maintenance of immunity in the population. On 10 June 2021, the ncs-tf highlighted the crucial importance of data on maintaining immunity after infection and vaccination in various risk groups[47] and encouraged the creation of a detailed immune monitoring system. In a document dated 15 February 2022[5], the ncs-tf explained that such monitoring of antibody neutralisation and T cells is key to assessing the need for booster vaccinations.

A possible booster vaccination was first discussed by the ncs-tf in early summer 2021 and anticipated for the autumn of 2021. In a document dated 10 June 2021[47], it was explained that booster vaccinations are important for people at increased risk of severe COVID-19, in order to reduce the number of serious illnesses and that booster vaccinations for adults in general can help to limit the overall circulation of the virus. The scientific update of 7 September 2021[115] pointed to a decrease in protection against infections in the general population and in protection against severe complications among the elderly. In September 2021, the ncs-tf calculated the number of hospitalisations that could be avoided by booster vaccination using data from Israel together with Switzerland-wide hospitalisation and vaccination data and seroprevalence data from Geneva. These calculations were carried out with the FOPH, the FCV and the GS-FDHA on 21 September and published on 26 October 2021.[116] In the scientific update dated 26 October 2021, the ncs-tf showed, based on data from Switzerland, that protection against severe complications in older population groups had also decreased in Switzerland.[117] The ncs-tf presented further data on the decrease in vaccination protection and the advantages of a third vaccination in the scientific update dated 23 November 2021.[118]

II.3.4.3 Assessment of strategies proposed by the ncs-tf for dealing with SARS-CoV-2

While the ncs-tf dealt with the scientific aspects of the pandemic, it followed a consistent and clear policy with regard to the proposed strategy. The core idea of this policy was that (i) it already became clear soon after the onset of the pandemic that a vaccination against COVID-19 would be likely to be developed soon, and (ii) it would be worthwhile for health, social and economic reasons to keep infections as low as possible until people can protect themselves with a vaccine. Such an approach allows most people to get vaccinated before they become infected. In order to reduce the number of infections, the ncs-tf focused on infection prevention instruments (such as masks, social distancing and other measures to reduce aerosol transmission and improve hygiene) as well as measures to reduce contact with others. It did not make any decisions itself, but was able to support the political decision-making process by providing scientific findings.

An important question is how high the costs and benefits of this strategy are and how well the overall strategy performs compared to other conceivable approaches. This question is key to dealing with the pandemic and remains relevant as preparation for future pandemics. Of particular interest – also for the public – is the effectiveness of individual measures to reduce contact with others: What did it mean for the epidemiological situation in Switzerland that schools remained largely open during the pandemic? How effective were the restaurant closures? There will be no easy answers to these questions. The impact of a particular measure (e.g. the closure of a particular sector) depends heavily on the context. Important aspects here include, for example, other measures taken at that time, acceptance and implementation of the measures in force, the time of year, the immunity of the population and the dominant variant of the virus at that time. Nevertheless, further data and analyses will help us to continuously improve our understanding of which measures are most effective and which measures have the best cost-benefit ratio. Scientific reviews will play an important role here – analyses that systematically and impartially take into account all relevant data available.

However, this document does not focus on such analyses for assessing different strategies and for assessing different measures within a strategy. Ideally, they are carried out by experts who were not themselves involved in advising decision-makers or developing strategies, and therefore have the necessary degree of impartiality.

Sources

Appendix

A.1 Mandates

A.2 List of experts in the ncs-tf with joining date

First name	Last name	Joined on	Left on	Expert group (/expertise)	Different roles over time
Martin	Ackermann	02/04/2020	31/03/2022	Microbiology	President, Vice-President, Advisory Panel, Member
Christian	Althaus	03/04/2020	05/01/2021	Data & Modelling	Member
Martin	Bachmann	09/04/2020	30/06/2020	Vaccinology	Expert Group Chair
Manuel	Battegay	02/04/2020	12/03/2021	Clinical Care	Vice-President, Expert Group Chair
Sonja	Baumann	15/12/2020	31/07/2021	Clinical Care	Member
Christine	Baumgartner	13/11/2020	31/07/2021	Clinical Care	Member
Eva Maria	Belser	19/05/2020	31/07/2021	ELSI	Member
Gaby	Bieri	15/12/2020	31/07/2021	Clinical Care	Member
Stefan	Boes	17/10/2020	31/07/2021	Economics	Member
Sebastian	Bonhoeffer	02/04/2020	31/07/2021	Data & Modelling	Advisory Panel, Expert Group Chair
Marius	Brülhart	03/04/2020	31/03/2022	Economics	Expert Group Chair, Member
Aymo	Brunetti	17/10/2020	31/07/2021	Economics	Member
Monika	Buetler	02/04/2020	31/07/2021	Economics	Vice-President, Advisory Panel, Expert Group Chair
Edouard	Bugnion	02/04/2020	31/03/2022	Digital Epidemiology	Advisory Panel, Expert Group Chair
Claudine	Burton-Jeangros	03/04/2020	31/07/2021	ELSI	Member
Thierry	Calandra	05/04/2020	31/07/2021	Clinical Care	Member
Alexandra	Calmy	03/04/2020	31/03/2022	Clinical Care	Expert Group Chair, Member
Daniel	Candinas	03/04/2020	31/07/2021	Infection Prevention & Control	Member
Luca	Crivelli	03/04/2020	31/12/2020	Economics	Member
Valerie	D'Acrement	19/02/2021	11/05/2021	Public Health	Member

Damien	De Courten	03/04/2020	31/07/2021	Infection Prevention & Control	Member
Dominique	De Quervain	19/05/2020	16/04/2021	Public Health	Member
Jean-Romain	Delaloye	03/04/2020	31/07/2021	Infection Prevention & Control	Member
Alain	Di Gallo	21/07/2021	31/03/2022	Mental health	Member
David	Dorn	02/04/2020	31/07/2021	Economics	Member
Matthias	Egger	02/04/2020	31/12/2020	Data & Modelling	President, Member
Jaques	Fellay	03/04/2020	31/03/2022	Data & Modelling	Member
Antoine	Flahault	03/04/2020	31/07/2021	Public Health	Member
Thierry	Fumeaux	03/04/2020	31/12/2020	Clinical Care	Expert Group Chair
Grégoire	Gex	15/12/2020	31/07/2021	Clinical Care	Member
Myrona	Goutaki	19/02/2021	31/07/2021	Public Health	Member
Eva	Horvath	16/12/2020	31/07/2021	Clinical Care	Member
Felix	Huber	03/04/2020	31/07/2021	Clinical Care	Member
Samia	Hurst	02/04/2020	31/03/2022	ELSI	Vice-President, Expert Group Chair
Daniel	Jordi	05/04/2020	31/07/2021	Infection Prevention & Control	Member
Laurent	Kaiser	03/04/2020	31/03/2022	Diagnostics & Testing	Member
Urs	Karrer	09/04/2020	31/03/2022	Immunology	Vice-president, Member
Olivia	Keiser	03/04/2020	31/07/2021	Data & Modelling	Member
Ueli	Kihm	04/02/2020	20/04/2020	Virology	Advisory Board, Expert Group Chair
Manfred	Kopf	09/04/2020	31/07/2021	Immunology	Member
Arnaud	L'Huillier	21/07/2021	31/03/2022	Paediatrics	Member
Rafael	Lalive	03/04/2020	31/07/2021	Economics	Member
Esther	Linka	19/05/2020	31/12/2020	Public Health	Member

Nicola	Low	03/04/2020	31/03/2022	Public Health	Expert Group Co-Chair, Member
Pascal	Mahon	19/05/2020	31/07/2021	ELSI	Member
Oriol	Manuel	03/04/2020	31/07/2021	Clinical Care	Member
Mirko	Merboldt	03/04/2020	31/07/2021	Exchange Platform	Member
César	Metzger	03/04/2020	31/07/2021	Diagnostics & Testing	Member
Suerie	Moon	03/04/2020	31/07/2021	ELSI	Member
Andreas	Mortensen	03/04/2020	31/07/2021	Infection Prevention & Control	Member
Nicolas	Müller	03/04/2020	31/07/2021	Clinical Care	Member
Christian	Münz	17/09/2020	31/03/2022	Immunology	Expert Group Chair
Richard	Neher	05/04/2020	31/03/2022	Data & Modelling	Member
Annette	Oxenius	02/04/2020	31/07/2021	Immunology	Advisory Panel
Hans	Pargger	15/01/2021	31/03/2022	Clinical Care	Member
Sophie	Pautex	13/11/2020	31/07/2021	Clinical Care	Member
Melissa	Penny	03/04/2020	31/07/2021	Data & Modelling	Member
Nicole	Probst-Hensch	03/04/2020	31/12/2020	Public Health	Member
Jêrome	Pugin	03/04/2020	30/06/2020	Clinical Care	Member
Milo	Puhan	03/04/2020	31/07/2021	Public Health	Member
Roland	Regös	20/04/2021	31/03/2022	Data & Modelling	Member
Anja	Renner	15/12/2020	31/07/2021	Clinical Care	Member
René	Rossi	03/04/2020	31/07/2021	Infection Prevention & Control	Member
Marcel	Salathé	02/04/2020	19/02/2021	Digital Epidemiology	Expert Group Chair, Member
Federica	Sallusto	09/04/2020	31/07/2021	Immunology	Member
Felix	Schürmann	03/04/2020	31/07/2021	Exchange Platform	Member

Eleonora	Secchi	19/05/2020	31/07/2021	Exchange Platform	Member
Claire-Anne	Siegrist	03/04/2020	03/03/2021	Vaccinology	Advisory Panel
Michael	Simon	19/05/2020	31/07/2021	Public Health	Member
Daniel	Speiser	03/04/2020	31/07/2021	Immunology	Expert Group Chair
Tanja	Stadler	03/04/2020	31/03/2022	Data & Modelling	President, Expert Group Chair
Roman	Stocker	02/04/2020	31/03/2022	Exchange Platform	Expert Group Chair
Markus	Stoffel	03/04/2020	31/07/2021	Diagnostics & Testing	Member
Sven	Streit	15/12/2020	31/03/2022	Clinical Care	Expert Group Co-Chair, Member
Silvia	Stringhini	25/02/2021	31/03/2022	Public Health	Member
Jan-Egbert	Sturm	03/04/2020	31/03/2022	Economics	Vice-President, Expert Group Chair
Suzanne	Suggs	03/04/2020	31/03/2022	Public Health	Expert Group Co-Chair, Member
Marcel	Tanner	02/04/2020	31/12/2020	Marcel Tanner	Advisory Panel, Expert Group Chair
Volker	Thiel	02/04/2020	31/03/2022	Coronaviruses	Advisory Panel, Member
Alexandra	Trkola	03/04/2020	31/07/2021	Diagnostics & Testing	Member
Carmela	Troncoso	05/04/2020	31/07/2021	Digital Epidemiology	Member
Didier	Trono	02/04/2020	31/03/2022	Diagnostics & Testing	Expert Group Chair
Sarah	Tschudin-Sutter	02/04/2020	31/03/2022	Infection Prevention & Control	Expert Group Chair
Thomas	Van Boeckel	03/04/2020	31/07/2021	Data & Modelling	Member
Effy	Vayena	03/04/2020	31/07/2021	Digital Epidemiology	Member
Viktor	Von Wyl	03/04/2020	31/07/2021	Digital Epidemiology	Member
Danielle	Vuichard Gysin	05/04/2020	30/06/2020	Infection Prevention & Control	Member
Beatrice	Weder Di Mauro	03/04/2020	31/07/2021	Economics	Member
Peter	Wick	03/04/2020	31/07/2021	Infection Prevention & Control	Member

Margarethe	Wiedenmann	09/04/2020	31/07/2021	Public Health	Member
Stefan	Wolter	30/12/2020	31/03/2022	Public Health	Member
Conny	Wunsch	16/02/2021	31/07/2021	Economics	Member
Walter	Zingg	19/05/2020	31/07/2021	Infection Prevention & Control	Member

A.3 Agenda of Expert Group Chairs meetings

- April and May 2020 every Monday, Wednesday and Friday
- from June 2020 onwards, every Wednesday and Friday

Monday, 06.04.2020

- **Expert group compositions (ME, others)**
- **Outlook (ME)**

Wednesday, 08.04.2020

- **Welcome and brief introduction of guests and Chairs of the Expert Groups (ME)**
    - Lukas Bruhin - Leiter Krisenstab des Bundesrat zur Bewältigung der Corona Krise (KSBC), General Secretariat EDI
    - Martina Moll - Leiterin Projekteil Forschung, Krisenstab des Bundesrat zur Bewältigung der Corona Krise (KSBC), General Secretariat EDI
    - Brigitte Meier - Leiterin Biomedizin, BAG
    - Brief introduction of Chairs of Expert Groups (ME)
- **Update on ncs-tf activities (ME)**
- **Update on Topic of the week: Transition Strategies**
    - Introduction and questions to Expert groups (MA)
    - Update on Digital Proximity Tracing (MS)
    - Input from guests, general discussion
    - Departure of the guests
- **In depth discussion of topic of the week NSC-TF only - Moderator MA**
    - Public health group
    - Data modelling group
- **Any other business & summary and next steps (ME)**

Monday, 13.04.2020

- **Welcome and review of last week (ME, MA, SB)**
- **Update on exchange with Krisenstab and priorities for next week**
    - Introduction by ME, then general Discussion
- **Updates from expert groups (moderated by MA)**
    - PH group: update on meta-analysis of asymptomatic infections (NL)
    - Other updates
- **Any other business & next steps (ME)**

Wednesday, 15.04.2020

- **Welcome** (ME)
- **Organizational aspects**
    - Interaction with FOPH/BAG (ME)
    - Platform, uploading documents (SB)

    - Coordination support (MA)
    - Meeting structure, advisory board meetings (ME)
- **Science updates**
    - Serology (DT, ME)
    - International perspective on transition strategies (RS)
- **Updates from expert groups**
- **Summary & next steps** (ME)

Friday, 17.04.2020

- **Welcome** (ME)
- **Organizational aspects**
    - Overview, update from meeting with Krisenstab (ME)
    - Requests from BAG and GDK, distributing questions (MA)
- **Science updates**
    - Can children be vectors? Preparation of additional analysis, update from Leopoldina (MT, RS)
    - Infection prevention and the role of hand disinfection in public spaces (MT)
- **Updates from expert groups**
    - All expert groups, starting with Public Health

Monday, 20.04.2020

- **Welcome** (ME)
- **Organizational aspects**
    - Overview over questions from FOPH and GDK (MA)
- **Science updates**
    - Upcoming policy brief: serological testing strategies (ME)
    - Upcoming policy brief: transmission of SARS-CoV-2 to and from children (RS, MT, SH)
    - Upcoming policy brief: estimating the fraction of asymptomatic cases (NL)
    - Update about the dynamics of the epidemic in Switzerland (SB/Data and Modeling group)
- **Updates from expert groups**

Friday, 24.04.2020

- **Welcome (ME)**
- **Updates**
    - Update meeting Krisenstab (ME)
    - Declarations of Conflicts of interest (ME)
    - Policy brief on 10-20 year old (MT, RS, SH)
- **D-3: testing tracing quarantining (SB, MT, DT, others)**
- **Updates from expert groups**

Wednesday, 29.04.2020

Guests:

- Lukas Bruhin (at least part of the meeting)
- Seraina Grünig (GDK)
- also invited Martin Vetterli (response pending)
- **Welcome** (ME)
- **Updates**
    - Today's announcement about release of measures; epidemiological considerations (ME, SB)
    - Making policy briefs available (ME)
    - Requests from media, official organizations and individuals (ST, all)
    - Conflicts of interest (ME)
    - Testing tracing quarantining – update (MT, SB, DT others)
- **Updates from expert groups**

Friday, 01.05.2020

- **Welcome** (ME)
- **Updates**
    - Rapid systematic reviews (ME)
    - Interaction with FOPH, transfer of data (SB, ME)
    - Testing tracing quarantining – update (MT, SB, DT, MA, others)
- **Updates from expert groups**

Monday, 04.05.2020

- **Updates**
    - Monitoring, scenarios in the development of Re (SB)
    - Testing tracing quarantining – update (MT, SB, DT, others)
    - Quarantining – economic and legal considerations (MB, SH, others)
- **Updates from expert groups**

Wednesday, 06.05.2020

- **Welcome** (ME)
- **Updates**
    - Preview on Krisenstab meeting (ME)
    - Vaccination, update on working group 'vaccination' in the FOPH (DS, others)
    - Testing tracing quarantining – process (MA, NL, MT, others)
    - Testing and quarantining – economic and legal considerations (MB, SH, others)
- **Updates from expert groups**

Friday, 08.05.2020

- TTQ – updates and identifying action points (MA, MB, many others)
- Status of upcoming policy briefs, quick update (MT, SB, maybe others)

- Workshop with FOPH and KSBC (MC, maybe others)
- Treatment strategies for COVID-19: how can we support coordination and evaluation (MB, maybe others)

Wednesday, 13.05.2020

- **Information and Discussion**
    - Krisenstab meeting tomorrow morning (MA)
    - Workshop with Krisenstab and FOPH tomorrow afternoon (MA)
    - Monitoring and forecasting of the epidemic (SB)
    - TTIQ (MS)
    - Response to an increase in cases (MT)
    - Communication (SS)
- **Updates from expert groups**

Sunday, 24.05.2020

- Review Monday's agenda and confirm participation (in Bern or Skype)
- Goal(s) of the workshop.
- Main topics for Monday for a meeting with FOPH:
    - Evidence base (SS)
    - The communication plan(s) (KSBC & FOPH)
    - Topics, objectives, target populations, and points to stress in communications (ncs-tf in dialogue with KSBC & FOPH)
    - Understand what FOPH's plans are. Ask and stress specifics about
        - Preventing increase in number of cases
        - TTIQ and App use
        - ongoing updates & reinforcements
        - monitoring and revisions
        - SwissAlert as more public platform
        - Identify topics that need to be communicated soon
        - Anything missing?

Wednesday, 27.05.2020

- **Information and Discussion**
    - Lay Summaries (MC)
    - New policy briefs (moderated by ME)
    - Update from the GDK/Cantons (MA, with Kathrin Huber)
    - Debriefing: Workshop with Krisenstab and FOPH on communication (SS)
    - Brainstorming on Digitalization (ME)
    - Input from Martin Veterli (if possible) on DigitalSwitzerland – to be discussed during the KSBC meeting
    - COVID-19 and mental health – input DQ (Neuroscientist at University of Basel)
- **Updates from expert groups**

Friday, 29.05.2020

- **Information**
  - Debriefing yesterday's KSBC meeting (ME)
  - Outlook on upcoming discussion on the future of the task force (ME)
  - Additions to the task force (ME)
  - Upcoming Policy Briefs (ME, others)
- **Information and Discussion**
  - Update from the GDK/Cantons (MA)
  - Upcoming meeting at FOPH on testing (MA)
- **Updates from expert groups**

Wednesday, 03.06.2020

- **Welcome** (ME)
- **Information and Discussion**
  - Info: Publication of declaration of conflict of interests and Task Force's mandate (MC)
  - Info: Meeting to discuss the future of the NCS-TC (ME)
  - Brief update on status of upcoming Policy Briefs (ME)
  - Debriefing: Workshop with FOPH on Test Strategy (moderated by MA)
  - Discussion on policy brief "Strategy to react to substantial increases in the numbers of SARS-CoV-2 in Switzerland" (moderated by MA)
- **Updates from expert groups**

Friday, 05.06.2020

- **Welcome** (MA (ME will not be able to participate))
- **Information and Discussion**
  - Strategy to react to substantial increases in the numbers of SARS-CoV-2 in Switzerland – discussion of key points and preparation of document (MA, everyone)
  - TITQ, testing: current state and new developments (MT, EB, others)
- **Updates from expert groups**
- **Conclusions and outlook** (MA)

Friday, 12.06.2020

- **Information and Discussion**
  - Next steps following the meeting at SBFI, letter (ME)
  - Coverage in the media (ME, MS, others)
- **Updates from expert groups**

Wednesday, 17.06.2020

- **Information and Discussion**
  - end of the 'extraordinary situation' – timing of decisions (MA)

    - KSBC meeting tomorrow (MA)
    - digital proximity tracing
    - monitoring the epidemic, new estimates of Re (SB)
- **Updates from expert groups**

Friday, 19.06.2020

Information and Discussion

- debriefing of yesterday's KSBC-meeting (ME)
- Future of the ncs-tf (ME)
- Media: maintaining presence and diversity (ME)
- distribution of resources among countries (ME)

Updates from expert groups

Wednesday, 24.06.2020

Information and Discussion

- documents FOPH/KSBC
- Revising policy briefs (MA)
- Policy brief on border (NL)
- interest of SRF in ncs-tf (SB)

Updates from expert groups

Friday, 26.06.2020

Information and Discussion

- Situation in Switzerland, brief overview and discussion (ME, SB, others)
- Media presence (ME)
- Future of the ncs-tf, link to FOPH (MA)
- interest of SRF in ncs-tf (MA, SB)

Updates from expert groups

Monday, 29.06.2020

Special meeting: increase in case numbers in Switzerland

Wednesday, 01.07.2020

SRF present from the beginning

Welcome (MA)

Information and Discussion

- Situation in Switzerland (SB, others)
- Contact tracing data (SB, SH, others)
- Policy brief on masks (ST, RS)

Updates from expert groups

SRF leaves

Varia (MA)

Friday, 03.07.2020

Information and Discussion

- Future ncs-tf (ME, MA)
- Case numbers, testing and Re in Switzerland - overview (SB)
- Contact tracing data (SB, MA)
- new ordinance on quarantine when entering Switzerland from abroad: overview and comparison to our policy brief (MT); implications for health care workers (MB).
- stocks and supply of drugs in Switzerland (MB)

Updates from expert groups

Wednesday, 08.07.2020

Information and Discussion

- future ncs-tf: state of the discussion (MA)
- current epidemiological situation in Switzerland (SB)
- invitation procedure FOPH (MA)

Updates from expert groups

Friday, 10.07.2020

Information and Discussion

- future ncs-tf: state of the discussion (MA, ME, MT, all)
- 1:30pm: Michael Hengartner and Yves Flückiger will join
- current epidemiological situation in Switzerland, including update from the army (SB)
- invitation procedure FOPH

Updates from expert groups

Wednesday, 15.07.2020

Information and Discussion

- New mandate and organization of ncs-tf (MA, ME, others)
- Sentinella populations (MT)
- Epidemiological situation in Switzerland (SB)
- Situation at the borders, meeting with FOPH (MA, NL, MT, others)

Updates from expert groups

Friday, 17.07.2020

Information and Discussion

- reorganization of the ncs-tf – timing (MA, ME)
- contact tracing data (ME)
- phone call with Stefan Kuster (MA)
- Meeting FOPH on borders (MA, MT, others)
- Questions from GDK/VKS (MA)
- overview policy briefs, table (MA)

- request from FOPH, large gatherings (MA)

Updates from expert groups

Wednesday, 22.07.2020

Information

- introduction of new Task Force Coordinator (CB)

Information and Discussion

- yesterday's meeting at FOPH (MT, NL, others)
- vaccination development in Switzerland (DS)

Updates from expert groups

Friday, 24.07.2020

Information and Discussion

- BAG vaccine procurement (DS)
- Data access (SB)
- Testing strategy (VT)
- organization of the ncs-tf (MA)

Updates from expert groups

Friday, 31.07.2020

Information and Discussion

- meeting with GDK, update (MA)
- epidemiological situation in Switzerland (SB)
- vaccine trials (MB)
- coordination media request (CB)

Updates from expert groups

Conclusions and outlook (MA)

Wednesday, 05.08.2020

Information and Discussion

- strategy, narrative, communication – meeting with FOPH/GDK/EDI? (MA, others)
- vaccine trial (MB)
- "Digital Proximity Tracing - The View from Economics" update (JS)
- new PB borders (MT)

Updates from expert groups

Friday, 07.08.2020

Information and Discussion

- narrative, strategy (MA)
- media work (MA, FS, others)
- documents for federal government (MA)

Updates from expert group

Wednesday, 12.08.2020

- Potential increase in case numbers (SB)
- Updated policy brief on children and adolescents (MW)
- Strategy brief update (MA)

Friday, 14.08.2020

- Media, role of ncs-tf (MA, others)
- Strategy PB (MA)
- Letter / Meeting Federal Council (MB)
- Borders (MT)

Wednesday, 19.08.2020

- Meeting with federal council and update politics (MB, MA)
- Media and communication (MA)
- Drug evaluation (MB)
- PB pregnant women (SS)
- Access of confidential folder on platform (MA/CB)
- Importance of lay summaries and new upcoming Website structure (CB)
- Emergent topics (SB)

Friday, 21.08.2020

- Communication support (MA)
- Active communication (SS and others)
- FOPH - data and lookback (SB)
- FOPH meetings (MA)
- Meeting with FC Alain Berset (MA)
- TF management and organization (MA, MB)

Wednesday, 26.08.2020

- Immunity to SARS-CoV-2 PB (DS)
- Data situation (MA, SB)
- Questions from cantonal doctors (MA)
- Coronavirus skeptics (MT)
- Policy on testing in children (NL)
- Upcoming meeting schedule FOPH (MA)
- Topics and attendance FOPH meeting
- **Monday with FOPH, 31.08 13:15 in Bern** (MA)
    - topics suggested by FOPH so far:
    - Besprechung epidemiologische Lage
    - Information über die Umsetzung des Datenaustausches

    - Auswirkung der Pandemie auf die Gesellschaft

Wednesday, 02.09.2020

- Debriefing FOPH meeting last Monday (MA, others)
- Statements from ncs-tf – large gatherings, current situation (MA, MB, MB, others)
- Analysis about age distribution - request from BAG (MA, others)
- Topics for discussion with A. Lévy (MA, others)
- Friday meetings (MA, others)
- Expert groups introspection (MA)
- Upcoming Policy Briefs (MA)

Wednesday, 09.09.2020

- Dashboard (SB)
- Rapid tests (DT)
- Topics for Monday meeting at FOPH (MA)
    - Overview Public Health and epidemiological situation
    - Data exchange
    - Impact of the pandemic on society
    - Testing-strategy/systems, Sentinella, sequencing
    - Videos (SS/GC)
- Meeting about collecting data with FOPH (SH)
- Topics for Friday (MA, MT, MB)

Friday, 11.09.2020

- Role of primary care physicians
- Digital solutions for primary care

Wednesday, 16.09.2020

- Follow-up FOPH meeting (MT, CS, others)
- Video topic list (SS, RS)
- Introduction C. Münz (DS)
- TTIQ KPIs (MS,SB)
- Online Retreat (SH, CB)
- Measures at different academic institutions, Swissuniversities (SH)
- Friday topics (MA)

Friday, 18.09.2020

- discussing the current situation and priorities (MA)
- discussing potential changes to the duration of the quarantine (SB)

Wednesday, 23.09.2020

- Meeting FC A. Berset (SH, MB)
- Meeting tomorrow: erweiterter Steuerungsausschuss (MB, SH)
- Info: C. Kopp in charge for Covid-19 at BAG starting 1.Oct (SH)
- Primary care PB (TF, MB)
- Quarantine (SB), other PBs? (others)
- Preventive measures as PB (MB)
- Austria Task Force (RS)
- Website, Videos (RS)
- Topics for Friday proposition: Nursing homes (MB, SH)
- Topics next Tuesday at FOPH (MB, CB)
    - Übersicht Public Health und Besprechung epidemiologische Lage
    - Data exchange
    - Sentinel System (cohorts or random testing) (MT)
    - Hospital surveillance (Céline Gardiol (BAG), MB, TF, TB, OK)

<u>Friday, 25.09.2020</u>

- Nursing homes (Guest: K. Bally)
- Communication (MA, [*communication support*])

<u>Wednesday, 30.09.2020</u>

- Debriefing FOPH meeting yesterday (MA)
- Sharing SARS-CoV-2 Sequencing data (TS, SB)
- Data from Geneva (NL, SH)
- Outlook vaccines and measures for 2021 (CS, MB)
- Travel quarantine (MA, DT, others)

<u>Wednesday, 07.10.2020</u>

- New digital CT proposal (MS)
- Topics for FOPH meeting next week (MA, others)
- Quarantine update (MA, SB)
- Current situation (MA, others)
- New Policy Briefs 'Transmission' including aerosols (MT, RN)
- Update Surveillance-response (MT)
- Clinical trial platform (MT)
- «Stimmen aus der Bevölkerung» (MT)

<u>Friday, 09.10.2020</u>

- French National Covid-19 Science Task force (DT)
- Scientific evidence system (ME, PA)

<u>Wednesday, 14.10.2020</u>

- Debriefing FOPH meeting (ST, NL, others)

- 'Transmission' PB, including aerosols (MT, RN)
- Update Surveillance-response PB (MT)
- Clinical trial platform (MT)
- «Stimmen aus der Bevölkerung» (MT)
- Press release and letter to Ausschuss (SH, MT, others)

Friday, 16.10.2020

- Outlook vaccines and measures for 2021 (CS, CM, DS, SS, MT, MB, SH, MP)
- Communication (inc. [*communication support*])

Wednesday, 21.10.2020

- Report from meeting with FC/SGK (MA, SH, JS, MB)
- Overall situation and measures (MA)
- ICU capacity (TF)
- Media work, communication (MA, others)
- Topics for FOPH meeting (MA, CB)
    - Übersicht Public Health und Besprechung epidemiologische Lage (FOPH, TF)
    - Contact tracing: 1. Analysis (FOPH)
    - Bestehende Kampagne präsentieren (FOPH)
    - Discussing scenario of a short lockdown (SB, MT)
- Topics for Friday (MA)
    - Communication, videos (SS)

Friday 23.10.2020

- Communication, Videos (SS)
- Response to questions from French Task Force (DT)

Wednesday, 28.10.2020

- Decision FC today, possible scenarios (MA)
- New Report for Friday (MA)
- Debriefing FOPH meeting yesterday (SS, SB, MT, EB)
- Media coordination ([*communication support*], others)
- New meeting schedule ncs-tf? (MA)
- Topics for Friday (MA)

Friday, 30.10.2020

- Scientific assessment of implemented measures (ME, RS, others)
- Communication (SH)

Wednesday, 04.11.2020

- Situation in Switzerland, new Lagebericht (MA, others)

- Report back from meeting with heads of the academic institutions and comms (MA, others)
- Meeting with FC A. Berset today (MA)
- Participation of ncs-tf members in meetings (MA)
- Meeting schedule (MA)
- Economists' open letter (EB)
- PB on scaling considerations for efficient CT (EB)
- Agenda for BAG meeting next week (MA)
  - Epidemiological situation (BAG & ncs-tf)
  - Contact tracing (BAG)
  - Sequencing data (TS)
- Topics for Friday
  - Sotomo: measures and trust (RS, others)

Friday, 06.11.2020

- How to bring case numbers down (SH)
- Sotomo: measures and trust (RS, others)

Friday, 13.11.2020

- Current situation and the new Lagebericht for next week

Wednesday, 18.11.2020

- Situation task force, media, politics (MA, MB, MB, SH)
- Document for next week, content, process (MA)
- Mental health (DQ)
- Online Retreat 02.12.20 (MA, SH, others)
- Topics FOPH meeting, 26.11.20 (MA, others)
  - Übersicht Public Health und Besprechung aktuelle epidemiologische Lage
  - Umfrage zu Compliance und Befindlichkeit der Schweizer Bevölkerung
  - Impfung
  - Vorbereitung Weihnachten / Silvester – Szenarien und Massnahmen
  - Difference between the language regions (SH)
  - Rapid tests (SH)
- Topics for Friday (MA)

Friday, 20.11.2020

- Harassment- and threats management ([*communication support*])
- New document for next week (MA)

Wednesday, 25.11.2020

- Media coordination (MA, [*communication support*])

- Harassment management ([*communication support*])
- Structure Task Force (MA, others)
- Timing scientific update (MA)
- FOPH Meeting tomorrow (MA)
- Topics for Friday (MA)
  - Communication
- Mass testing (RS)

Friday, 27.11.2020

- ncs-tf communication (MA, [*communication support*])

Wednesday, 09.12.2020

- Vaccine and Swissmedic (MT, CS, MB, others)
- Current situation (TS)
- ICU situation (MB, TF)
- Treatments (MB)
- FOPH meeting tomorrow (SH)

Friday, 11.12.2020

- Current situation (SB, others)
- Indicators for transitions (MA, others)
- Regional differences (SH)
- Testing (DT, others)

Wednesday, 16.12.2020

- Debriefing after pdp (MA, others)
- Outlook on transitions (MA, others)
- (Mass) testing (DT, RS)
- Topics for Friday (MA)

Friday, 18.12.2020

- Schools (MT)
- Current situation and scientific update next week (MA)

Wednesday, 23.12.2020

- New SARS-CoV-2 variant (MA, others)
- Hospitals, vaccinating health care personnel (MB)
- Update task force structure (MA)
- Public health PBs update (Children, Transmission, long-term care, mental health) (MT)
- Mass testing Graubünden (SH, others)

Saturday, 26.12.2020

- New SARS-CoV-2 variant (MA, others)
- Role of TF to encourage vaccines (EB, others)

Wednesday, 30.12.2020

- Current epi situation (TS, others)
- Scenarios for mortality (MB)
- Communication about vaccination (SH, SS)
- Threat Letters (MA)
- Topics for Saturday (meeting at 5pm instead of Friday 1pm) (MA)

Saturday, 02.01.2021

- New variant, sequencing results (DT, others)
- Vaccination, timing (MA, others)
- Upcoming documents for FOPH/EDI
    - duration of quarantine after contact tracing – evaluating transmission risk for different strategies (SB).
    - quantifying the effects of non-pharmaceutical interventions (MA).
    - economics perspective on measures (MB)
- Upcoming pdp

Wednesday, 06.01.2021

- Guest: A. Lévy
- Vaccine Q&A (MB, CS)
- Schools (MA, others)
- Scientific update (MA)
- Topics for Friday (MA)
- Topics for meeting with FOPH next week (MA)

Friday, 08.01.2021

- Current situation (MA)
- New variants, epi update (TS)
- Econ Perspective (JS, MB)
- Governance (MB)

Wednesday, 13.01.2021

- Current situation (MA)
- New variants and Epi update (TS)
- Mental health (DQ)
- Community Masks (PW)
- Meeting with FOPH tomorrow 1-3pm (MA)

Wednesday, 20.01.2021

- Task Force structure and upcoming rotations (MA)
- Assessment of measures in schools (MP)
- AstraZeneca-related questions (CS, MT, MB)
- Vaccination execution (EB, DT)
- Genomic surveillance system (TS, DT)
- Community masks (PW)
- FFP2 Masks (ST)
- Topics for Friday (MA)
- Topics for FOPH meeting next week (MA)

Friday, 22.01.2021

- Vaccination modelling (MB)
- Scientific update for next week (MA)

Wednesday, 27.01.2021

- Update current situation and new variants (TS)
- Vaccination modelling (MB, CS)
- Topics for the meeting with FOPH tomorrow (MA)
- What are the reasons for increasing ICU utilization by non-COVID-19 patients (HP)
- Topics for Friday (MA)
    - Guest: FC A. Berset – please submit questions/topics by tonight

Friday, 29.01.2021

- Guest: FC A. Berset

Wednesday, 03.02.2021

- Immunoassay for detecting anti-SARS-CoV-2 antibodies (Guest: S. Maerkl)
- Current situation, new variants (JF)
- WBK-S, Wissenschafts- und Bildungskommission meeting (MB)
- Digital certificates PB (EB, SH)
- Request to FOPH *Minimal essential data set needed to monitor and manage this pandemic from a scientific point of view* (NL)
- Mass testing (NL)
- Scientific update, upcoming topics (MA, NL)

Wednesday, 10.02.2021

- Input for FC on Friday (MA, MP, others)
- Current situation (TS)
- Mass testing (NL)
- Therapies (MB)
- Topics for meeting with FOPH tomorrow (MA) - agenda attached
  - Data on children and schools (SS, RS, OK)

- Vaccination monitoring social aspects (FOPH)
- Topics for Friday

Friday, 12.02.2021
- Children transmission in schools (NL, SS, others)
- Vaccination modelling (MP)

Wednesday, 17.02.2021
- Scenarios (SH, MA)
- PBs on Certificates (EB, SH)

Friday, 19.02.2021
- Senarios, next steps (MA, others)
- Adjustments LEpi / EpiG (EB)

Wednesday, 24.02.2021
- Current situation and scientific update (MA)
- Epidemiological situation (TS)
- Children (SS)
- Excess mortality (SH)
- Topics for Friday (MA)
- Testing (DT)
- Topics FOPH meeting tomorrow (MA)
  - Rapid tests
  - Spring recommendations (FOPH website)
  - Releasing measures after vaccination (e.g. in elderly homes)

Wednesday, 03.03.2021
- Vaccination – scientific discussion (MB and Guest: B. Hirschel)
- WAK and our mandate (MA)
- Current situation and scientific update (MA)
- Epidemiological situation (TS)
- Topics for Friday (MA)

Friday, 05.03.2021
- Testing (Guests: F. Rudolf and U. Kihm)
- Scientific Update (MA)
- Vaccination documents for EDI and FOPH (subgroup)

Wednesday, 10.03.2021
- Current situation (MA)
- Debriefing FDP meeting (SH, others)

- Epidemiological update (TS)
- International update (RS, ST)
- FOPH meeting tomorrow (MA)
- Roll out of Astra Zeneca upon approval (AB)
- Mask recommendations (PW, ST)

Friday 12.03.2021

- Changes in the management team (MA)
- Vaccination, main priorities, task force contributions (MB)

Wednesday, 17.03.2021

- Scientific update and current situation (MA)
- Epidemiological update (TS)
- Publication of vaccination modelling (MA, others)
- Meetings with political parties (MA, others)
- Vaccination discussion update (UK)
- Testing (DT, others)

Friday, 19.03.2021

- International update (RS)
- Scientific update (JS, MP)

Wednesday, 24.03.2021

- Epidemiological situation (TS)
- PB on ventilation / air quality parameters (RS)
- Topics for meeting with FOPH tomorrow (SH)
    - Vaccination modelling (MP)
    - Children/schools (RS, others)
    - Population survey (FOPH)

Friday, 26.03.2021

- Testing meeting with UK (NL)
- Vaccine urgency PB (MB)

Wednesday, 31.03.2021

- Scientific update and current situation (MA)
- Epidemiological update (ST)
- Statement on P1 and other VOC (CM, others)
- Communication of individual experts (SH)

Saturday, 03.04.2021

- Scientific update and current situation (MA, others)

- Vaccination (EB, UK)

Wednesday, 07.04.2021
- Epidemiological situation (JF)
- Vaccinating children (UK, others)
- Topics for meeting with FOPH tomorrow (SH)

Friday, 09.04.2021
- Input for FC: Strategy & challenges after everyone was offered a vaccine (TS, UK)
- Document on CO2 sensors (RS)
- Vaccination modelling ([group member of MP])

Wednesday, 14.04.2021
- Asthma inhalers (AC)
- Scientific update and current situation (MA)
- Epidemiological update (JF)
- Indoor transmission (RS)
- Communication of individual experts (SH)

Friday, 16.04.2021
- Current situation, scientific update and communication (MA)
- Vaccine mandates and hesitancy (DT)
- Revised BAG-FAQ (ST)

Wednesday, 21.04.2021
- Current situation and meeting with FC A. Berset, next steps (MA)
- Epidemiological situation (JF)
- Burden on ICU for non-covid patients (update) (TB)
- PB on CO2 sensors (RS)
- Topics for meeting with FOPH tomorrow (SH)
    - Update vaccination modelling (MP, [group member of MP])

Friday 23.04.2021
- Update and outlook (MA, others)
- Update and discussion on digital topics (Certificates, SwissCovid/NotifyMe) (EB)
- Contact tracing data (EB)

Wednesday, 28.04.2021
- Scientific update and 3-Phasenmodell (SH)
- Epidemiological update (TS)
- R0, vaccination rate (UK)
- How can we assist India in this current situation? (AC)

- Economists perspective for phase 3 (JS)

Friday 30.04.2021

- Scientific update and 3-Phasenmodell (SH)
- Meeting with FOPH next Thursday (SH)
- Vaccination modelling ([group member of MP], MP)
- Behavioral adherence, after vaccine and after testing (SS)

Wednesday, 05.05.2021

- Current situation and 3-Phasenmodell (MA)
- Epidemiological update (TS)
- Meeting with FOPH tomorrow (MA)
- Vaccination modelling (MP, [group member of MP])
- Behavioral adherence, after vaccine and after testing (SS)

Friday, 07.05.2021

- Understanding the discrepancy from the trend/model (UK, others)
- Phase 3 and children (MA, others)

Wednesday, 12.05.2021

- Scientific update and current situation (MA)
- Epidemiological update (TS)
- Possible factors for the observed decrease in infections (MP, others)
- B.1.617 VOC (VT)

Wednesday, 19.05.2021

- Update and current situation (MA, others)
- Upcoming discussion future ncs-tf (MA)
- Media support (MA)
- Epidemiological update (TS)
- Emerging treatment options (AC)
- Update international science advisors (RS)
- Meeting with FOPH tomorrow (MA)

Friday, 21.05.2021

- Future of ncs-tf (SH)
- Monitoring Waste Water - feedback to FOPH (TS)

Wednesday, 26.05.2021

- Current situation, scientific update and task force future (MA)
- Epi update (TS)

- B.1.617.2 updates from UK analyses implications for Switzerland (NL)
- Measures in schools in phase 3 (RS)
- Communication request from FOPH (SS)

Friday, 28.05.2021
- Task Force restructuring and communication (MA)
- Outlook into the fall (SH)

Wednesday, 02.06.2021
No meeting; management meets with FC A. Berset

Friday, 04.06.2021
- Overview and current situation (MA)
- ncs-tf transition (MA)
- Epidemiological update (TS)
- Immunological surveillance (DT)
- PB updates
    - Vaccine mandates and vaccine hesitancy (SS)
    - Control measures at the border PB (NL)

Wednesday, 09.06.2021
- Current situation and scientific update (MA)
- ncs-tf re-organization (SH)
- Epi update (TS)
- Vaccine mandates and vaccine hesitancy (SH)
- Borders brief update (NL)

Friday, 11.06.2021
- Future CT strategies (EB)
- PB on *protection duration after vaccination* (UK)

Wednesday 16.06.2021
- General overview (MA)
- Epidemiological update (RR)
- Genomic characterization (UK, others)
- Transition plans (MA, everyone)

Wednesday, 23.06.2021
- Current situation (MA)
- Epi update (RR)
- Recommendations for academic institutions (fall semester) (SH, MB, EB, others)
- New task force composition, process (MA)

- Serology testing (UK, SS)
- Vaccination regimen (UK, others)

Friday, 25.06.2021

- Document on measures to prevent the spread of SARS-CoV-2 (MA)

Wednesday, 30.06.2021

- Current situation and scientific update (MA)
- Epi update (RR)
- List of ncs-tf activities (MA, others)
- Interview requests (research on the role of the Swiss National Task Force)
- (MA, ST, others)
- FOPH meeting tomorrow (MA)
  - List of ncs-tf activities (MA)
  - Summer measures PB (NL)
  - Open borders PB (NL)

Friday, 02.07.2021

- Children (RS)
- Vaccination coverage (MA)

Wednesday, 07.07.2021

- Vaccination coverage (SS, others)
- Strategy for school openings (TS, others)
- Current situation (MA)
- Epi update (TS)

Wednesday, 14.07.2021

- Current situation and scientific update / input for EDI (MA)
- Re-organised task force (MA)
- Epi update (TS)
- Macron's stance on vaccines (DT)

Wednesday, 21.07.2021

- Current situation and epi update (TS)
- Mandate (TS)
- Intro A. Di Gallo and L. Du Plessis (TS)

Friday, 23.07.2021

- Borders PB in the media (UK, others)
- Vaccinating Children (UK, AG, others)

Wednesday, 28.07.2021

- Current situation and scientific update (TS)
- Borders PB: consensus discussion (UK, others)
- Developments and strategies for phase 3 (TS, others)
- Novel data on vaccine effectiveness (ST)
- Topics for meeting with FOPH tomorrow (UK, SH, EB, SS, AG)
  - Increasing vaccination coverage
  - Transition from phase 2 to phase 3

Friday, 30.07.2021

- Borders PB: consensus discussion (UK, others)
- Objectives for phase 3 (TS)

Wednesday, 04.08.2021

- Current situation (MA)
- Transition (MA/TS)
- Epi update (TS)
- Children in Phase 3 (AG/AH)
- Reasons for low case numbers / reasons for accepting increasing numbers in Phase 3 (TS)

Friday, 06.08.2021

- Scientific Update for Aug. 17 (TS)
- Exchange Meeting with FOPH / GDK (TS)
- Reasons for low case numbers / reasons for accepting increasing numbers in Phase 3 (TS)

Wednesday, 11.08.2021

- Current situation and scientific update (MA, TS)
- Epidemiological situation (RR, TS)
- Consequences of Delta for infection prevention and certificates – preview (TS)
- Topics for meeting with FOPH tomorrow (SH)

Friday, 13.08.2021

- Current situation (TS)
- Computing vaccination coverage in companies/universities (EB)
- Document on measures in acad. institutions in fall (SH)

Wednesday, 18.08.2020

- Current Situation (TS)
- Epidemiological Update (RR)
- Efficacy of infection prevention measures in the light of Delta (DT, ST)
- Transition (MA, TS)

Friday, 20.08.2020

New structure (TS; information)

Situation in hospitals (TS, UK; short presentation and discussion)

Debriefing of meetings with FOPH / decision makers (JF / Representative from Thursday Austauschsitzung / Representative from Friday Vaccination meeting with FOPH)

Wednesday, 25.08.2020

- Current Situation (TS)
- Epi. Update (RR)
- Vaccine efficacy and Simpson Paradox (RN, LP)
- FOPH meeting Thursday (TS)

Friday, 27.08.2020

- Current situation (TS)
- Debriefing of meetings
    - Steuerungsausschuss
    - Austauschsitzung BAG-GDK-STF
    - Vaccination meeting with FOPH
    - European Science Advisers meeting
- The role of masks and ventilation (RS)
- Making GGG events save (UK)

Wednesday, 01.09.2021

- Current situation and scientific update (TS)
- Epi update (JF)
- Booster vaccines (DT)

Wednesday, 08.09.2021

- Current situation and scientific update (TS)
- Epi update (RR)
- Vaccination communication (UK)
- Preparing for academic year, update (SH)
- Briefing for FOPH meetings this week (Thu and Fr) (SS)
- Debriefings
- Steuerungsausschuss (JF)
- Austauschsitzung BAG-GDK-STF (SS)
- European Science Advisers meeting (RS)
- Summary of the meeting with Pro Juventute (AG)

Friday, 10.09.2021

- Debriefing of the meeting with Pro Juventute (AG)
- Borders (NL)

Wednesday, 15.09.2021

- Current situation and scientific update (TS)
- Epi situation (RR)
- Boosters (RR)
- Debriefings:
  - Steuerungsausschuss (JF)
  - Austauschsitzung BAG-GDK-STF (SS)
  - Vaccination meeting with FOPH (SH, EB)
  - European Science Advisers meeting (RS)

Friday, 17.09.2021

- Kids (AG)
- Boosters (UK)

Wednesday, 22.09.2021

- Current situation and scientific update (TS)
- Epi situation (RR)
- Debriefings:
  - Steuerungsausschuss (JF),
  - Vaccination meeting with FOPH (SH),
  - Meeting with FDP (JS)

Wednesday 29.09.2021

- Current situation and scientific update (SH)
- Epi situation (JF)
- Document on kids (SH,SS)
- Preparing for the next wave (UK)
- Debriefings:
  - Steuerungsausschuss (JF),
  - Vaccination meeting with FOPH (SH)
  - European Science Advisers meeting (RS)

Wednesday, 06.10.2021

- Current situation, scientific update and Task Force future (TS)
- Transfer of ncs-tf activity list to FOPH (TS)
- Epi situation (JF)
- Preparing for the next wave (UK)
- Effectiveness of certificates (TS)
- FOPH meeting tomorrow (SS)
- Meeting debriefings:
  - Steuerungsausschuss (JF)

- European Science Advisers meeting (MA)

Wednesday, 13.10.2021

- Current situation and scientific update (TS)
- Epi situation (RR)
- Oral treatment (AC)
- Future testing and certificate strategy (DT)
- Certificates validity duration (TS)
- Indicators for when to relax measures (TS)
- Meeting debriefings:
  - Steuerungsausschuss (JF)
  - Austauschsitzung BAG-GDK-STF (UK)

Friday, 15.10.2021

- Guest: A. Lévy
- Indicators for when to relax measures (TS)
- Certificates (DT, TS)

Wednesday, 20.10.2021

- Current situation (TS)
- Epi situation (RR)
- Scientific update (TS)
- FOPH meeting tomorrow (SS)
- Meeting debriefings:
  - Meeting with A. Lévy (TS)

Friday, 22.10.2021

- Scientific update

Wednesday, 27.10.2021

- Current situation (TS)
- Epi situation (RR)
- Meeting debriefings:
  - Meeting with FC A. Berset (TS)
  - Science Policy Dialogue (MA)
  - Steuerungsausschuss (JF)
  - Austauschsitzung BAG-GDK-STF (SS)
  - Vaccination meeting with FOPH (SH)

Wednesday 03.11.2021

- Current situation (TS)
- Epi situation (RR)

- ICU capacity (HP)
- Boosters and certificates (CM)
- Meeting with FOPH tomorrow (SS)
- Meeting debriefings:
  - Meeting with Pädiatrie Schweiz (AG)

Friday, 05.11.2021

- Vaccination week communication (SS, NE)
- Strategies for the winter (UK)

Wednesday, 10.11.2021

- Current situation (TS)
- Epi situation (RR)
- Ireland / UK situation (RS)
- Vaccination week (TS)
- Meeting debriefings:
  - Meeting with FC A. Berset (TS)
  - European Science Advisers meeting (RS)
  - UK Booster Meeting (UK)
  - Vaccination meeting with FOPH (SH)

Friday, 12.11.2021

Document "Strategies for the winter"

Wednesday 17.11.2021

- Epi. situation (RR)
- Strategies winter (SH/TS)
- Report on Geneva: data on children and adolescents (SS)
- Current situation (TS)
- Debriefing
  - Acad. Institutions: Covax (SH)
  - Steuerungsausschuss (JF)
  - BAG-GDK-STF exchange meeting (SS)
  - Vaccination meeting (SH)

Friday, 19.11.2021

- Strategies for the winter (SH)
- Point de Presse (TS)

Wednesday 24.11.2021

- Report on Geneva data on children and adolescents (SS)
- Epi. situation (RR)

- Current situation (TS)
- Debriefings
  - Steuerungsausschuss (JF)
  - BAG / Vaccination (SS)

Friday, 26.11.22

- New variant B.1.1.529 (VT, RN)

Wednesday, 01.12.2021

- Epi update (RR)
- How long do border measures make sense (NL)
- ICU projections (ST, RR)
- Meeting with FOPH tomorrow (SS)
- Meeting debriefings:
  - Proposed measures
  - A. Lévy, FC A. Berset (TS)
  - European Science Advisers meeting (RS)

Friday, 03.12.2021

- Situation in hospitals (UK, HP)

Wednesday, 08.12.2021

- Epi situation (RR)
- Omicron neutralization data (VT)
- Severe disease in kids & Stellungnahme von "Pädiatrie Schweiz" (UK / AH)
- Debriefing
  - FC A. Berset meeting (TS)
  - Meeting with GLP / SP (UK)
  - PdP (UK)
  - BAG Austauschmeeting (SS)

Friday, 10.12.2021

- Vaccine protection against hospitalization (LP)
- Stellungnahme von "Pädiatrie Schweiz" / Severe disease in kids (UK / AH)
- Scenarios for Omicron / measures (TS)

Wednesday, 15.12.2021

- Epi situation (RR)
- Current situation (TS)
- Meeting with FC A. Berset tonight on Omicron (TS, RN)
- Vaccination interval for 3rd dose (UK)
- Meeting with FOPH tomorrow (SS)

- Debriefings:
  - Meeting with Pädiatrie Schweiz (SH, AH)
  - Green party (UK)
  - SP Fraktion (TS)
  - Steuerungsausschuss (JF)

Friday 17.12.2021

- FFP2 masks (ST)
- Boosters (UK)
- Vaccine hesitancy (SH)

Wednesday, 22.12.2021

- Epi situation (RR)
- Current situation (TS)
- Vaccine mandates (SH)
- Scenarios for winter (UK)
- Debriefings
  - Steuerungsausschuss (JF)
  - Austauschsitzung BAG-GDK-STF (SS)

Monday, 27.12.2021

- Epi Update (RR, TS, VT)
- TTIQ and Omicron (SH, UK)
- Point de Presse Dec 28 (TS)

Wednesday, 29.12.2021

- Quarantine and Isolation (TS / ST)
- Epi Situation (RR)
- Current Situation (TS)
- General (TS)
- PdP (SH, AH)

Wednesday, 05.01.2022

- Facing Omicron (UK, MA)
- Epi situation (RR)
- Scientific Update and meeting with FC. A. Berset next week (SH)
- Topics for FOPH, EKIF, GDK exchange mtg next week (SS)
- Debriefings

Friday, 07.01.2022

- Facing Omicron (TS)
- goals

- quarantine, isolation
- further measures
- varia

Wednesday 12.01.2022

- Epi situation (JF)
- Current situation (TS)
- Testing strategy (DT)
- FOPH Meeting (SS)
- Debriefing
- Steuerungsausschuss (JF)

Friday, 14.01.2022

- future of certificates (TS)
- testing (debriefing from FOPH meeting; DT)
- quarantine (UK)

Wednesday, 19.01.2022

- Epi situation (RR)
- Current situation (UK)
- Scientific update/pdp (UK)
- Long term scenarios, part I (SH)
- Meeting debriefings:
- Austauschsitzung BAG-GDK-STF (DT, others)

Friday, 21.01.2022

- Next week's scientific update

Wednesday, 26.01.2022

- Epi situation (JF)
- Current situation (UK, others)
- Debrief, meeting with FC A. Berset
- Meeting tomorrow with BAG-GDK-STF (SS)

Friday 28.01.2022

- Medium Term strategies

Wednesday, 02.02.2022

- Epi update (JF)
- Current situation (UK)
- Position *Vernehmlassung*, new document (UK, others)
- Distribution of tasks for medium-term strategies (UK, others)

- Debriefings
- Steuerungsausschuss (UK)

Friday, 04.02.2022

- Position document on the *Vernehmlassung*

Wednesday, 09.02.2022

- Epi situation (RR)
- Current situation (TS)
- Strategy for ending the task force (TS)
- Meeting with FOPH, EKIF, GDK tomorrow (SS)
- Meeting debriefings:
  - Meeting with FC A. Berset (TS)
  - Science Policy Dialogue (TS, MA)
  - Steuerungsausschuss (JF)

Wednesday, 16.02.2022

- Epi update (RR)
- Current situation (TS)
- Meeting debriefings:
  - Meeting with FC A. Berset (TS)
  - Steuerungsausschuss (JF)
  - Austauschsitzung BAG-GDK-STF (SS)

Wednesday, 23.02.2022

- Epi situation (RR, VT)
- Current situation (TS)
- Meeting with FOPH tomorrow (SS)

Friday, 25.02.2022

- Report on STF and Interface of science (via the STF) to policy.

Wednesday, 02.03.2022

- Current situation (TS)
- Epi situation (RR)
- Meeting debriefings:
  - Steuerungsausschuss (JF)
  - Austauschsitzung BAG-GDK-STF (SS)

Wednesday, 09.03.2022

- Corona immunitas (Guest: J. Fehr)
- Epi situation (RR, others)

- Current situation (TS)
- Austauschsitzung BAG-GDK-STF tomorrow (SS)
- Meeting debriefings:
  - Meeting with FC A. Berset (TS)
  - Meetings with political parties (SH, UK)
- European Science Advisers meeting (ST, RS)

Wednesday, 16.03.2022

- Long Covid (Guest: M. Nehme)
- Epi situation (RR)
- Current situation (TS)
- Meeting debriefings:
  - Austauschsitzung BAG-GDK-STF (SS)

Friday, 18.03.2022

- Report on STF and Interface of science (via the STF) to policy (TS)

Wednesday, 23.03.2022

- Epi situation (RR, [group member of RR])
- Current situation (TS)
- Austauschsitzung BAG-GDK-STF tomorrow (SS)

A.4 Liste aller Policy Briefs

Date	Title
27.03.20	FOPH questions on the first analysis of current Swiss Epidemic
08.04.20	Recommendation for healthcare facilities for storing protection FFP masks
09.04.20	The role of asymptomatic SARS-CoV-2 infections: rapid living systematic review and meta-analysis
10.04.20	Modellierung von verschiedenen Szenarien nach dem 26. April 2020
11.04.20	Ethical, legal, and social benchmarks for transition strategies.
11.04.20	ncs-tf Proposals for a Transition Strategy
13.04.20	On the usefulness of temperature screening in public and private buildings.
20.04.20	Role of Face masks as part of non- pharmaceutical interventions against coronavirus disease
20.04.20	The role of serological testing in the COVID-19 response in Switzerland
20.04.20	Phylogenetische Analysen können zum epidemiologischen und evolutionären Verständnis von SARS-CoV-2 beitragen
21.04.20	FOPH questions regarding the epidemic dynamics of COVID-19 and measures in Switzerland
22.04.20	Ethics of serological passports
24.04.20	Contact tracing costs
26.04.20	Contact Tracing Strategy
28.04.20	Recommendation for healthcare facilities in Switzerland for sterilizing protection FFP masks
01.05.20	Implications for commercial real estate
01.05.20	Risk factors for severe manifestations of SARS-CoV-2 infection
03.05.20	Vaccines and Treatment Studies for COVID-19
04.05.20	Continued confinement of those most vulnerable to COVID-19
05.05.20	Epidemiologische Szenarien nach Lockerung der Massnahmen per 11. Mai 2020
09.05.20	Social, legal, and ethical issues of Test-trace-isolate-quarantine strategies

10.05.20	Economic Considerations of Test-Isolate-Trace-Quarantine (TITQ)
13.05.20	Comparison of Sweden and Switzerland
14.05.20	Gender aspects of COVID-19 and pandemic response
15.05.20	Digital Proximity Tracing
15.05.20	Who should pay for SARS-CoV-2 testing?
17.05.20	Protecting physical and mental health of healthcare workers
20.05.20	How to repay the government debt resulting from the COVID-19 crisis?
20.05.20	Betreuung betagter Menschen während der Covid-19-Epidemie
26.05.20	The importance of seasonality and climate on the risk of COVID-19: rapid review
26.05.20	Strategy to control the epidemic of SARS-CoV-2 in Switzerland
04.06.20	Response to FOPH questions on masks and aerosol transmission
08.06.20	Strategy to react to substantial increases in the numbers of SARS-CoV-2
14.06.20	Psychological effects of confinement and deconfinement
15.06.20	Phylogenetic analysis in COVID-19 surveillance
16.06.20	Disruption of the Swiss labor market: 2020 Corona crisis and 2008 Financial crisis compared
23.06.20	Procurement quality – regulations on non-conforming face masks
23.06.20	Zukunft der Swiss National COVID-19 Science Task Force
01.07.20	Benefits of wearing masks in community settings where social distancing cannot be reliably achieved
03.07.20	Task Force alarmiert über den rapiden Anstieg der Zahl der SARS-CoV-2-Infektionen in der Schweiz
10.07.20	Digital Proximity Tracing – The View from Economics
13.07.20	SARS-CoV-2 prevention in Switzerland and open borders from 15 June 2020 onwards (Previous versions: 14.06.20; 25.06.20)
22.07.20	Communication and SARS-CoV-2
12.08.20	The role of children and adolescents (0-18 years of age) in the transmission of SARS-CoV-2 (Previous versions: 20.04.20; 23.04.20; 10.05.20; 12.08.20)
12.08.20	Is there a health-wealth tradeoff during the COVID-19 crisis?

21.08.20	Impact of therapies against COVID-19 on mortality
31.08.20	Tackling weak investment with an adjustment to the COVID-19 credit programme
07.09.20	SARS-CoV-2 infection-induced immune responses: meaningful immune protection?
14.09.20	Widespread community spread of SARS-CoV-2 is damaging to health, society and the economy
24.09.20	Clarification on face mask types, architecture, quality, handling, test and certification procedures
24.09.20	Recommendations on minimal specifications for community masks and their use (Previous version: 25.04.2020)
26.09.20	COVID-19 and the influenza vaccination strategy for influenza season 2020 / 2021
30.09.20	Considerations regarding the duration of quarantine for people with possible exposure to SARS-CoV-2 infection
10.10.20	Collecting and Processing Data related to the Use of the SwissCovid App (Previous version: 14.07.2020)
12.10.20	Estimating the economic costs of avoiding COVID-19 transmission at the border
16.10.20	Risk factors for severe manifestations of SARS-CoV-2 infection (Previous versions: 01.05.20; 29.07.20)
29.10.20	An update on SARS-CoV-2 detection tests
29.10.20	The role of Aerosols in SARS-CoV-2 Transmission
31.10.20	The rationale for a substantial increase of resources for contact tracing and testing
10.11.20	Support to businesses in the second COVID-19 wave 1
10.11.20	Scalability and Efficacy Considerations for Test-Trace-Isolate-Quarantine (TTIQ)
17.11.20	Covid-19 Vaccines: Process to determine priority and allocation & National and International Responsibilities for Access
19.11.20	Mögliche Langzeitfolgen einer Sars-Cov-2-Infektion
22.11.20	The use of face shields as personal protective equipment during the SARS-CoV-2 pandemic
25.11.20	Masks as an essential good?
25.11.20	Protecting older persons in long-term care in the context of the SARS-CoV-2 pandemic while maintaining quality of life.
25.11.20	What can the employee do if the employer does not comply with the protective measures (or plans)?
08.12.20	On regional differences in the second wave

10.12.20	Testing strategy for children (0-12 years of age) and quarantining strategy of children and adolescents in Switzerland
07.01.21	Why far-reaching health policy measures make sense from a macroeconomic perspective in the current situation
12.01.21	The double burden of operating near intensive care saturation in Switzerland
18.01.21	Assessment of measures in schools
19.01.21	Considerations regarding the mandatory use of FFP masks for the general population
20.01.21	The impact of the COVID-19 pandemic on mental health in Switzerland
22.01.21	Paediatric Inflammatory Multisystem Syndrome Temporally Associated with SARS-CoV-2
04.02.21	Responses to Corona denial
04.02.21	Assessment of different strategies of quarantine
10.02.21	Requiring proof of Covid-19 vaccination (Vaccine “Passports” / ”Certificates”): Key ethical, legal, and social issues
10.02.21	Requirements and Scope of Digital Certificates
19.02.21	Policy brief on the reduction of Covid-19-associated mortality by drug therapies (Previous versions: 12.01.21; 05.02.2021)
15.03.21	The economic benefits of an accelerated vaccination campaign
01.04.21	Considerations for intensified community testing for SARS-CoV-2 in Switzerland
09.04.21	The role of children (≤12 years of age) and adolescents (13-17 years of age) in the SARS-CoV-2 pandemic: A rapid review (Previous versions: 20.04.20; 23.04.20; 10.05.20; 12.08.20)
12.04.21	On the use of CO2 sensors in schools and other indoor environments
21.04.21	Estimating the impact of releasing control measures on the backlog of admission in intensive care units in Switzerland.
24.04.21	Considerations for an alert system for infectious diseases, focus on COVID-19
10.06.21	Protection duration after vaccination or infection
29.06.21	Prevention of spread of SARS-CoV-2 in Switzerland in summer 2021, in the context of variants of concern and vaccination
16.07.21	SARS-CoV-2 prevention and border control measures for Switzerland (Previous versions: 14.06.20; 25.06.20; 13.07.20; 16.07.21)
17.08.21	Reduction of Covid-19-associated mortality by drug therapies (Previous version: 08.07.2021)

20.08.21	Covid-19 Vaccines: Ethical, Legal and Health Policy considerations regarding different responses to vaccine hesitancy
20.08.21	Preparing for the academic year 2021-22 in academic institutions
08.11.21	Auswirkung des Zertifikats auf das Gastgewerbe
17.11.21	Protection duration after vaccination or infection, and efficacy of a third dose by vaccination or booster by infection
17.01.22	Comparing COVID-19 infection vs mRNA vaccination in 5-11 year old children
30.03.22	COVID19 social stratification in Switzerland

A.5 Documents on the possible development of the epidemic in the run-up to the second epidemic wave

A.6 List of all meetings with parliamentary groups of the Federal Assembly

(meetings were offered to all political groups)

04/03/2021	Meeting with the Swiss Green Party
09/03/2021	Meeting with FDP.The Liberals
15/03/2021	Meeting with the Swiss Green Liberal Party
16/03/2021	Meeting with the Centre
27/04/2021	Meeting with the Swiss Social Democratic Party Presidents
14/06/2021	Meeting with the Swiss Green Liberal Party
16/09/2021	Meeting with the Swiss Green Party
21/09/2021	Meeting with FDP.The Liberals
07/12/2021	Meeting with the Swiss Social Democratic Party
08/12/2021	Meeting with the Swiss Green Liberal Party
14/12/2021	Meeting with the Swiss Green Party
08/03/2022	Meeting with the Swiss Green Party
08/03/2022	Meeting with the Swiss Social Democratic Party

A.7 List of meetings with international experts

Meetings with European science advisors: meetings of experts from the United Kingdom, Ireland, France, Germany, Spain, Italy, Belgium, the Netherlands and Switzerland, which were organised by the UK, lasted one hour each and were conducted by videoconference:

26/11/2020	
	08/01/2021
24/01/2021	
	28/01/2021
12/02/2021	
	24/02/2021
18/03/2021	
	25/03/2021
07/04/2021	
	19/05/2021
08/06/2021	
	01/07/2021
22/07/2021	
	02/09/2021

30/09/2021

01/11/2021

24/11/2021

09/12/2021

23/12/2021

07/02/2022

03/03/2022

International meetings organised by the White House Office of Science and Technology Policy in the USA, with international participants, with each meeting lasting one hour and being conducted by videoconference:

09/11/2020

15/12/2020

04/02/2021

04/05/2021

30/06/2021

Additional meetings with scientific advisors or representatives from health authorities in various countries which were conducted by videoconference:

South Korea, Center for Disease Control and Prevention, 07/04/2020

Singapore, 17/04/2020

Australia, spring 2020

Italy, 21/05/2020 (and additional individual meetings at the start of the pandemic)

Germany, RKI, 09/06/2020

New Zealand, 29/09/2020

France, Science Task Force, 09/10/2020

Austria (frequent informal meetings in 2020 and 2021)