

SAGE Development Programme Internal Report – March 2023

Overview

This document sets out work completed under the SAGE Development programme. It provides an overview of lessons identified in the operation of SAGE and the Secretariat function in the Government Office for Science (GOS) and the work completed to address them. It also outlines how the SAGE Development Programme will transition into a ‘business as usual’ continuous improvement programme with appropriate governance structures in place to maintain accountability.

Introduction to the SAGE Development Programme

In March 2020, GOS began to improve Covid SAGE ways of working in response to the extended activation. In the summer of 2020, the GCSA and Chief Medical Officer (CMO) requested the capture of lessons identified since the beginning of the activation. This work to track lessons and improve SAGE became known as the SAGE Development Programme.

The lessons and recommendations addressed in the programme come from this point onwards and have been captured from the following:

GOS General Improvements	Since March 2020, the GOS team have identified improvements from exercises and reflection sessions.
SAGE independent observer and challenge	In Apr/May 2020 Professor Sir Ian Boyd attended SAGE as an independent observer to provide feedback on debate, challenge and ways of working in SAGE meetings.
Adrian Smith Review ^{[1][2]}	In May-Jul 2020 Adrian Smith undertook a review whilst the Covid response was ongoing. Individual and group sessions with Chief Scientific Advisors, SAGE participants and sub-group chairs were used to identify learning, and brief reports of each session were produced.
Covid-19 Science Advice ^[3] Legacy Review	An internal review in late 2020 to capture and embed relevant lessons learned in the provision of science advice during the Covid response. The review compiled lessons from 35 interviews with GOS staff, SAGE participants, National Academies, Devolved Administrations, and external partners.
SPI-B Review ^[4]	A further internal review in November 2021 which captured lessons on the administration and outputs of the SPI-B sub-group to contribute to learning from the SAGE Covid response with a focus on social and behavioural science.
SAGE Sub-group Review ^[5]	A review in February 2022, which gathered reflections and perspectives from SAGE sub-group participants.
Parliamentary Select Committee inquiries ^{[6][7][8][9]}	From the end of 2020 onwards, a series of Parliamentary Select Committee inquiries have been held related to Covid. Some of their recommendations relate to or have implications for SAGE.
GCSA priorities	In September 2021, the GCSA outlined seven thematic areas needing improvement post the SAGE Covid response.
SAGE participant Away Day	In September 2021, GO Science organised a discussion with over 30 SAGE and subgroup participants to reflect on major challenges and successes during the SAGE Covid activation

GOS has created a tracker which records all recommendations made and the actions taken to address them^[10]. The tracker is a live tool which the SAGE Secretariat use to capture learning and actions for continuous improvement of SAGE¹.

SAGE Development Workstreams

To deliver the SAGE development programme, lessons and recommendations were grouped into five overarching themes, each with specific workstreams. These were:

1. GOS as a Response Ready Organisation
2. SAGE Transparency
3. SAGE Secretariat and Sub-Group Ways of Working
4. SAGE Experts
5. Continuous Improvement and Audit Trail

The workstreams underneath these five themes were delivered in two phases:

- **Phase 1 [August 2020 – March 2022]:** This phase focussed on the creation of a repository of all key recommendations and identifying where changes should be made to address them. Changes to SAGE protocol, processes and templates were made so that any future activation would benefit from Covid learning.
- **Phase 2 [April 2022 – March 2023]:** This phase focused on addressing the more complex changes and those which required more time and/or cross-government engagement.

Long term management of SAGE

Phases 1 and 2 of SAGE development have been delivered as standalone work and delivered improvements for SAGE ways of working. However, there is a need for long term continuous learning and improvement of SAGE. Any work remaining at the end of March 2023 will be incorporated into this programme of work.

In Spring 2023 GOS will establish an internal governance board to oversee SAGE improvements and readiness, chaired by the Director of GOS and with external representatives to bring challenge. The board will meet quarterly and oversee three areas of work: i) continuous improvement, ii) training and exercising, and iii) preparedness.

- For **continuous improvement** of SAGE, GOS will identify lessons and recommendations after each SAGE activation, exercise or period of preparation for escalating risks. Learning and action to be taken will be captured in the SAGE Development Actions Tracker. There will be permanent staff resource allocated to this work, ensuring the tracker is maintained and actions are assigned and delivered.
- For **training and exercising**, GOS will deliver an annual exercise programme which tests processes and practices and trains staff. This exercise programme will augment participation in national exercise programmes with a regular rhythm of internal exercising. GOS will maintain an internal and external trained surge capability (“reservists”) to ensure it is always able to effectively staff the SAGE secretariat at scale.
- For **preparedness**, GO-Sciences National Security and Resilience Team (NSAR) will report to the board on its ongoing risk monitoring and risk-specific preparedness work to ensure GOS remains focussed on priority risks.

¹ The most recent learning captured has been from the National Power Outage exercise in November 2022.

The Board will also oversee delivery of the remaining work in SAGE development which continues beyond the end of March 2023. This includes:

- Review how SAGE advice is communicated to ministers, senior officials and the public to see if there are ways to improve this.
- Finalise the revised SAGE Expert List and ensure diversity monitoring is working effectively.
- Facilitate appropriate external review of SAGE processes, whether as a one-off review or as part of new governance.
- Support CO to conduct a full review of the Enhanced SAGE guidance.

Summary of SAGE Development Programme

1. GO-Science as a response ready organisation

During the Covid response, GO-Science needed to rapidly expand the SAGE secretariat to manage the pace and volume of work that was required to operate SAGE effectively.

a. Staffing

Lesson: GOS needs to be able to rapidly draw in sufficient trained staff to run the SAGE secretariat, accounting for potential long-term, large scale or concurrent responses.

Action taken: GOS has established staff surge and training systems which allow it to draw on a large pool of people as reservists.

- All staff in GOS are now part of the surge pool, with exceptions for personal circumstances. Guidance is in place for activation of surge which has been tested through exercising^[11].
- Staff are trained through regular training sessions and participation in exercises.
- GOS Corporate team maintain an external surge pool, drawing on other government departments and Public Sector Research Establishments (PSREs).

Next steps: The GOS Corporate team is reviewing the external surge pool to account for MOG changes including the creation of DSIT. Testing of the surge pools will be integrated into exercising.

b. Wellbeing

Lesson: During intense crisis response, SAGE secretariat staff need additional wellbeing support.

Action taken: GO-Science's overall wellbeing offer for personal resilience has been strengthened and a wellbeing offer has been produced specifically for staff working in response roles^[12]. GO-Science also now has access to the counsellor for the National Security community (retained by CO).

Next steps: The wellbeing offer will be reviewed for effectiveness after the next SAGE activation.

c. Risk monitoring and triggers

Lesson: Improving GOS risk escalation methods and triggers will mean the organisation can respond more quickly in future crises.

Action taken: GOS has updated the Risk Dashboard^[13] to allow more proactive and auditable risk tracking. This has been informed by x-HMG engagement to improve GOS's understanding of how SAGE can best support Lead Government Departments (LGDs) for different risks. Changes to the risk dashboard include:

- SAGE triggers for key risk areas which have been agreed with the GCSA and LGDs.
- An auditable record of risk status, key contacts and any situational updates.

Next steps: GOS will review the risk tracking dashboard on a weekly basis and escalate emerging issues to the GCSA as needed. SAGE triggers will be developed for remaining priority risk areas.

d. Knowledge and Information Management

Lesson: Improving the ability to store, retrieve and search information will support the SAGE secretariat and participants.

Action taken: Reviewed commercially available information management software which concluded that Microsoft SharePoint was the best option to meet requirements^[14]. New Information Management guidance^[15] is now in place for SAGE secretariat, supported by:

- Training for all secretariat staff.
- A dedicated information manager to support a SAGE activation.
- A GOS stakeholder engagement tool^[16]

Next steps: The GOS Information Manager will review processes in place every 6 months, reporting findings and action taken to the Director-chaired governance board.

2. SAGE Transparency

During Covid, the GCSA decided that SAGE minutes and advice would be made available to the public within a short timeframe of being delivered to policy colleagues.

Lesson: SAGE minutes and papers should be released to the public as soon as possible.

Action taken: GOS has produced new internal guidance for SAGE transparency^[17]. This states that GOS should publish as much information as possible in a timely manner, taking into account national security implications and the formulation of policy.

Next steps: GOS will continue to promote the need for transparency of advice with government partners.

3. SAGE Secretariat and Sub-Group Ways of Working

The unprecedented scale and complexity of the Covid SAGE response meant new processes were developed which needed to be captured and built into SAGE ways of working for the future.

a. Secretariat processes and guidance

Lesson: GOS should improve internal guidance, processes and templates to enable more rapid and effective SAGE activation, operation and scale-up.

Action taken: The following suite of internal documents has been developed for use by SAGE Secretariat:

- SAGE Guidance^[18] which provides detailed information on all aspects of planning, activation, and post-SAGE activity.
- SAGE Standard Operating Procedure^[19], a simple step-by-step guide for running an initial SAGE meeting that can be used during a response.
- Updated procedures and guidance^[20] for commissioning, establishing and running SAGE sub-groups.
- Updated templates for SAGE papers, briefs, minutes and draft sub-group Terms of Reference^[21].

Next steps: The new documents will be used in all training and exercising going forward. All relevant SAGE documents will be reviewed annually and after any SAGE activation. The review will assess the level of staff awareness of the documentation and how it was used during SAGE activations and exercises.

b. SAGE actions

Lesson: A standardised method for monitoring SAGE actions and ownership will help ensure timely delivery of actions.

Action taken: GOS has developed a new action tracker^[10] for SAGE meetings to record action details, reference information, ownership, deadlines and completion status. The process for its use is included in the SAGE Guidance.

- The SAGE Secretariat will hold action owners to account for completion by the recorded date.
- Cabinet Office will be informed of actions and action owners.

Next steps: The process will be reviewed as part of the annual cycle and when used in any exercises or SAGE activations.

c. SAGE docking point

Lesson: The docking point for SAGE within central crisis response structures should always be clear and explicit in guidance and doctrine. The usual arrangement, which existed prior to the pandemic, is that SAGE is an advisory group to COBR, with Cabinet Office therefore being the main customer. This is crucial for the commissioning and delivery of advice throughout a crisis.

Action taken: Cabinet Office has confirmed SAGE is responsible for the provision of scientific advice and accountable to COBR, with COBR, or the relevant lead Cabinet Office committee, responsible for ensuring that SAGE advice is considered across government. This will be reinforced in any doctrinal changes, including the Enhanced SAGE Guidance. Cabinet Office is finalising a factual update to the Enhanced SAGE Guidance^[22] to correctly reflect changes in SAGE ways of working since it was published in 2012 so it remains fit for purpose.

Next steps: Cabinet Office, as owners of the Enhanced SAGE Guidance, will undertake a full review of the Enhanced SAGE Guidance. This will be scheduled to incorporate recommendations from the Covid Inquiry and the Crisis Capabilities Review. GOS will agree with Cabinet Office a timetable for regular review after this.

d. Science advice communication

Lesson: Review how SAGE advice is communicated to ministers, senior officials and the public to see if there are ways to improve.

Action: GOS is collaborating with the British Academy on its project 'Science, Trust and Policy-making'. GOS is starting a project to assess SAGE advice communication and make recommendations on areas of improvement that are identified. The primary focus of the work is on communicating advice into Government and the second focus will be on public communication.

Next steps: The project will be delivered by the end of 2023 though any key points of learning identified before then will be implemented where appropriate.

4. SAGE Experts

Many participants attended SAGE during Covid and needed support. Participants came from diverse disciplines and such an approach to diversity needs to be maintained.

a. Diversity

Lesson: Scientific expertise should come from a wide range of disciplines, backgrounds (including protected characteristics), career stages and experiences to avoid groupthink and provide effective challenge.

Action taken: A revised method for identification, selection and induction of SAGE participants was developed, including:

- A “SAGE Experts Selection Log’ to record the rationale for participant selection for audit and transparency.^[23]
- A “Guide to Accessing Scientific Expertise” which outlines how to source a more diverse range of expertise.^[24]
- Identification of learned societies and expert bodies to approach to broaden the SAGE expert list.
- Migrating the SAGE experts list to a new platform which allows for easier filtering, auditing and updating.
- A prompt in the first agenda for any SAGE activation to consider matters of inequality and different population groups.

Next steps: The SAGE expert list will be updated by September 2023 to ensure GOS has a more diverse range of experts to contact in future. The list will be updated through engagement with learned societies, professional bodies and industry and reviewed annually going forwards. Diversity monitoring for future SAGE participants will be in place by April 2023.

b. Support and guidance

Lesson: During the Covid response some SAGE participants received an unprecedented level of public attention and scrutiny. There was a need for SAGE participant guidance to set clearer expectations of conduct and advise on issues such as media engagement, security and wellbeing.

Action taken: GOS produced the “SAGE Participant Guidance and Expectations”^[25] document which sets out expectations on conduct and includes advice on media handling, wellbeing and security.

Next steps: The guidance will be reviewed as part of the annual cycle and after any SAGE activations.

5. Continuous improvement and audit trail

Whilst areas for improvement in SAGE process were identified and acted upon before 2020, the level of detail of activities relating to improvement within records varies. Recommendations are captured in documents, but it is sometimes difficult to determine precisely what actions were taken against them.

Lesson: GOS needs a single clear record of recommendations and what actions have been taken to address them.

Action taken:

- The SAGE Recommendations Tracker^[10] was created to log internal and external recommendations, decisions and actions to ensure lessons are learned and change implemented. It now provides a comprehensive and auditable record of all recommendations and improvement actions since early 2020.
- A new continuous improvement process^[26] has been introduced for capturing and addressing lessons from any Precautionary SAGE, SAGE, exercise or other internal or external activity with implications for SAGE (e.g. Select Committee or Public Inquiry).

Next steps: GOS will conduct quarterly reviews of the SAGE Recommendation Tracker to monitor progress against all recorded lessons. Progress will be reported quarterly to the new SAGE governance board.

Annex A: References

Title and link
Internal/External Reviews and Reports
[1] Adrian Smith Review – Evidence Summary
[2] Adrian Smith Review – Recommendations
[3] The Covid-19 Science Advice Legacy Project, November 2021
[4] SPI-B Review, November 2021
[5] SAGE Subgroup Review: The COVID-19 Response, February 2022
[6] House of Commons Science and Technology Committee, December 2020
[7] House of Commons Public Administration and Constitutional Affairs Committee, March 2021
[8] AMS: Covid-19 – Preparing for the Future, July 2021
[9] House of Commons Health & Social Care, and Science & Technology Committee, September 2021
SAGE Development Documentation
[10] SAGE Dev Recommendations Tracker
[11] SAGE Surge Guidance
[12] NSAR Wellbeing Offer
[13] NSAR Risk Dashboard
[14] Review of Corporate Memory Products
[15] Information Management Guidance
[16] Contacts of GO-Science
[17] SAGE Transparency Guide
[18] SAGE Guidance
[19] SAGE Standard Operating Procedure
[20] Setting up a SAGE Sub-Group
[21] Emergency Templates Folder
[22] Enhanced SAGE Guidance: A Strategic framework for the Scientific Advisory Group for Emergencies (SAGE), October 2012
[23] SAGE Experts Selection Log
[24] Guide to Accessing Scientific Expertise
[25] SAGE Participant Guidance and Expectations
[26] Continuous Improvement Process

Annex B: Glossary of acronyms

BAU	Business as Usual
CMO	Chief Medical Officer
CO	Cabinet Office
COBR	Cabinet Office Briefing Rooms
DG	Director General
EDS	Economic and Domestic Secretariat
GCSA	Government Chief Scientific Adviser
GOS/GO-Science	Government Office for Science
LGD	Lead Government Department
NSAR	National Security and Resilience (within GOS)
NSS	National Security Secretariat
OGD	Other Government Department
SAGE	Scientific Advisory Group for Emergencies
SPI-B	Scientific Pandemic Insights Group on Behaviour