



STANDING COMMITTEE ON PANDEMIC PREPAREDNESS

INTERIM REPORT

August 2022

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This Interim report from the Standing Committee on Pandemic Preparedness responds to the Commission¹ to the Committee issued by the First Minister.

1 <https://www.gov.scot/publications/standing-committee-on-pandemic-preparedness-commission/>

List of Abbreviations

COG-UK	COVID-19 Genomics UK Consortium
COVID-19	Coronavirus Disease 2019
CVR	MRC-University of Glasgow Centre for Virus Research
EAVE II	Early Pandemic Evaluation and Enhanced Surveillance of COVID-19
G7	Group of Seven (The UK, Canada, France, Germany, Italy, Japan, and the USA).
HCID	High Consequence Infectious Disease
NHS	National Health Service
PHS	Public Health Scotland
PPE	Personal Protective Equipment
RSE	Royal Society of Edinburgh
SAGE	Scientific Advisory Group for Emergencies
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
SSAC	Scottish Science Advisory Council
UKHSA	United Kingdom Health Security Agency
WHO	World Health Organization

Chair's Summary

Scotland has many reasons to be grateful over the last 30 months in its quest to combat one of the defining challenges to humanity in the last 100 years.

The COVID-19 pandemic has demonstrated the strength and commitment of our NHS and social care workers and public health professionals and scientists in the public sector, research institutions, and industry to public service. The value of bringing these sectors together was immense, and was complemented by significant roles played by individuals, families, and communities. Yet despite this commitment, SARS-CoV-2 caused immeasurable suffering, widespread societal harm, and amplified health disparities. Looking ahead, it is vital to ensure that Scotland is as prepared as possible for any future risks from novel synthetic and biological pathogens. I have therefore been honoured to be asked by the First Minister to convene the Standing Committee on Pandemic Preparedness and to present this interim report. I want to record my gratitude to my colleagues on the Committee who have given their time and expertise willingly and pro bono.

In going about our work, we have drawn on expertise across aspects of Scotland's pandemic preparedness system. We present that work in what follows and there are recommendations that are for us and others to take forward in the coming year, but I would identify four big-ticket recommendations for Scotland to focus on in the coming period (see Figure 1).

First, we believe that if there is one dominant theme to our work, it is the value and importance of collaboration. We therefore suggest that we work with Public Health Scotland to produce proposals for a **Centre of Pandemic Preparedness** with the purpose of anticipating, preparing for and responding to pandemics. The Centre will act as a nexus for collaboration between Scotland's public health, research and academic communities and be supplemented by input from the wider NHS, industry and government. The Centre will create a critical mass of expertise and leadership across sectors committed to protecting the citizens of Scotland and the world from infectious disease threats.

Second, any novel pathogen with pandemic potential will be likely to emerge quickly and its impacts will be felt across society. From the biology of the pathogen through to the views and behaviour of the public, **data and analysis as basic infrastructure** is required to understand and respond to emerging threats. Scotland has real opportunities here to build on its proven strengths, but significant challenges remain. For that reason, we propose a high priority is to support proposals as to how Scotland can enhance data collection and analysis in a trustworthy way as a matter of urgency. This work should start now as it is the backbone of pandemic preparedness.

Third, **the provision of swift and independent scientific advice** specific to Scotland's context has been a novel, but hugely valued support to decision-making. Our proposal here is that those functions and the connections to wider UK decision-making bodies are formalised, and international networks reinforced.

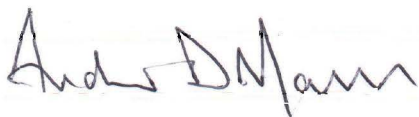
Chair's Summary

And finally, the new tools at our disposal have shown us what can be achieved in the fields of diagnostics, vaccines, and therapeutics. We have seen huge steps forward in technology, clinical trials and regulatory processes. The final area in which we expect to be active in the coming 12 months is how Scotland works across public health, research and industry to create a **“triple helix partnership” that supports innovation** while also boosting our own life sciences and research competitiveness.

I believe these are important and achievable ambitions to which the Scottish Government and its partners will wish to respond.

Our work is quite deliberately not an exhaustive review of pandemic preparedness, nor a prescription to solve all the problems. Instead, we have been guided by three principles. First, we have sought to make recommendations that are useful, evidence-based, and sustainable. Second, we have not attempted to set out every aspect of what is needed for a global system to respond to the next pandemic. Rather, we have focused in on Scotland's needs and on those areas and issues where we think Scotland is well placed to take the opportunities to improve our future performance in the light of recent learning and new technologies. Third and finally, we have sought to give priority to those areas where we see opportunities to take forward our work by learning and sharing with others in Scotland and beyond.

All of us have reasons to be grateful to our scientists and clinicians, but also to the population of Scotland who have in conditions of huge uncertainty and pressure been asked to make massive sacrifices, and done so. I want to make sure as we develop our proposals and finalise our advice, we solicit comments through a strong commitment to consultation and community engagement. In the next phase of this work, the Standing Committee will bring partners together to consult widely with a commitment to producing a final report, which will focus on how the operational reality of our next response can be optimised. We look forward to working in partnership as we take our work forward.



Professor Andrew Morris CBE
Chair – Standing Committee
on Pandemic Preparedness



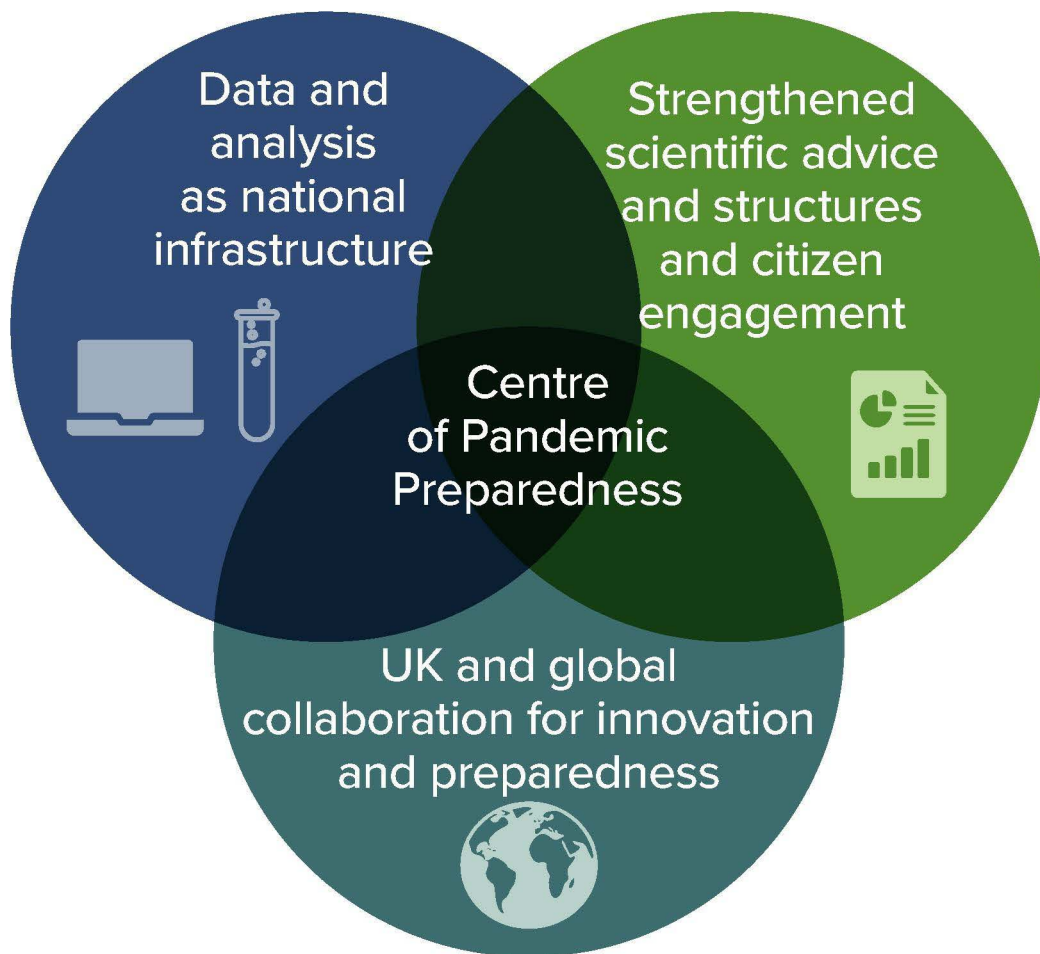


Figure 1. Summary of Key Recommendations

Introduction

Pandemics are inevitable and likely to occur more frequently in the future than in the past. They are included in the most damaging category of events identified in the UK National Risk Register², as the experience of COVID-19 has starkly proven.

To that end, the Scottish Government established the Standing Committee on Pandemic Preparedness, with a remit to ensure that Scotland is as well prepared as possible for future pandemics. The First Minister's Commission³ to the Committee sets out the advice requested by the Scottish Government, which the Committee will respond to in its final report.

The Commission requires that the final report is provided within 18 months of the submission of the Committee's interim report, and specifies that the interim report should set out:

- Initial advice on priority work that should commence as soon as possible to improve preparedness for future pandemics; and
- Interim conclusions on any of the issues covered by the Commission where, in the Committee's view, it is helpful to do so in advance of their final report.

Scotland and the Global Context

Pandemics present a global challenge. COVID-19 has demonstrated the need for researchers, policy makers, and governments to address the multiple dimensions of pandemics not only within, but also across sovereign boundaries to ensure that all countries are better equipped to prevent, detect, respond to, and recover from health crises.

The current pandemic has again illustrated the seriousness of biological threats. As of 7 June 2022, COVID-19 is reported to have killed over 6.2 million people globally⁴, with World Health Organization (WHO) excess-mortality estimates suggesting a true death toll associated with COVID-19 of 14.9 million between 1 January 2020 and 31 December 2021⁵.

2 <https://www.gov.uk/government/publications/national-risk-register-2020>

3 <https://www.gov.scot/publications/standing-committee-on-pandemic-preparedness-commission/>

4 <https://covid19.who.int/>

5 <https://www.who.int/data/stories/global-excess-deaths-associated-with-covid-19-january-2020-december-2021>

Introduction

In the UK and Scotland, the number of deaths with COVID-19 stated on the death certificate surpassed 195,000 and 14,600 respectively up to 20 May 2022⁶, with some recovered patients living with long-term physical and mental health effects⁷. In addition, the indirect impact of the pandemic has severely affected the ability of the NHS and wider health and social care services to provide non-COVID services. Notably, the pandemic also magnified existing inequalities and “the societal impact has been borne disproportionately by front-line and higher-risk and disadvantaged populations”⁸.

At its meeting on 29 April 2022⁹, the Standing Committee committed to address the Scottish Government Commission in the context of global best practice. The members considered a range of domestic and international reports on future pandemic preparedness. The report of the Biden-Harris Administration, ‘American Pandemic Preparedness: Transforming our Capabilities’¹⁰ was endorsed as particularly apt in summarising the global context that faces Scotland.

In Scotland, expert groups such as the Royal Society of Edinburgh (RSE) and the Scottish Science Advisory Council (SSAC) have produced lessons learned reports reflecting on the experience of COVID-19 and making recommendations for future pandemics. The Committee considered these and engagement with stakeholders including our learned societies, third sector, and the wider public will take place in the next phase of the Committee’s work.

Lessons should be drawn from the experience of COVID-19 in order to shape future pandemic preparedness, whilst recognising the next pandemic may differ substantially from COVID-19, as illustrated by the large number of viral families known to be able to infect humans shown in figure 2. Preparedness should be considered for pandemics and high consequence biological threats, including for Disease X¹¹.

6 <https://coronavirus.data.gov.uk/details/deaths>

7 <https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide>

8 <https://digitalpublications.parliament.scot/ResearchBriefings/Report/2021/3/23/ee202c60-93ad-4a27-a6e7-67613856ba24>

9 <https://www.gov.scot/publications/standing-committee-on-pandemic-preparedness-minutes-april-2022-2/>

10 <https://www.whitehouse.gov/wp-content/uploads/2021/09/American-Pandemic-Preparedness-Transforming-Our-Capabilities-Final-For-Web.pdf>

11 <https://www.who.int/activities/prioritizing-diseases-for-research-and-development-in-emergency-contexts>

Introduction

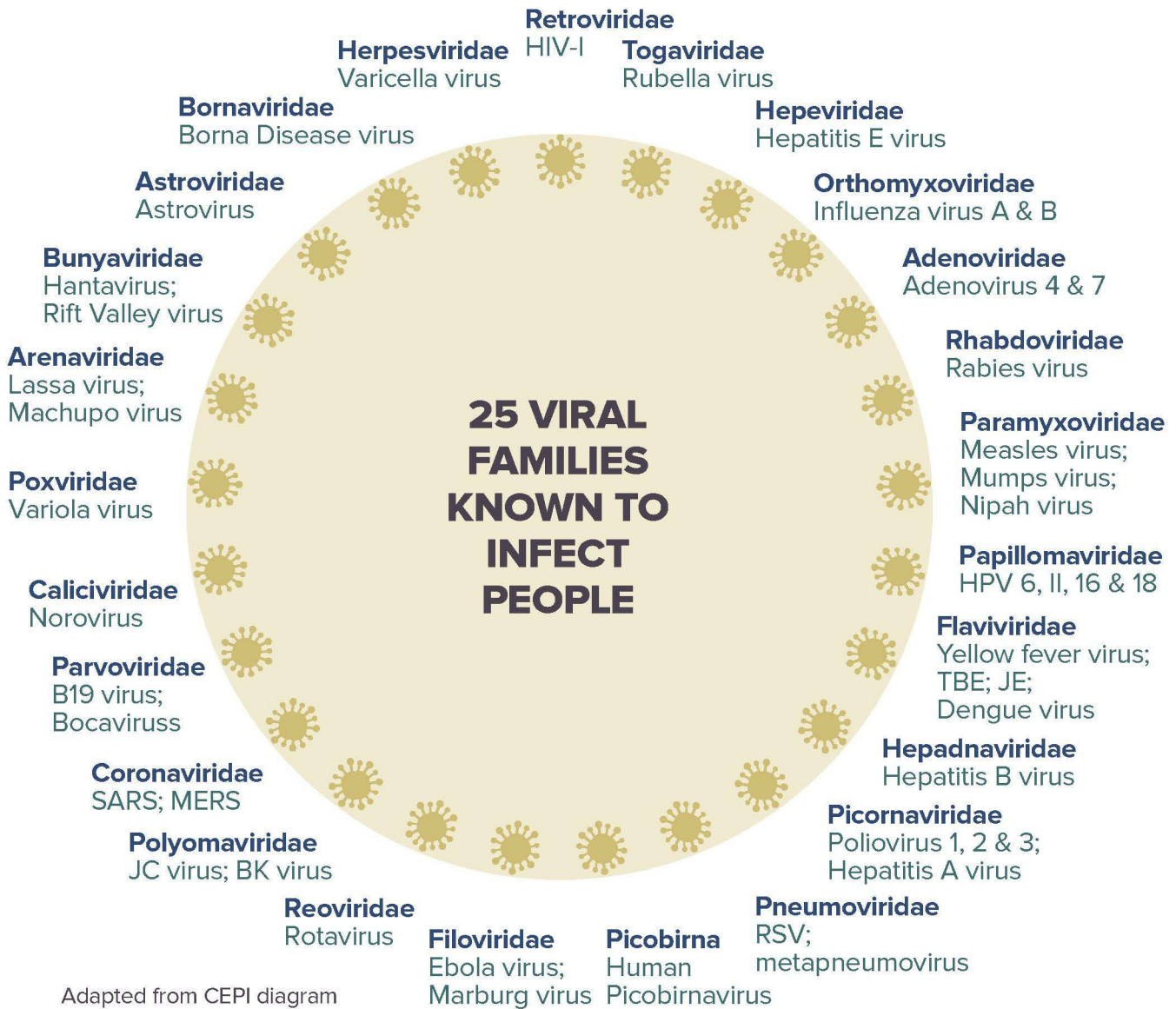


Figure 2. 25 viral families known to infect people¹²

¹² <https://100days.cepi.net/100-days/>

Initial Proposals and Recommendations

Biomedical and health resilience issues converge in multiple reports and lessons learned exercises across the Scottish, UK and international contexts, including reports by the Independent Panel for Pandemic Preparedness and Response¹³, G7¹⁴, SSAC¹⁵, RSE¹⁶ and the House of Lords Select Committee on Risk Assessment and Risk Planning¹⁷. The themes raised in these reports cover areas such as science and innovation, links to industry, resilience, public engagement, and trust. Drawing on the findings of these reports, the Committee's work focussed on four key areas:

1. Zoonoses and Surveillance (including the use of Data and Analytics)
2. Behavioural Interventions and Community Engagement
3. Governance and International Engagement
4. Diagnostics, Vaccines, and Therapeutics

For each of these areas the Committee considered the most relevant problems for attention and the critical priorities for Scottish decision-makers. Further detail on these is included in the Appendix¹⁸. As a result of this work, the Committee has agreed four key recommendations for this interim report.

Recommendation 1: Collaboration

“To develop proposals for the creation of a Centre of Pandemic Preparedness in Scotland.”

The creation of a unified body for public health intelligence and scientific expertise would enable Scotland to maintain and build its research and response capacity. This type of collaboration would play a key role in joining-up academic and non-academic stakeholders for the investigation of unanswered questions, providing an evidence base for decisions and supporting government, organisations, and communities to manage risk and uncertainty. The vision is to create a partnership involving Scotland's public health and research and academic communities, supplemented by input from the wider NHS, industry, and government – creating a national laboratory for knowledge-based pandemic preparedness. An illustration of the capabilities such a Centre could incorporate is included at figure 3 below.

13 https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf

14 <https://www.g7germany.de/resource/blob/974430/2042052/2d5b55bcd50f1aa46b979566288e9a5/2022-05-20-pact-for-pandemic-readiness-data.pdf?download=1>

15 <https://www.scottishscience.org.uk/article/ssac-report-building-science-legacy-covid-19-scotland>

16 https://www.rsecovidcommission.org.uk/wp-content/uploads/2021/10/202110_Covid-Commission-Report_04-REPORT.pdf

17 <https://publications.parliament.uk/pa/ld5802/ldselect/ldrisk/110/11002.htm>

18 <https://www.gov.scot/isbn/9781804358764>

Initial Proposals and Recommendations

Recommendation 2: Data

“To build on Scotland’s existing data and analytics strengths to support proposals that advance the development of these as core infrastructure for future pandemics.”

Throughout the COVID-19 pandemic, the analysis of large and diverse datasets has been key to identifying signals and characterising the challenges posed by and response to the virus. Data are a fundamental resource for modern health and social care and access to these data is a core utility for emergency preparedness and response. For future pandemic preparedness, platforms that are flexible and adaptable and where approvals have been provided in advance in order to be able to carry out rapid, real-time investigations of data are needed. In this sense, data should be considered as key infrastructure, similarly to specialised laboratory infrastructure. The design of such infrastructure requires public engagement and involvement if it is to demonstrate trustworthiness and to realise the considerable public benefits it could produce. The Committee recommends the Scottish Government commissions the work to define a robust data infrastructure as a matter of urgency. It is vital that existing strengths such as Research Data Scotland and EAVE II (Early Pandemic Evaluation and Enhanced Surveillance of COVID-19) are brought together, and cohere with the Data Strategy for Health and Social Care.

Recommendation 3: Advice

“To develop linkages to Scottish, UK, and international scientific advisory structures, networks, and agencies and strengthen information flows from these in order to inform Scottish preparedness and response in the face of future pandemic threats.”

It is important that Scotland is well connected and able to leverage networks that will allow its public health agency and academic community to access essential information on emerging threats. Much of that is already achieved through participation in UK and global scientific structures; however, the Committee agreed that there is a need for these to be strengthened by structures which bring together leadership and expertise in Scotland and which therefore allow Ministers and policy advisors to have swift and direct access to advice in the face of an emerging threat.

Initial Proposals and Recommendations

Recommendation 4: Innovation

“To support continued innovation in life sciences and public health research for the development of diagnostics, vaccines, and therapeutics to provide the capability to respond to novel threats when required.”

Development of novel diagnostics, therapeutics, and vaccines will be an international effort, but the Committee noted the successful partnerships between academia, the health service, and industry, which were vital contributors to a comprehensive and effective response against COVID-19. Our recommendations seek to build on this legacy infrastructure, to support the development of a “triple helix”¹⁹ ecosystem that ensures Scotland has adequate capacity in human resource to meet future pandemic challenges, and to cement the inter-sectoral collaborations that were of such value for COVID-19.



Figure 3. Outline of Centre of Pandemic Preparedness capabilities

¹⁹ This is a modification of the “Triple Helix” concept of partnership working first described in this paper: Etzkowitz, Henry and Leydesdorff, Loet, The Triple Helix -- University-Industry-Government Relations: A Laboratory for Knowledge Based Economic Development (January 1, 1995). EASST Review, Vol. 14, No. 1, pp. 14-19, 1995 <https://ssrn.com/abstract=2480085>

Next Steps

The recommendations listed in the section above are not intended to be exhaustive but represent areas where the Committee see particular benefit to Scotland of change or improvement. Each recommendation encompasses a number of areas for further consideration by the Committee, with further detail on these included in the Appendix²⁰.

In addition, the Committee noted the fundamental importance to pandemic preparedness of a resilient NHS and health and social care systems, whilst also recognising that issues of operational management, rather than scientific advice, are not within the remit of the Committee. Further detail on this is provided in the Appendix²¹.

There is a great deal of international consensus on the challenges pandemics provide to population health. The key questions for decision-makers are where to prioritise efforts and resources, and where to place focus.

It is vital that efforts to improve future pandemic preparedness should draw on the experience of a wide range of stakeholders and of the public. Over the coming months, the Committee is planning to hold a series of workshops to engage with these groups and inform the final report of the Committee. This is outlined in figure 4 below.

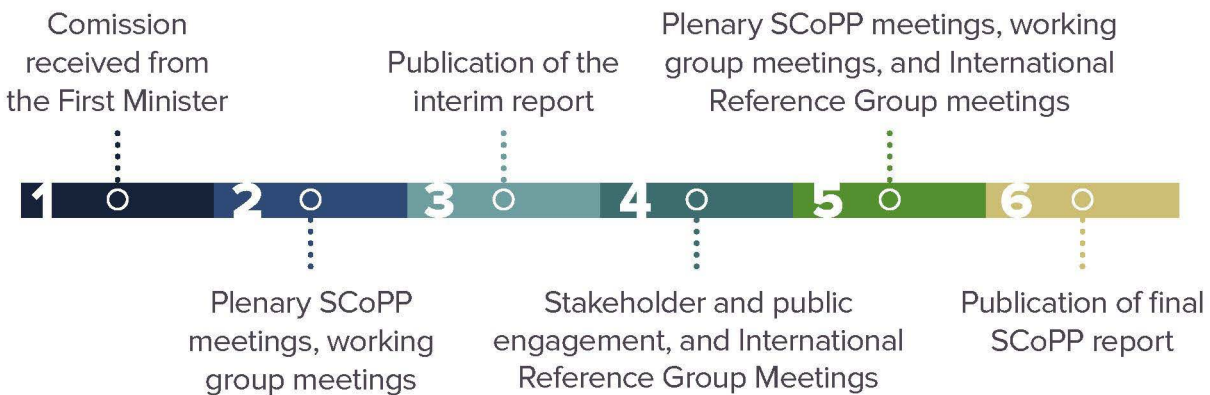


Figure 4. Timeline for responding to the First Minister's Commission

20 <https://www.gov.scot/isbn/9781804358764>

21 <https://www.gov.scot/isbn/9781804358764>



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