UK COVID-19 Public Inquiry

Public Health Scotland Corporate Statement in response to Module 1 Rule 9 request

---

Version 6 (Final)

3rd May 2023

Contents

1. Introduction and context

1.1. Background to Public Health Scotland's response

1.1.1. Public Health Scotland (PHS) works to protect and improve the health of the people of Scotland, and to reduce health inequalities. The organisation has been operational since 1st April 2020, building on the strong legacy of the three public health bodies that joined to form the new public health agency:

- Health Protection Scotland
- Information Services Division
- NHS Health Scotland

1.1.2. As set out in the Public Health Scotland (PHS) Corporate Narrative (JM/1-INQ000101049), PHS became a legal entity on 7th December 2019, when the Public Health Scotland Order 2019 (JM/2 - INQ000147858) came into force. This means that during the period covered by Module 1 of the UK Public Inquiry (11th June 2009 to 21st January 2020), PHS was not operational. National leadership to protect the Scottish public from infectious diseases and environmental hazards at that time was the remit of Health Protection Scotland (HPS), which was part of NHS National Services Scotland (NSS).

1.1.3. In the preparation of this document, PHS and NSS have worked closely in order to cover the full scope of the information requested by the first Rule 9 for Module 1. This is both because the majority of staff, archives and corporate memory of HPS now sits within PHS, but also because the scope of the request extends beyond the remit of HPS as it then was. HPS provided a lead contribution to preparing for high-consequence infectious diseases, epidemics, and pandemics, whilst the preparation for general civil emergencies and whole system civil emergencies was led by wider NSS teams.

1.1.4. My name is Dr James (Jim) McMenamin. I was appointed as a Consultant Epidemiologist to the Scottish Centre for Infection and Environmental Health (the precursor to HPS) in 2003 and at the time to which this statement relates, I was the Interim Clinical Director and strategic lead for the Respiratory Viral team within HPS, and as such was responsible for responding to seasonal and pandemic

influenza.[1] I reported to Dr Mahmood Adhil, Medical Director of NSS Public Health Intelligence (PHI).

1.1.5. I am now the Head of Infections Service at PHS, the Strategic Incident Director for COVID-19, and until it formally stood down on 27th April 2023, I was the chair of the COVID-19 National Incident Management Team reporting to the Scottish Government's Chief Medical Officer (CMO). I have worked as a consultant epidemiologist in PHS and its predecessor organisations for two decades in the field of infectious disease.[2] I am a Medical doctor with a Masters in Public Health, and I am an Honorary Clinical Senior Lecturer in the School of Health and Wellbeing at the University of Glasgow.[3]

1.2. History of Health Protection Scotland

1.2.1. HPS can trace its history back to 1969 and the creation of the Communicable Diseases (Scotland) Unit, a specialist unit tasked with conducting surveillance of communicable infections.[4] The unit was one of the first specialist national units in the world set up to support the investigation, control and prevention of infectious outbreaks. It was created as a result of high-profile incidents such as the 1964 Aberdeen typhoid outbreak, where more than 500 cases were identified and many were quarantined in hospital.

1.2.2. The Communicable Diseases (Scotland) Unit was set up in Glasgow as a national centre of expertise to carry out the surveillance of communicable disease across all of Scotland, co-ordinating the collection of information on new cases and outbreaks, and sharing intelligence on new sources and causes of infection. This was done to improve knowledge and understanding of how diseases spread and how they could be controlled.

1.2.3. The unit evolved over the next 50 years, firstly by absorbing its sister unit for environmental health and expanding its role in helping protect the public from non-

[1] The HPS organogram as at 2009 can be found in Appendix A and B.

[2] Public Health Scotland Webpage - Clinical and Protecting Health - Our structure - Our organisation (JM/3 - INQ000147833)

[3] University of Glasgow Webpage - Jim McMenamin Staff Page (Accessed January 2023) (JM/4 - INQ000147863)

[4] HPS Website News Article - Scotland celebrates 50 years of its national unit for health protection (December 2019) (JM/5 - INQ000147845)

infectious environmental threats to health. In 1994, the unit was re-named the Scottish Centre for Infection and Environmental Health and finally became Health Protection Scotland in 2005.

1.2.4. The Memorandum of Understanding between the Scottish Government and HPS in March 2007 (JM/6 - INQ000147837) explained the difference between the new organisation and its predecessor:

> 'SCIEH in the past had a role mainly of surveillance and of the provision of expertise by request. This was done primarily in support of the health protection activity of the 15 NHS area boards. HPS, on the other hand, will have a proactive role, co-ordinating health protection activity in Scotland and promoting and assuring the quality of local and regional health protection arrangements.'

1.2.5. NSS undertook an organisational restructure which was completed during 2013/14. This involved the creation of a smaller number of strategic business units, and saw HPS joining with Information Services Division (ISD) to form the Public Health and Intelligence (PHI) Strategic Business Unit (SBU).[5]

1.2.6. HPS operated out of a single unit in Glasgow during much of its existence, initially in Clifton House, Clifton Place (the same premises as had been occupied by the SCIEH), then at Meridian Court, 5 Cadogan Street. To accommodate the increasing size of the Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) team during the time HPS was based at Clifton House, a second office was opened in Cadogan Street before the move to Meridian Court in June 2011. A small number of HPS staff were based at the NSS office at Gyle Square, 1 South Gyle Crescent, Edinburgh.

[5] The senior team structure for PHI as at 2012 can be found in Appendix C.

1.3. Health protection structures and arrangements

1.3.1. The creation of HPS in 2005 was part of the development by the Scottish Government of new arrangements for health protection that were designed to align to the rest of the UK and have the capabilities to respond to major events such as a pandemic.[6] The Health Protection Advisory Group (HPAG) was set up in the same year as part of this new system. It was an independent group that advised the CMO and the Board of NSS on health protection priorities relating to diseases and health problems, and service delivery in health protection.

1.3.2. The Scottish Government established a Health Protection Stocktake Working Group in 2010 to examine the arrangements put in place in 2005 and ensure that they were still fit for purpose.[7] The working group published an interim report in 2012[8] but although much of the analysis was supported, differing views emerged in relation to the report's recommendations and the final report was not implemented.

1.3.3. Another group was established in late 2012 and tasked with reviewing the Health Protection Stocktake Report and making recommendations on the appropriate means to implement its conclusions. This group operated under the auspices of the National Planning Forum, which was a mechanism for NHS Boards and the Scottish Government to 'jointly agree on how to address planning issues which need to be tackled on a 'supra-regional' or nationwide basis'.[9] The report[10] of this new group was published in late 2013. It agreed with the original report that the key areas for strengthening health protection arrangements in Scotland were:

- The development, quality and effectiveness of health protection services
- High quality professional practice
- Workforce development
- Resilience and capacity, both in major outbreaks and in routine on call

[6] See Policy and Legislative Timeline in Appendix E.

[7] Health Protection Scotland. Scottish Health Protection Network (SHPN) Portfolio Definition Document. 2015. (JM/7 - INQ000101056)

[8] Scottish Government. Health Protection Stocktake Working Group Interim Report. 2011. (JM/8 – INQ000147859)

[9] National Planning Forum Webpage (Accessed January 2023) (JM/9 – INQ000147848)

[10] Scottish Government. The NPF Public Health Stocktake Sub-Group Report. 2012. (JM/10 – INQ000147828)

1.3.4. Both reports considered a series of options in terms of the structure required to support strengthening these areas and concluded that wholesale structural change was not required. Instead, the recommendation was made to develop:

- A national group with oversight of the health protection arrangements in Scotland, which would be referred to as the Health Protection Oversight Group.
- An obligate network for health protection in Scotland.

1.3.5. The Scottish Government established the Health Protection Oversight Group (HPOG) in August 2014. The HPOG then tasked HPS with the development of a framework for implementing the obligate network. HPS delivered this framework[11] in December 2014 and, following the approval of the HPOG, went on to successfully establish the Scottish Health Protection Network (SHPN)[12] in 2015.

1.3.6. The SHPN is an obligate network that HPS (and now PHS) co-owns with stakeholders including NHS Boards, Local Authorities, the Scottish Government, NHS Education for Scotland, the Scottish Environment Protection Agency, Food Standards Scotland, and ARHAI (see section 1.3.1 below). In this context an obligate network is a formalised arrangement between organisations that secures access to sustainable health protection services for the whole population served by these organisations.

1.3.7. The network is founded on the following principles:

- Commitment and clarity of responsibilities at different tiers
- Supporting delivery and driving improvements through sharing of lessons learned
- A core purpose of consistency, standards of best practice, efficiency and resilience

1.3.8. The SHPN works to strengthen health protection in Scotland by focussing on the development, quality and effectiveness of health protection services, high quality professional practice, workforce development, and resilience and capacity, both in major outbreaks and in routine on call work.

---

[11] Health Protection Scotland. Scottish Health Protection Network Portfolio Definition Document (December 2015). (JM/7 - INQ000101056)

[12] Health Protection Scotland - About Us Webpage (JM/11 - INQ000147844)

1.3.9. Regional and Local Resilience Partnerships (RRPs/LRPs) are the principal mechanisms for multi-agency coordination under the Civil Contingencies Act 2004 (JM/12 - INQ000147860) and the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005 (as amended) (JM/13 - INQ000147857). They promote co-operation between organisations in preparation for and responding to emergencies.

1.3.10. A Resilience Partnership may be activated to deal with the wider consequences of the emergency and ensure that the multi-agency response is well coordinated and effective. Resilience Partnerships can be convened at a local level or across a wider area depending on the nature of the incident and organisations involved. Resilience Partnerships are comprised of representatives from Category 1 and Category 2 responders, which are key organisations responsible for ensuring the effective management of emergencies, as well as other organisations and groups who have an important role in the context of resilience. I shall return to this below when considering HPS's role in responding to an emergency.

1.3.11. HPS worked in partnership with NHS Education for Scotland (NES) from its inception in 2005 to joining PHS in 2020, and this partnership continues within PHS. The aim of the partnership is to bring strategic leadership and coordination to health protection workforce education and development. The two organisations jointly appointed a Programme Director in 2017 to drive forward the work.

1.3.12. In part in response to major incidents such as the Ebola and H1N1 pandemics, and recognition that staff groups were undertaking operational roles that had not previously been expected of them, HPS and NES worked together to take a proactive approach to supporting this changing health protection workforce. The aim was to promote and support a resilient, competent and confident workforce equipped with 21st century knowledge and skills. This resulted in the publication of 'Workforce education development for Health Protection in Scotland: a refreshed strategic approach for 2017-2022' (JM/14 - INQ000145708) in May 2017.

1.4. Move to Public Health Scotland

1.4.1. All staff and functions of the PHI strategic business unit moved to PHS on 1st April 2020 with the important exception of the Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) function which remained within NSS.[13] In addition, the Customer Engagement and Development staff employed within the NSS Strategy, Performance and Service Transformation SBU who provided a Communications service to the PHI SBU were transferred to PHS.

1.4.2. The Cabinet Secretary for Health and Sport decided, in light of the issues under review in the Hospitals Inquiry, that ARHAI would remain in NSS pending further consideration. The Cabinet Secretary for Health and Sport's rationale for ARHAI staying within NSS was provided by the Scottish Government and COSLA when they consulted[14] on the establishment of PHS in Summer 2019:

> 'In light of recent infection incidents and the associated independent external review that has been commissioned, the Cabinet Secretary for Health and Sport is considering what provision may be needed at the national level in future in relation to infection prevention and control. Decision-making around the ARHAI component of HPS will therefore require further consideration.'

1.4.3. ARHAI works to improve the health and wellbeing of the population of Scotland by reducing the burden of infection and antimicrobial resistance.[15] Their work is therefore closely aligned to ours and we have continued to work closely together since April 2020. An options appraisal is planned for 2023 to consider the optimal future for the ARHAI service.

1.4.4. For example, PHS collaborated with ARHAI on the development of guidance for Infection Prevention and Control (IPC) in health and social care settings and provided links to ARHAI guidance on IPC matters. ARHAI provided links to PHS guidance on health protection matters. This ensured that both sets of documentation provided the most up to date guidance in healthcare and social

---

[13] See section 4.2.12 – 4.2.14 of the PHS Corporate Narrative (JM/1 – INQ000101049).

[14] Scottish Government / COSLA. New national public health body 'Public Health Scotland': consultation. Page 38 (May 2019) (JM/15 - INQ000147835)

[15] NSS Webpage - Antimicrobial Resistance and Healthcare Associated Infection Scotland (Accessed January 2023) (JM/16 - INQ000147831)

care settings (where ARHAI is responsible) and in the wider settings in which Health Protection Teams (HPTs) operate (HTPs being the primary audience of PHS guidance). IPC guidance is used by HPTs in managing care home and social care setting outbreaks, with PHS supporting when requested. Local IPC teams manage healthcare setting outbreaks and refer to ARHAI for national support.

1.4.5. The political decision that ARHAI would not be included in HPS's move to PHS conflicted the aims of public health reform. The aim of the public health reform in this regard was put as follows: "'Consolidating the national public health functions into a single body allows for a new, single public health brand and identity, with revitalised leadership. The body will be committed to partnership working, innovation and meaningful change across the whole system at national, regional and local levels."[16]

1.4.6. Total HPS staffing numbers (The sum of core & non-core funded staff) reduced between 2005 and 2020. This was the result of a number of factors, including the requirement placed on all NHS Boards by the Scottish Government to make Cash-Releasing Efficiency Savings (CRES), which resulted in an overall reduction in workforce numbers across NSS in order to achieve overall financial stability.

1.4.7. Workforce planning documents[17] indicate the following in relation to the HPS headcount:

- 158 in April 2009 (90.6 WTE core funded and 59.4 WTE non-core).
- 125 in August 2011(96.4 WTE core and 22.5 WTE non-core).
- 110 in March 2013 (94.6 core funded and 15.5 WTE non-core).
- Accordingly, over the three-year period, there was an increase of 4.0 WTE in core funded staff, a decrease of 43.9 WTE in non-core funded, resulting in a loss of 39.9 WTE.

1.4.8. Every year, divisions within each strategic business unit within NSS, including HPS, participated in workforce planning. In that regard, there was a rolling five-year workforce plan which was reviewed annually. The main aim of the plan was

---

[16] Scottish Government / COSLA. New national public health body 'Public Health Scotland': consultation. Page 5. May 2019 (JM/15 - INQ000147835)

[17] HPS Workforce Plan 2009 v1.0 (JM/17 INQ000148339); HPS Workforce Plan v2.1 (Final) 2012 (JM/18 - INQ000148340); HPS Workforce Plan v3.0 (2013 - Draft) (JM/19 - INQ000148341).

to define HPS's needs in terms of the future workforce and the changes and development that are required to ensure sustainability.

1.4.9. In order to continue to ensure that all staffing levels and skills were maintained at the optimal level to meet service demands and also remain affordable and effective, NSS adopted the Six Steps Methodology to Integrated Workforce Planning process developed by Skills for Health. This was embedded and applied across the organisation as a consistent methodology for the development of local service level Workforce Plans. The process contains the following 6 Steps:

- Defining the Plan (Step 1).
- Mapping Service Change: Service plans are reviewed to assess the workforce implications (Step 2).
- Defining the Required Workforce: The future workforce is described and tested for affordability, availability and adaptability (step 3).
- Understanding Workforce Availability: The current workforce and workforce trends are analysed (Step 4).
- Developing an Action Plan: The challenges faced in achieving the future workforce are detailed and actions to meet these challenges are identified. The local actions are brought together in an action plan (Step 5).
- Implement, Monitor and Refresh: Arrangements are made for implementation, monitoring and review (Step 6).

1.4.10. The HPS Workforce Plan 2018-2023[18] and 2019-24[19] drafts outline the drivers for change. These included the transition to the new national public health body, implications of Brexit, ageing workforce, improving productivity and efficiency through new technologies and flexing the workforce. It was acknowledged in these documents in section 3.4 'Improved Productivity and New Ways of Working' that "NHS Scotland organisations are required to do more with less, the pressures for higher performance and better quality is at the forefront of planning signifying that existing ways of working are not sustainable and significant transformation in service delivery and modernized working methods are required. As a result, HPS is facing a period of transformation, to modernise and improve service delivery, to

[18] Health Protection Scotland. HPS Workforce Plan 2018-2023 JM/54 INQ000182696 Page 8
[19] Health Protection Scotland. HPS Workforce Plan 2019-2024 JM/55 INQ000182698 Page 8

become more productive and efficient whilst sustaining our functional commitment and outputs."

1.4.11. 94 HPS staff were transferred to PHS on 1st April 2020, with the 40 staff based in ARHAI remaining within NSS as described above. ARHAI staff numbers had increased over the preceding years in response to increasing demands including recommendations following the Healthcare associated infection issues identified as a consequence of the Vale of Leven Inquiry[20].

1.4.12. The professional groupings of HPS staff includes:

- Consultants in Public Health (Medicine)
- Nursing staff
- Healthcare Scientists/Epidemiologists
- Project and Administrative staff
- Managers
- Data Analysts

1.4.13. The HPS structure as at December 2019 can be found in Appendix D.

1.4.14. Staff were transferred to PHS under the Transfer of Undertakings (Protection of Employment) Regulations 2006 (JM/20 - INQ000147861) as amended by the Collective Redundancies and Transfer of Undertakings (Protection of Employment) (Amendment) Regulations 2014 (JM/21 - INQ000147862) This is known as TUPE. TUPE provides for the protection of employees in the event of a change in the employer to ensure that their rights are safeguarded. Therefore all staff transferred to PHS on their current terms and conditions of employment.

1.4.15. PHS's opening budget and staffing levels were not sufficient for PHS to deliver the health protection response required by the pandemic. PHS submitted bids to the Scottish Government for additional funding. In 2020/21 this totalled £11.3 million, which covered costs such as:

- Additional staff resources, mainly in Health Protection and Data Analytics
- Digital Transformation
- Genomics
- Marketing campaigns

[20] Scottish Government's Response to the Vale of Leven Hospital Inquiry Report. 2015. (JM/56 - INQ000182703)

- National Contact Tracing
- School Surveillance
- Serology

1.4.16. The plans put in place for the organisation over the years leading up to the launch of PHS had to be rapidly revised in the context of the pandemic. Providing a robust and effective contribution to Scotland's response to COVID became the organisation's over-riding priority, together with protecting staff wellbeing.

1.4.17. When PHS was launched at the outset of the pandemic, on 1st April 2020 (see chapter 6 of the Corporative Narrative: PHS April 2020 – November 2022), the benefits of the creation of one unified public health agency were immediately apparent. Whilst the organisation's response to the pandemic had been led very much by former HPS staff, by April the Clinical and Protecting Health Directorate (CPH), as well as teams and resources in other parts of the organisation were pivoting to bolster and support the health protection response.

1.4.18. Corporate staff in the Strategy, Governance and Performance (SGP) area took on temporary work assignments in CPH in order to lend programme and project management support. Health improvement experts in the Place and Wellbeing Directorate led on work to reduce the wider harms associated with COVID-19, with a particular focus on work to reduce the inequalities associated with the pandemic. Data and intelligence specialists in the Data and Digital Innovation (DDI) Directorate worked with colleagues across the organisation to develop the necessary data reporting mechanisms at pace.

1.4.19. Providing a robust and effective contribution to Scotland's response to COVID-19 became the organisation's over-riding priority, together with protecting staff wellbeing. Staff worked incredibly hard to help protect the public's health from Covid-19. Internally, the links between the different teams and directorates were crucial to the speed and agility with which the organisation was able to respond. In addition, there was effective collaboration with staff in Scottish Government, local authorities, NHS territorial boards, special NHS boards and other key stakeholders.

1.5. Public Health Reform

1.5.1. The creation of PHS was part of a wider programme of public health reform in Scotland.[21] HPS colleagues – myself included – advocated throughout the reform period for recognition of the importance of actions to protect the public from outbreaks of communicable disease and incidents involving non-communicable environmental hazards to public health. Notably when the national Public Health Priorities,[22] launched in June 2018 after a period of stakeholder engagement, focussed on health improvement activities with no priority assigned to actions to protect health.

1.5.2. Data and information were considered as part of pre-pandemic planning. Data was identified as a critical area during the Public Health Reform Programme which led to the creation of PHS. Section 5 of Public Health Scotland (PHS) Corporate Narrative, (JM/1 – INQ000101049) on the Public Health Reform Programme, set out the intent and purpose of establishing PHS. In this, PHS outlines the body will be committed to partnership working, innovation and meaningful change across the whole system at national, regional and local levels. By including the national data and intelligence function within the new body, ensured that all public health activity and performance measurement was brought together in one place, providing a basis for innovation and ambition around digital capability more generally.

1.5.3. PHS was able to utilise the skills and expertise from across the legacy organisations to respond to the pandemic. The speed and scale of the pandemic initially presented difficulties as many of the data collections systems and processes used in NHS Boards and PHS were legacy in nature and not geared up for handling the volume of data we experienced during the pandemic. However, the necessity to respond at pace to provide timely data on the pandemic meant that we were innovative in improving the systems and processes, including greater use of automation to streamline data collection and reporting processes.

---

[21] Please refer to the PHS Corporate Narrative (JM/1 – INQ000101049) for background on the Public Health Reform programme.

[22] Scottish Government / COSLA Scotland's public health priorities - The reform programme - Public Health Reform Webpage (June 2018) (JM/22 - INQ000147856)

2. Scotland's pandemic preparedness operating context

2.1. Global

2.1.1. The World Health Organization (WHO) influenza preparedness plan[23] sets out global guidance for responding to an influenza pandemic.

2.2. UK

2.2.1. At a UK level, the United Kingdom Government, with input from the devolved administrations, produced the National Framework for responding to an influenza pandemic in 2007 and later updated to the UK Influenza Pandemic Preparedness Strategy in 2011. This proposed an updated, UK-wide strategic approach to planning for and responding to the demands of an influenza pandemic. This was based on the WHO guidance and was supported by health protection guidance and scientific work principally undertaken by the Health Protection Agency (which became part of Public Health England in 2013) with input from HPS and our equivalents in the other devolved administrations.

2.3. Scotland

2.3.1. HPS published a Health Protection Framework for the response to an influenza pandemic in Scotland in 2006 (JM/24 - INQ000101052). This aimed to facilitate joint working between HPS and territorial NHS boards. The framework set out the actions that would be taken by HPS and the Health Protection Teams in each of the territorial NHS boards at each WHO designated pandemic influenza alert phase and each UK Alert Level. The framework was closely aligned with the Health Protection Agency's Influenza Pandemic Contingency Plan. This reflected a deliberate approach to coordinate health protection activity across the UK.

2.3.2. The Scottish Government asked HPS to undertake a quality assurance exercise in 2006 in order to establish NHS Scotland's level of preparedness to respond to an influenza pandemic. It involved reviewing the performance of the NHS in developing and implementing the strategic plans and processes necessary to coordinate an overall response to pandemic influenza with a particular emphasis

[23] World Health Organization. Pandemic Influenza Preparedness and Response (2009) (JM/23 - INQ000147830)

on health protection processes. The report highlighted the considerable progress made in the previous three years especially on overall strategic decision-making by NHS Boards. HPS identified that more work was needed on acute paediatric and primary care services, and on containing spread in the early stages of a pandemic.

2.3.3. The Scottish Government published the Pandemic Flu Scottish framework for responding to an influenza pandemic (JM/25 – INQ000147825) in November 2007. It presented the government's overarching strategic objectives, the roles and responsibilities of the key responding agencies, the organisational arrangements for coordinating their efforts and the actions to be taken at each phase of the response. The framework was supported by a wide range of accompanying national planning and guidance documents. This was subsequently superseded by the UK Influenza Pandemic Preparedness Strategy in 2011.

2.3.4. The Scottish Government Health Department was defined as responsible for strategic coordination and overall direction of the health response in Scotland. Key decisions were to be made by Ministers within the UK Civil Contingencies arrangements designed to manage a range of national emergencies.

2.3.5. Advice on an infection's epidemiological and clinical features and the levels and likely duration of virus circulation in the population was to be provided by UK mechanisms. The main source of scientific advice was to be the Scientific Advisory Group on Emergencies (SAGE), which I shall return to later in this statement.

2.3.6. The health protection remit of territorial NHS Boards was set out in a letter from the CMO[24] in 2007. To discharge it, NHS boards were to provide surveillance and investigation functions, risk assessment and communication, control measures, and incident management.

2.3.7. Following the pandemic of Influenza A (H1N1) in 2009-2010, rather than revisit the 2007 Scottish framework, Scotland, and the devolved nations, adopted the 2011 UK pandemic plan to assist consistency in planning and response. Subsequent

[24] Scottish Government Letter (2007) - NHS Boards' health protection remit (JM/26 INQ000147834).

UK and Scottish pandemic planning exercises in this 2011 UK pandemic plan would explore the assumptions made in detail, see section 5.

2.3.8. The Audit Scotland report, "NHS in Scotland 2020"[25] at page 20, highlighted that the Scottish Government did not include an influenza pandemic as a standalone risk in its corporate or health and social care risk registers and therefore there was a lack of clarity about how it would be managed and monitored, potentially impacting on the operational delivery of a future pandemic.

2.3.9. Under the 2007 framework and the 2011 pandemic plan, NHS boards were responsible for the health and community care response. They were required to make targeted and effective use of resources, to assess and treat all symptomatic patients rapidly and to implement an immunisation programme if necessary. They were responsible for providing data to monitor the impact of interventions. They were required to liaise very closely with HPS in identifying and monitoring the first few hundred cases of the emerging virus.

2.3.10. Both the 2007 framework and 2011 pandemic plan provided a template for responding to a threat under a number of planning and response assumptions. These dealt with a range within the boundaries of worst- and best-case scenarios. These provided planning teams with a scientific rationale for preparedness planning.

2.3.11. Our subsequent response to Module 2/2A will consider in detail how these assumptions were challenged by the reality of a pandemic of Covid-19. This includes the impact of national lockdowns and societal measures in advance of the successful roll-out of the vaccination programme that had very significant impact on reducing morbidity and mortality that otherwise would have been observed in the population.

2.3.12. Throughout the period of review in Module 1, the role of Health Protection Scotland was restricted to that of a commissioning role for national microbiological reference laboratories with no role for routine NHS microbiological diagnostic testing.

[25] Audit Scotland – NHS in Scotland 2020 (JM/57 – INQ000182702)

2.3.13. SARS CoV-2 was a novel pathogen and so there were no initial commercial or experimental tests available to detect it. As a consequence, an "in house" Polymerase Chain Reaction (PCR) test needed to be developed for Scotland and validated in collaboration with Public Health England (PHE). In Scotland, the use of these tests was initially restricted to Edinburgh and Glasgow NHS Scotland Specialist Virology laboratories.

2.3.14. At the time, support for NHS Scotland diagnostic labs lay with the individual health boards, with no national policy or oversight from Scottish Government. Thus, previous levels of investment in terms of numbers and types of staff, equipment and test repertoire varied and reflected historical, local decisions.

2.3.15. Given the need for national coordination and a consistent approach across Scotland, the PHS Public Health Microbiology team coordinated the initial planning for diagnostic test delivery for SARS CoV-2 in partnership with the NHS Scotland Specialist Virology Labs, and the Scottish Microbiology and Virology Network.

3. The role of HPS in an emergency

3.1. HPS Incident and Emergency Response Plan

3.1.1. The full functions of HPS were set out in a Memorandum of Understanding[26] between the Scottish Government and HPS in 2007. This includes the specific roles of HPS in different levels of emergencies. This has been summarised in each iteration of the HPS Incident and Emergency Response Plan since 2008, with the latest version of the plan published in May 2017.[27]

3.1.2. When acting in support of the response at NHS Board level, the specific role of HPS was to:

a. Liaise with the NHS Board Incident/Outbreak Control Teams
b. Advise NHS Boards on management of the emergency
c. Provide additional personnel to NHS Boards to facilitate the management of the emergency

[26] Scottish Executive. Memorandum of understanding between SEHD and Health Protection Scotland (HPS). March 2007. (JM/6 - INQ000147837)
[27] Health Protection Scotland. Incident and Emergency Response Plan - May 2017 (JM/27 – INQ000101053)

d. Work with NHS Boards to assure quality and effectiveness of steps taken, including structured debrief and final outbreak/incident reporting
e. Maintain overview of national situation
f. Where more than one NHS Board is involved, co-ordinate surveillance, investigation, risk assessment, risk management and risk communication
g. Keep relevant HPS staff advised of the situation, e.g., On Call, communications staff.
h. Keep PHI, NSS & other SBUs advised of the situation

3.1.3. When required to lead the response in the event of an emergency affecting more than one NHS Board area, or with Scotland- or UK- wide implications, the specific role of HPS was to:

a. Lead the management of the incident (and possibly run incident control team)
b. Co-ordinate surveillance, investigation, risk assessment and management and risk communication
c. Support Boards in discharging functions regarding health protection advice to multi-agency strategic groups eg. Regional Resilience Partnerships
d. Lead Scotland's participation in UK wide management arrangements
e. Support SG in providing HP advice to national strategic multi-agency groups.
f. Lead UK management of response in appropriate circumstances
g. Advise HPS staff of role and keep relevant HPS staff advised of the situation, e.g., On Call, comms staff
h. Keep PHI, NSS & other SBUs advised of the situation.'

3.1.4. As well as setting out the role of HPS in an emergency, the plan provided 'action cards' for specific staff, setting out their roles and providing a guide to immediate actions they might take in an emergency.

3.1.5. The plan was the responsibility of the HPS Preparedness and Response Group, which reported to the HPS Senior Management Team. It was shared with the Public Health and Intelligence (PHI) Resilience Group, PHI Clinical Governance group, NSS Resilience Forum and NSS Executive Management Team for information. It sat under the auspices of the corporate NSS Emergency Response

Plan (available from NHS National Services Scotland) and in the wider context of the NSS Pandemic Influenza Contingency Plan.[28]

3.2. Monitoring and communicating about emerging diseases

3.2.1. HPS (and now PHS) had a key role in monitoring emerging disease which are either reported internationally or domestically. The former includes the work undertaken by the Travel and International Health team in liaising either directly or through PHE with international bodies such as the WHO and the European Centre for Disease Prevention and Control (ECDC) for events of international significance. Domestic monitoring and reporting includes the work of all HPS topic-based surveillance teams. Communication on risks associated with these emerging diseases is an integral function of HPS/PHS. This includes communicating through professional channels to public health stakeholders and through the HPS/PHS communication team to communicate with the Scottish public.

3.2.2. HPS (and now PHS) utilised a suite of surveillance system components which allows clinical and laboratory reporting to be kept under close review. These have been incrementally developed over the years and also include less specific clinical syndrome reporting (e.g. secondary use of collated and submitted data from the National Telephony triage of calls to NHS 24 from the general public), severe clinical illness reporting reported by clinicians to local Health Protection Teams in Public Health departments relayed to PHS, and national laboratory reporting of pathogens from NHS boards to PHS through the Electronic Communication of Surveillance in Scotland (ECOSS).

3.2.3. A list of clinical syndrome conditions and laboratory pathogens subject to this reporting is outlined as annex to the Public Health (Scotland) 2008 Act. The provisions within this Act also allows the designation of a 'Health Risk State' by the CMO to require reporting by clinicians. This recognises that in the event of a newly emerging pathogen there may be no immediate laboratory test available for the detection of the infection as is important in epidemic and pandemic response to facilitate risk assessment and response.

[28] NHS National Services Scotland. Pandemic Influenza Contingency Plan. April 2009. (JM/28 - INQ000147850)

3.2.4. In addition, a number of enhanced surveillance programmes are in place for specific infections of particular public health concern. This includes utilising statistical approaches for providing potential early warning of increase in infection, which provides an opportunity for epidemiology staff to make an assessment of any next steps or investigation required.

3.2.5. Complementary systems are also in place to look at non-specific indicators of severe outcome which may be due to infective or environmental factors including comparing the number, location and age groups of observed versus expected numbers of deaths by all-cause mortality.

3.2.6. HPS (and now PHS) have in place strong collaborations with UK national and international public health bodies, including WHO, ECDC, Centres for Disease Control and Prevention (CDC), International Forum for Health Security, and the International Association of National Public Health Institutes (IANPHI) to allow sharing of information, including on current and emerging threats and risks. In addition, HPS/PHS shares and receives information on emerging diseases through established routes, including International Health Regulation (IHR) notifications, updates to the European surveillance portal for infectious diseases (EpiPulse) and weekly updates to the EuroMOMO scheme to support mortality monitoring. This aims to detect and measure excess deaths related to influenza, pandemic and other public health threats. HPS/PHS use such information sharing and exchanges to support preparedness, guidance and response arrangements.

3.3. Pandemic forecasting and modelling assumptions

3.3.1. The UK New and Emerging Respiratory Virus Threats (NERVTAG) group was involved in assessing the threats posed by emerging pathogens and acted as a review group for recommendations/review on key assumptions for pandemic preparedness. These assumptions were integral to the UK pandemic preparedness planning. The assumptions were made on a UK basis and included in the UK and Scottish Government pandemic plans and thereafter were cascaded to any of the stakeholder organisations for their consideration in implementing their own plans. Modelling output from SPI-M which reported to the UK SAGE group were a key component of this planning. PHS was represented on SPI-M by Chris Robertson, Professor of Public Health Epidemiology in the Department of

Mathematics and Statistics at the University of Strathclyde, and Head of Statistics at HPS.

3.4. Civil Contingencies Act 2004

3.4.1. HPS had responsibilities under the Civil Contingencies Act 2004 (JM/12 INQ000147860) and the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005 (as amended) (JM/13 - INQ000147857).

3.4.2. HPS was a Category 2 responder under the legislation, a status that PHS inherited from HPS in April 2020. Category 2 responders are required to cooperate with Category 1 and 2 responders in connection with the performance of their duties, including proper sharing of information.

3.4.3. The Scottish Government will shortly commence a review of Category 1 and Category 2 responders. PHS has requested that the Scottish Government recognises the unique position of PHS as the lead national public health agency for Scotland and considers conferring Category 1 responder status on the organisation.

3.4.4. Throughout the pandemic, PHS has played a substantial role in leading, managing, and co-ordinating national incidents and supporting local arrangements. PHS has been (and continues to be) required to provide a national response consistent with a Category 1 responder.

3.4.5. PHS response arrangements continue to embrace specific Category 1 duties, including developing and maintaining emergency plans and communicating with the public through 'warning and informing'. Additional requirements from partners, including Scottish Government, align more closely with duties of Category 1 responders, including creation of a plan for monitoring and responding to new SARS-CoV-2 variations and mutations.

3.4.6. The Scottish Government is supportive of this change, indeed the Scottish Government's Lessons Learned[29] report published in August 2021 identified consideration for extending Category 1 responder status to PHS as a key finding.

3.5. Providing expert advice

[29]Scottish Government. Lessons Identified from the initial health and social care response to COVID-19 in Scotland. August 2021 (JM/29 INQ000147847)

3.5.1. HPS was responsible for the provision of expert advice to the Scottish and UK Government on preparing for, and responding to, outbreaks and pandemics. HPS – and now PHS – is represented on a number of expert advisory groups to this end.

3.5.2. I (and my predecessors) represented HPS (and now PHS) on the Scientific Advisory Group for Emergencies (SAGE). SAGE provides independent scientific advice to support decision-making in the Cabinet Office Briefing Room (COBR) in the event of a national emergency. SAGE is an advisory group and does not make decisions or set policy. Its advice is limited to scientific matters and is a cross-disciplinary consensus view based on the best available evidence at the time.

3.5.3. HPS and thereafter PHS, is also represented on the Scientific Pandemic Influenza Group on Modelling, Operational sub-group[30] (SPI-M-O) by Chris Robertson, Professor of Public Health Epidemiology in the Department of Mathematics and Statistics at the University of Strathclyde, and Head of Statistics at HPS. This is a sub-group of SAGE that gives expert advice to the UK Government based on infectious disease modelling and epidemiology.

3.5.4. In addition to the groups on which HPS/PHS is represented, I have been a member of the New and Emerging Respiratory Virus Threats Advisory Group[31] (NERVTAG) in a personal capacity since its inception. NERVTAG was set up in 2014 to advise the UK Government on a wide range of subjects relevant to the threats posed by new and emerging respiratory viruses. NERVTAG replaced the former UK Scientific Pandemic Influenza Advisory Committee and has an extended remit to cover not only pandemic influenza, but any new, emerging (or re-emerging) respiratory virus threat to the UK.

[30] UK Government Webpage - Scientific Pandemic Influenza Group on Modelling, Operational sub-group. (Accessed January 2023) (JM/31 - INQ000147855)

[31] UK Government Webpage - New and Emerging Respiratory Virus Threats Advisory Group. (Accessed January 2023) (JM/32 - INQ000147849)

4. Outbreaks and pandemics 2009 – 2016: Lessons Learned

4.1. 2006 Bird Flu Outbreak

4.1.1. Following various avian influenza outbreaks HPS developed and produced the following guidance and reference documents in 2006 and 2007:

- Protecting Human Health in the event of an Avian Influenza Outbreak
- Management of returning travellers – Avian Influenza
- Management of persons presenting with febrile respiratory illness – Avian Influenza
- Management of personnel involved in Avian Influenza response

4.1.2. These provided practical guidelines for human health protection during an outbreak of avian influenza for a number of agencies, including Animal Health, Health Boards, Local Authorities, and the Scottish Government. The latter three documents were further updated in 2015 and remain extant.[32]

4.2. 2009-2010 Swine Flu Pandemic

4.2.1. In December 2010, HPS published a report[33] on the national coordination of the health protection response to the 2009-2010 Swine Flu Pandemic. It was designed to act as a reference for the management of future pandemics, and includes:

- a description of the pandemic in Scotland
- information on how it was monitored and investigated, risks assessed, control measures put in place, communications established and how the health protection responders coordinated
- an indication of lessons learned
- conclusions about how well objectives were achieved

---

[32] i) Health Protection Scotland. Investigation & management of possible human cases of avian influenza A/H5N1, in returning travellers. (JM/33 – INQ000147827)
ii) Health Protection Scotland. Investigation & management of possible human cases of avian influenza A/H7N9, in returning travellers (JM/58 - INQ000130739)
iii) Health Protection Scotland. Investigation & management of possible human cases of avian influenza A/H5N1, in returning travellers (JM/59 – INQ000130738)

[33] Health Protection Scotland. The Pandemic of Influenza A (H1N1) Infection in Scotland 2009-2010. A Report on the Health Protection Response. (December 2010) (JM/34 – INQ000130736)

- recommendations on how Scotland can help improve the handling of a further pandemic or like event, the annual seasonal flu programme and health protection services in general

4.2.2. The report highlighted that audits of preparedness, developing staffing and IT infrastructure, and establishing helplines all worked well. Improvements were identified as being needed around designating a coordination lead for the response, clarifying strategic, tactical and operation roles of responders, and defining demands on capacity associated with activation of and initial stages of response.

4.2.3. The following recommendations were made around the development of health protection services in Scotland:

- HPS should review the costs and benefits of establishing a serum bank versus specific serological investigation to estimate infection rates and levels of susceptibility to major infectious agents.
- Scottish Government should develop a framework for dealing with the governance and ethical issues related to outbreak investigation.
- HPS should review the scope for further developing the monitoring of mortality indicators in health protection.
- HPS should seek to strengthen the training, support and capability for field epidemiological investigations.
- Scottish Government should ensure access to molecular testing facilities is distributed more widely across NHS boards.
- Scottish Government should review the scope for expanding role of web-based information and call centres in management of health protection.
- Scottish Government should further clarify and formalise organisational roles and accountabilities for health protection especially relationship between HPS and boards.
- Scottish Government and NHS boards should develop and implement a health protection information system for Scotland.
- HPS should review the management and enhance arrangements for teleconferences. Scottish Government should review the capacity and resilience and mutual aid arrangements among boards.
- HPS should review the arrangements for naming contributors to published articles, considering if delays in information could impact on the response.

- Scottish Government should further clarify and formalise organisational roles and accountabilities for health protection.

4.2.4. HPS worked with the Scottish Government, NHS Boards and other partners on the implementation of these recommendations.

4.2.5. Following the 2009-10 pandemic caused by the influenza A(H1N1) pdm09 virus, HPS had given significant thought to enabling linkage of GP, hospital, laboratory, vaccination and NRS death data with socioeconomic indicators, such as the Scottish Index of Multiple Deprivation (SIMD), or location (NHS Board, local authority, rural and urban area).

4.2.6. This work was taken forward by a Pandemic Influenza Preparedness Early Assessment of Vaccine and anti-viral Effectiveness (EAVE) project led by the University of Edinburgh and allowed near real-time linkage of this data from a selected group of practices. It also presented a scalable option for expansion in the event of a pandemic.

4.2.7. This work was placed in hibernation (along with other NIHR/HTA projects) in the expectation that it could be reactivated in the event of a pandemic. The project was activated early in the COVID-19 pandemic by HPS, renamed EAVE-II and led by the University of Edinburgh, in advance of receipt of subsequent Medical Research Council (MRC) funding, This project built on work undertaken during successive influenza seasons enabling the whole of the Scottish population to form a national cohort to describe the disease profile, clinical risk groups and ultimately effectiveness of COVID-19 vaccination once this became available.

4.3. Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

4.3.1. We have not managed any cases of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in Scotland. Nevertheless, HPS produced a range of materials, guidance, and information for healthcare professionals. This material was designed for healthcare professionals and as such was shared through the Scottish Health Protection Information Resource (SHPIR).

4.3.2. SHPIR was created to provide a reliable, quality assured resource, particularly for Health Protection staff in Scotland, when rapid access is needed for key

information on specific Health Protection topics. SHPIR provides online access to key documents, selected by health protection clinical subject experts, as representing resources of particular relevance to health protection practice in Scotland. It is accessible to NHS Board Health Protection Teams.

4.3.3. HPS provided the following information and guidance on SHPIR between 2012 and 2019:

- MERS-CoV minimum dataset form
- Infection control advice: severe respiratory illness from novel or emerging pathogens
- MERS-CoV information for healthcare professionals
- HPS and NHS boards public health response plan for possible, presumptive and confirmed MERS-CoV cases
- MERS-CoV case management algorithms
- MERS-CoV information for microbiologists and virologists

4.3.4. The HPS and NHS boards public health response plan for possible, presumptive and confirmed MERS-CoV cases outlines the infection prevention and control advice for healthcare workers who may be involved in receiving and caring for patients, primarily within healthcare settings, who are a suspected or confirmed case. The plan includes the identification and diagnosis of an index case, and the management of identified contacts of the case, and highlights the contributions of heath protection teams and HPS to the overall public health response.

4.3.5. In addition to the information for health protection teams provided through SHPIR, HPS provided advice for travellers on MERS on its Fitfortravel website. HPS monitored the situation with the 2012 MERS outbreak but had no cases in Scotland therefore no direct lessons were learned. I would however say that we were well-prepared to handle cases in Scotland as a result of the preparatory work undertaken and the guidance developed.

4.4. 2013-2016 Western African Ebola epidemic

4.4.1. Several areas of NSS were involved in the Scottish response to Ebola, primarily HPS, NSS Corporate Communications, the Scottish National Blood Transfusion Service and National Procurement. Dr Syed Ahmed, HPS Clinical Director at the time, led the HPS response including regularly briefing the First Minister and

taking part in press conferences led by Scottish Government. Dr Ahmed also led the assessment that was carried out on the efficacy of NSS's Ebola co-ordination activities, together with the response to possible cases and the confirmed case in December 2014.[34]

4.4.2. The HPS preparedness activities began in March 2014 in response to lessons learned from the case of Crimean Congo haemorrhagic fever admitted to the Brownlee Unit for Infectious Diseases on the Gartnavel Hospital campus in 2011, the awareness of the evolving Ebola outbreak in West Africa and the Commonwealth Games, due to take place in Glasgow in summer 2014. HPS worked closely with NHS Boards, the NHS Resilience Team in the Scottish Government, the Scottish Ambulance Service, NHS 24 and others to ensure that we were prepared in the event of a case of Ebola arriving in Scotland.

4.4.3. When the Commonwealth Games began in July 2014, HPS was able to assure the Cabinet Secretary for Health and Wellbeing that Scotland was well-prepared to deal with an imported case of Viral Haemorrhagic Fever (VHF) associated with the Commonwealth Games.

4.4.4. HPS set up a dedicated Ebola Response Room on 17th October 2014 to handle the large volume of enquiries being received from NHS Board Infection Control Teams, Consultants in Public Health Medicine and the media. This enhanced facility ran until 7th November 2014 when it was deemed that the workload had returned to a level manageable within normal business.

4.4.5. A healthcare worker who returned to Glasgow from Sierra Leone on 28th December 2014 was diagnosed with Ebola. The individual was admitted to the Brownlee Unit for Infectious Diseases on 29th December and then transferred to the high level isolation unit in the Royal Free hospital, London, during the night of 29th December.

4.4.6. Lessons learned set out in the Debrief Report (JM/35 –INQ000101050) include:

- The key role played by the Viral Haemorrhagic Fever (VHF) Working Group, which HPS initiated in August 2014. It included representation from the Scottish Government, emergency services, NHS primary and secondary care,

[34] National Services Scotland. Ebola Response: Debrief Report. January 2015. (JM/35 –INQ000101050)

public health, infection control, laboratory staff and other relevant agencies. It was invaluable in the development of guidance and dissemination of information on VHF preparedness across Scotland and provided a forum through which the views of the participants could be heard and incorporated into guidance.

- The benefit of the VHF Working Group being co-chaired with the Scottish Government so that the group could accommodate a broader remit, have a more formal link to the Scottish Government Resilience Room (SGoRR) and so that the government could offer additional support as required.
- The value of the work that had been undertaken from March 2014 to December 2014 to produce guidance and documentation. Plans and procedures that had been tested prior to Christmas, were then followed when the case was identified, which was key to the successful response.
- PHE made the decision with the English CMO to undertake contact tracing. This did not fall into the agreed protocols and was a 'shifting of the goal-posts'. While it is understood why this happened, it was unfortunate that a lot of preparation and pre-planning was therefore disregarded. From a purely practical perspective, this also meant that some of the forms, information leaflets, monitoring kits and so forth were not appropriate in this situation and alternatives had to be produced to fit the situation. However, given the high level of scrutiny in this situation, contact tracing did provide considerable reassurance to passengers who had been on the flight, as well as the media and general public.
- Clarity was required on the governance of cross-border and international incidents, which Dr Ahmed discussed subsequently with the Scottish Government (previous arrangements had pre-dated the creation of PHE).
- Some members of HPS staff were already experienced in airline passenger contact tracing which was invaluable. However, some practical issues were encountered in obtaining the flight manifest, which highlighted that an international agreement was needed around the requirement for the manifest for public health reasons via IHR (International Health Regulations).
- The media welcomed the fact that HPS was able to discuss our efforts and progress with the contact tracing. This provided confidence and reassurance that steps were being taken to manage any potential risk. HPS took every opportunity to reiterate the fact that the call to passengers was a reassuring and precautionary one.

- Other than linking to the SG press release on the HPS website, the HPS website and NSS twitter feed were not utilised throughout the response. Had additional resources been available it may have been advantageous to utilise the available websites and social media platforms throughout the week.
- HPS staff involved worked extremely well together. All members of staff were flexible and willing to help out and everyone was willing to do whatever was needed (as appropriate). There was good cross team working and individuals put themselves forward for aspects of work that they felt they were able to do well.

4.4.7. Recommended actions set out in the Debrief Report (JM/35 –INQ000101050) include:

- Revisions being made to the HPS Incident and Emergency Response Plan (IERP) in light of the experience, including different levels of response and triggers for their activation and the use and maintenance of generic email address.
- A number of operational actions were identified for HPS and a further internal debrief was held, with actions taken forward by the HPS Preparedness and Resilience Group.
- A subgroup considered a generic form and Standard Operating Procedure (SOP) for capturing data regarding contact tracing.
- A simulation exercise involving a flight contact tracing scenario was held.

4.5. 2015-2016 Zika virus epidemic

4.5.1. HPS provided information for the public about Zika virus on its website (JM/36 – INQ000147846) and specific advice for travellers on its fitfortravel website (JM/37 - INQ000147865). HPS monitored the situation with the 2015-2016 Zika virus epidemic but had no cases in Scotland and therefore no direct lessons were learned. I would however say that HPS was well-prepared to handle cases in Scotland as a result of the preparatory work undertaken and the guidance provided by PHE and ECDC.

5. Simulation and training exercises

5.1. Simulation exercises supported by HPS

5.1.1. HPS supported a number of national and local simulation exercises over the period in question. These mainly focussed on surveillance, command and control processes and caring for large numbers of severely ill patients. The exercises resulted in shared learning at a national level, and actions to be taken forward by individual participant organisations.

5.1.2. In addition to what follows, further local, regional and national simulation and training exercises took place. However, these did not always include or have representation from HPS as planners or participants. PHS is unable to provide information with regard to the mentioned exercises of Surge Capacity Exercise (for Ebola) (March 2015); Preparedness and Review Workshop (for Ebola) (May 2015); Exercise Valverde (for Novel Coronavirus) (2015); Exercise Alice (for MERS) (February 2016); Exercise Northern Light (for Ebola) (May 2016); Exercise Cygnet (for Pandemic Influenza) (August 2016); Exercise Typhon (for Lassa) (February 2017); PHE and APHA Workshop (for Avian and Pandemic Influenza) (October 2017); Exercise Broad St (for Lassa and H7N9 Influenza) (January 2018); Exercise Cerberus (for Avian Influenza) (February 2018); Exercise Pica (for Pandemic Influenza) (September 2018).

5.2. Exercise Winter Willow

5.2.1. Staff from HPS – myself included – were amongst the 500 Scottish participants who took part in stage 2 of Exercise Winter Willow, between the 16th and 21st February 2007. This tested the planning presumptions outlined in the draft UK National Framework for Responding to an Influenza Pandemic. The Exercise Winter Willow Lessons Identified report (JM/38 - INQ000147864) recognised that:

> 'Many aspects of responding to an influenza pandemic fall within the competence of the Devolved Administrations. The Exercise highlighted some policy areas where there might necessarily be a difference in approach between different administrations. Ministers in the Scottish Executive, Welsh Assembly Government and Northern Ireland Executive will wish to ensure that the response made is appropriate to local needs. It was also felt that national contingency plans should be clearer on what policy and response areas fall within the responsibilities of the DAs in Scotland, Wales and Northern Ireland.'

5.2.2. The exercise highlighted the need for better engagement with the public and communities and particularly community responsibility for vulnerable people. The report highlighted a need for clearer advice to the public on the use of antiviral drugs, facemasks and other measures and on the stocking of home supplies.

5.2.3. The issue of public use of face masks was picked up in a meeting of the NHS Scotland Health Emergency Planning Officers, on which HPS was represented, on 7th March 2007. The exercise had shown that other services looked to the NHS for advice on masks and it was noted that work was ongoing in Scotland around guidance and funding for the use of masks in a pandemic:

> 'The meeting felt that we could not continue to give out the conflicting messages that a pandemic could happen at any time, and yet we do not have a decision on the specification and availability of masks for infection control.'[35]

5.3. Exercise Cauld Craw

5.3.1. Exercise Cauld Craw was a Scottish Government pandemic influenza exercise commissioned and sponsored by the Resilience Advisory Board for Scotland. The aim was to contribute to building a Safer and Stronger Scotland by briefing, training and exercising the Scottish Government in a challenging pandemic influenza scenario.

5.3.2. It was planned to take place over four weeks from 27th April 2009, and HPS was to take part alongside a number of responder agencies including territorial Health Boards, the State Hospital, the Scottish Ambulance Service, and NHS24. The plans for the exercise were overtaken by the H1N1 ('Swine Flu') pandemic and the exercise did not therefore take place. HPS initiated its Incident and Emergency Response Plan on Sunday 26th April 2009, following identification of the first cases of influenza A (H1N1) among Scottish travellers returning from a holiday in Mexico.

5.4. Exercise Castle Rock

[35] NHS Scotland. NHS Scotland Health Emergency Planning Officers meeting 7th March 2007: minutes. March 2007. (JM/39 - INQ000147843)

5.4.1. In September 2010 a multi-agency live-play exercise was held in Scotland that simulated a Chemical, Biological, Radiological and Nuclear incident (CBRN). This involved a number of organisations, including HPS. The objectives of HPS were:

- To explore the impact of a major CBRN incident on the NHS in Scotland, in particular to consider the capacity to respond to the crisis and consequence management issues.
- To explore the capacity of the Health Protection services of NHS Scotland (NHS Boards and HPS) to respond and carry out appropriate Risk Analysis (risk assessment, risk management, risk communication) activities associated with such an incident.
- To explore the role of HPS in co-ordinating Health Protection Services across Scotland, in order to ensure a consistent response.
- To explore the practicability and utility of planned arrangements for the provision of Scientific and Technical Advice via Scientific and Technical Advice Cells (STACs) to the relevant Strategic Coordinating Groups in participating areas
- To investigate the practicability and co-ordinated mechanism for providing a single STAC for Scotland to advise all the SCGs and Scottish Government, and to explore its relationship with UK level bodies such as SAGE.
- To investigate the operability of mechanisms to secure expert specialist advice from other UK national agencies, including the HPA and Defence Science and Technology Laboratory, to support the Health Protection response.

5.4.2. The exercise was led by UK and Scottish Government, who retain the exercise report, findings and recommendations. HPS undertook assessment for specific health and scientific findings identifying recommendations to improve interaction between STAC, SAGE and Strategic Coordinating Groups. The aim was to improve roles, responsibilities, communication and coordination where multiple STACs are meeting, and identify improvements for information technology, training and capacity for STACs.

5.4.3. The national STAC guidance was published in 2012 and has been recently reviewed and updated.[36]

5.5. Exercise Silver Swan

5.5.1. Exercise Silver Swan, which took place over the latter part of 2015, was designed as a programme of events rather than a single national exercise. This was to ensure that all agencies, in particular Local Authorities and Health Boards, had the opportunity to fully participate alongside national agencies including HPS, although HPS was not involved in all events. Workshops were held across the country, including on Orkney and Shetland, and the Western Isles, and over 600 people were able to take part.

5.5.2. The aim of Silver Swan was to:

> 'Assess the preparedness and response of Scotland's local and national arrangements for an influenza pandemic over a prolonged period.'

5.5.3. The exercise focused on four specific areas; Health and Social Care, Excess Deaths, Business Continuity and overall Strategic Coordination nationally.

5.5.4. The objectives were to:

- Explore the local, regional and national incident management and decision-making in response to a pandemic, including public communications structures.
- Examine the co-ordination role of Scottish Government resilience arrangements and the information flows between Scottish Government, Health Boards and other responders including technical advice from Scientific and Technical Advice Cells (STAC) and Scientific Advice to Government in Emergencies (SAGE).
- Exercise NHS surge capacity and counter-measures.
- Establish how the links work between Health and Social Care.
- Exercise management of excess deaths arrangements during a pandemic.

---

[36] Preparing Scotland. Scientific and Technical Advice Cell (STAC) Guidance: Providing Public Health, Environmental, Scientific and Technical Advice to Resilience Partnerships in Scotland. (JM/40 INQ000147853) October 2022.

5.5.5. Although STAC and SAGE were mentioned in the objectives, the exercise report,[37] circulated in April 2016 notes that '…it was considered at the events that specific technical advice regarding a pandemic would come from Health Protection Scotland primarily.'

5.5.6. The report contained 17 high level recommendations as well as findings relating to the four areas mentioned above. The recommendations focused on:

- Pandemic planning and priority setting
- Coordination of the response
- Staff capacity and redeployment
- Public communication
- Supply chain interdependencies
- Mass fatalities – body storage and system capacity
- Antivirals
- Personal Protective Equipment

5.5.7. It was in the last category – Personal Protective Equipment (PPE) – that there were specific points of learning for HPS. There was a perception amongst some participants, noted in the exercise report, that 'PPE would be required for all staff dealing with members of the public during a pandemic rather than the more limited application for staff carrying out higher risk procedures involving infected patients.' The report also noted that difficulties associated with fit-testing was a recurring theme. The report recommended that HPS, Health Boards and Regional Resilience Partnerships (RRPs) should:

> '…ensure that the plans to distribute the stockpile of PPE, including information on prioritised key staff and groups (as identified by HPS) and when PPE should be used, are well understood.'

5.5.8. The report also recommended that Health Boards should work closely with HPS to ensure fit testing procedures are in place and being followed.

[37] Scottish Government. Exercise Silver Swan Overall Exercise Report. April 2016. (JM/41 - INQ000147840)

5.5.9. A progress review event for Exercise Silver Swan was held in December 2016. The progress HPS had made on the PPE recommendations was noted in the report[38] of that event:

'HPS have a Scotland wide expert group on Respiratory Protective Equipment and other enhanced PPE. HPS are also currently producing a competency framework which would include preparedness and requirements during a pandemic situation and this will be delivered by March 2017.

Priority groups for PPE are contained within section 2.4 of the National Infection Prevention and Control Manual (NIPCM) which is mandatory for Health Boards. Challenges and Discussion.

Fit-testing remains a significant challenge, particularly around keeping skills current.'

5.6. Exercise Cygnus

5.6.1. I took part in Exercise Cygnus in October 2016, together with my colleague Dr Arlene Reynolds, and supported by other HPS and wider PHI staff (including infection control, communications, microbiology, pharmacy, and statistics). It was a command post exercise, where participants responded from their own location and as they would to a real incident in accordance with their incident response plans. The Scottish base was the Scottish Government Resilience Room (SGoRR) at St Andrew's House in Edinburgh.

5.6.2. The aim was to assess preparedness and response to an influenza pandemic in the United Kingdom. The report highlighted the importance of the devolved administrations and England working together during an influenza pandemic response.

5.6.3. Cygnus was the first of these exercises to consider population-based triage issues (defined in the report[39] as when 'decision criteria about the allocation of treatment

[38] Scottish Government. Exercise Silver Swan – Progress Review Event. December 2016. (JM/42 - INQ000147842)

[39] Public Health England - Exercise Cygnus Report. 2017. (JM/43 - INQ000147838)

require that those selected to benefit from the limited resources must have a likelihood of medical success, yet the selection must not impede the conservation of scarce resources for those equally in need'). One of the lessons identified was the need to undertake further work in this area, which was to be taken forward by the Four Nations CMOs.

5.6.4. Specific actions taken forward by HPS in response to the exercise included:

- Reviewing the role of HPS in an emergency and revising and re-publishing our Incident and Emergency Response Plan.
- Supporting the review of the corporate NSS Emergency Response Plan.
- Consideration of the need for IT capability to allow people to work remotely in light of population behaviour change or necessary restrictions to travel.

5.7. Exercise Iris

5.7.1. Exercise Iris was delivered on 12th March 2018 by the Scottish Government Health Protection Division. The aim was to assess NHS Scotland's readiness to respond to a suspected outbreak of MERS-CoV. It consisted of a table-top exercise with participants from territorial Health Boards and national Boards including NHS 24 and the Scottish Ambulance Service as well as HPS.

5.7.2. The exercise report[40] lists 14 actions across a range of themes and is clear that in the event of a large-scale crisis, Boards would appreciate strong, national coordination and clear guidance. 8 of the actions related to HPS:

- HPS to include guidance on what would trigger a Problem Assessment Group (PAG) in MERS-CoV guidance
- HPS to consider a review of existing guidance to ensure criteria for excluding staff and their subsequent return to work is clearly stated
- Boards to consider the impact of staff exclusion in response planning, including Occupational Health input
- HPS to include a register of Scotland's specialist facilities in guidance
- Boards/HPS to ensure that liaison with NHS 24 is included in comms planning
- HPS to be asked to consider producing a roles and responsibilities document

[40] Scottish Government. Exercise Iris Report. 2018. (JM/44 - INQ000147839)

- HPS to review Scottish and PHE MERS-CoV guidance and consider whether all differences between them are necessary and appropriate
- Ensure that the 'HPS and NHS boards Public Health Response Plan for Possible, Presumptive and Confirmed Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Cases' guidance is available to all relevant stakeholders
- HPS to consider the feasibility of community sampling for HCIDs.

5.7.3. The report recognises that many of these issues had cross-cutting implications and relate to work already ongoing, either through the Scottish Health Protection Network (SHPN), or in other forums.

5.7.4. The report concludes that the 'Scottish Government and HPS should endeavour to ensure that relevant guidance is up to date and communicated effectively and that processes are in place for standing up and accessing national coordination structures and that these processes are widely agreed and understood.'

6. Planning for future pandemics

6.1. COVID-19 Lessons Learned Exercise

6.1.0. PHS is committed to learning from the experience of the COVID-19 pandemic and to planning for future pandemics on the basis of what we know worked well – and less well – over the past three years.

6.1.1. PHS is in the progress of finalising a report on our learning from events during the pandemic. We instigated the lesson learned programme to examine our organisational response to the pandemic, and to gather the views from staff directly involved in the response. We wanted to understand what worked well and to identify areas for improvement. Where improvements are needed, we will put in place a plan to address the issue. The report will be available by the end of April 2023.

6.2. Plans for SARS-CoV-2 variant assessment and response

6.2.1. We published two planning documents on 23rd September 2022 that will inform national health protection preparedness work:

- Scotland's national respiratory surveillance plan (JM/45 - INQ000147829), which describes the activities of a modern national respiratory surveillance function in Scotland and explains how national and local teams will collaborate to deliver an effective and efficient service.
- Plan for monitoring and responding to new SARS-CoV-2 variants and mutations (VAMs) (JM/45 – INQ000101048), which describes a co-ordinated process for assessing, escalating and managing incidents stemming from the introduction of a new COVID-19 variant or mutation of public health importance. The development of this plan was a commitment made in the Scottish Government's Strategic Framework Update (JM/47 - INQ000147836) of February 2022.

6.2.2. The plans were developed working in partnership with local health board Health Protection Teams and laboratories, and with NSS, local authorities, the Scottish Government and other partners.

7. Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief of its truth.

Signed:

Personal Data

Designation:

Head of Health Protection (Infection Services)

Dated: __03 May 2023_____

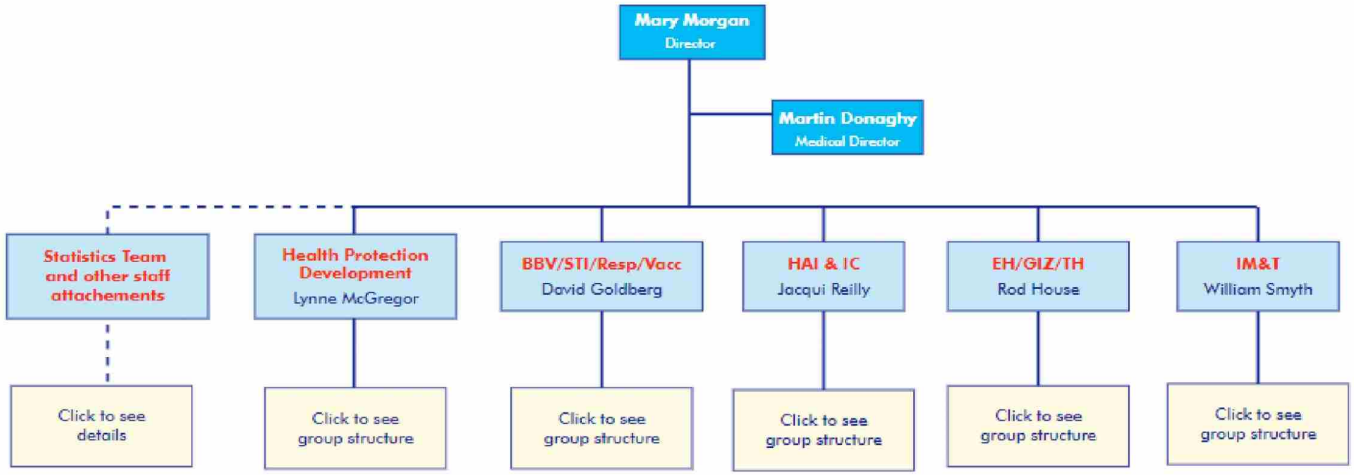
Appendix A: HPS structure (as at July 2009)

Health Protection Scotland

July 2009

Health Protection Scotland

NHS National Services Scotland



Abbreviations

BBV/STI/Resp/Vacc – Bloodborne Viruses, Sexually Transmitted Infections, Respiratory and Vaccine Preventable Infections
HAI & IC – Healthcare Associated Infections and Infection Control
EH/GIZ/TM – Environment and Health, Gastro Intestinal and Zoonoses and Travel Health Medicine
IM&T – Information Management and Technology

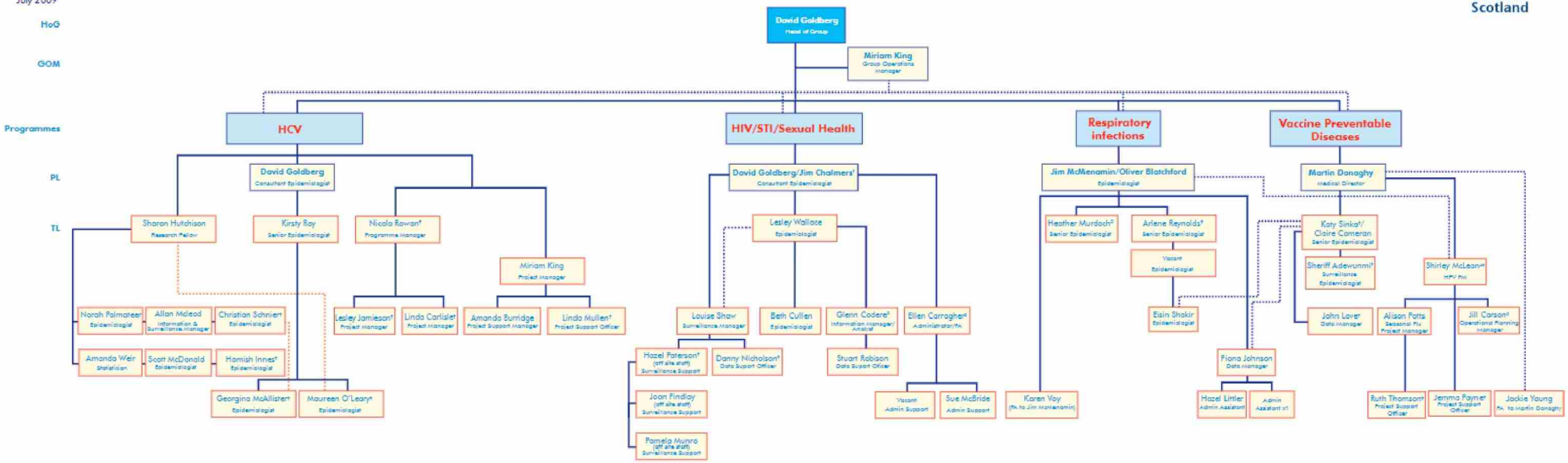
Appendix B: HPS BBV/STI and Respiratory/Vaccine Preventable Diseases Group (as at July 2009)

Health Protection Scotland

BBV/STI and Respiratory/Vaccine Preventable Diseases Group

NHS National Services Scotland

July 2009

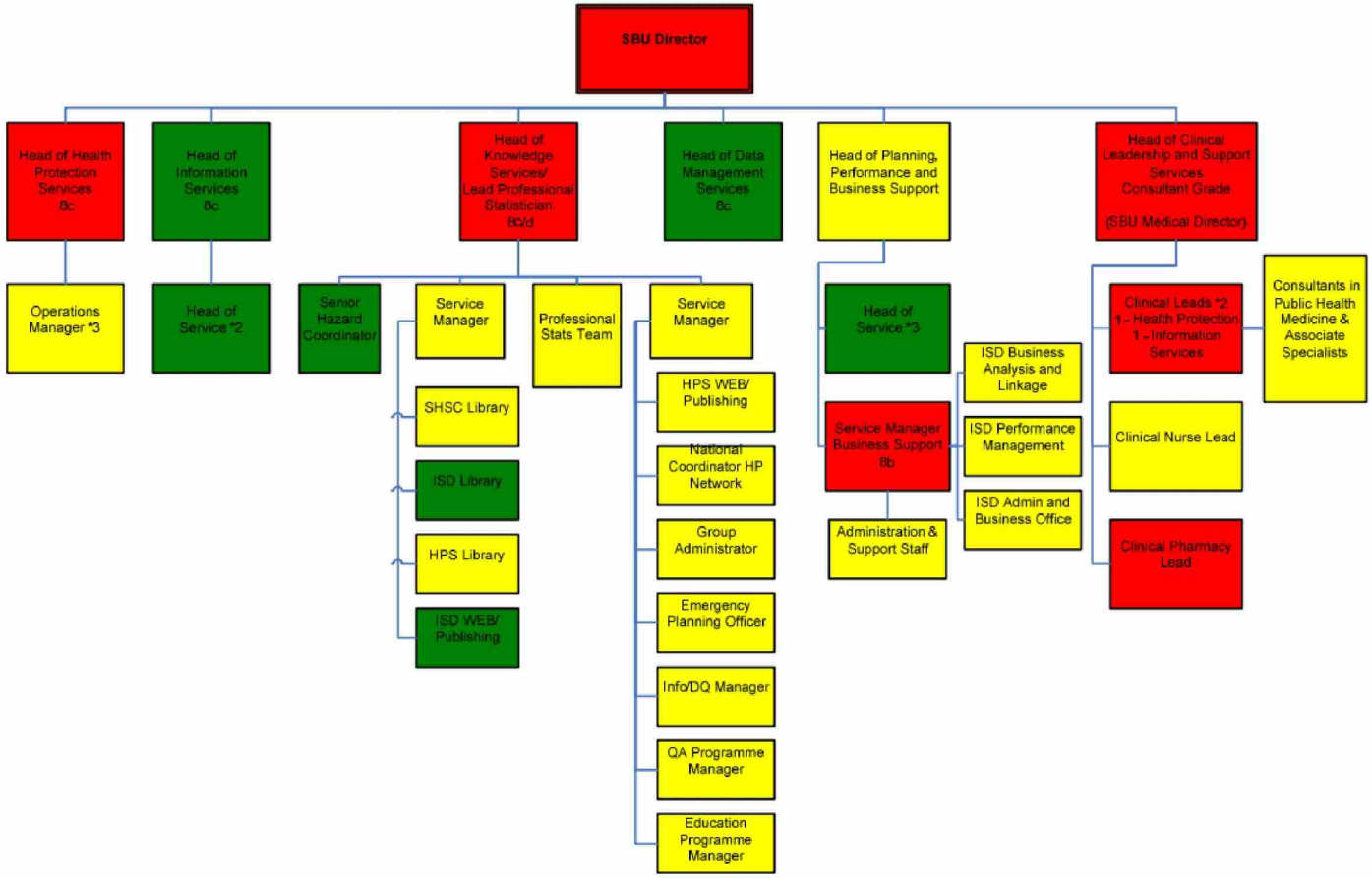


HoG: Head of Group
GOM: Group Operations Manager
PL: Programme Lead
TL: Team Lead
† - Less than 2 years service

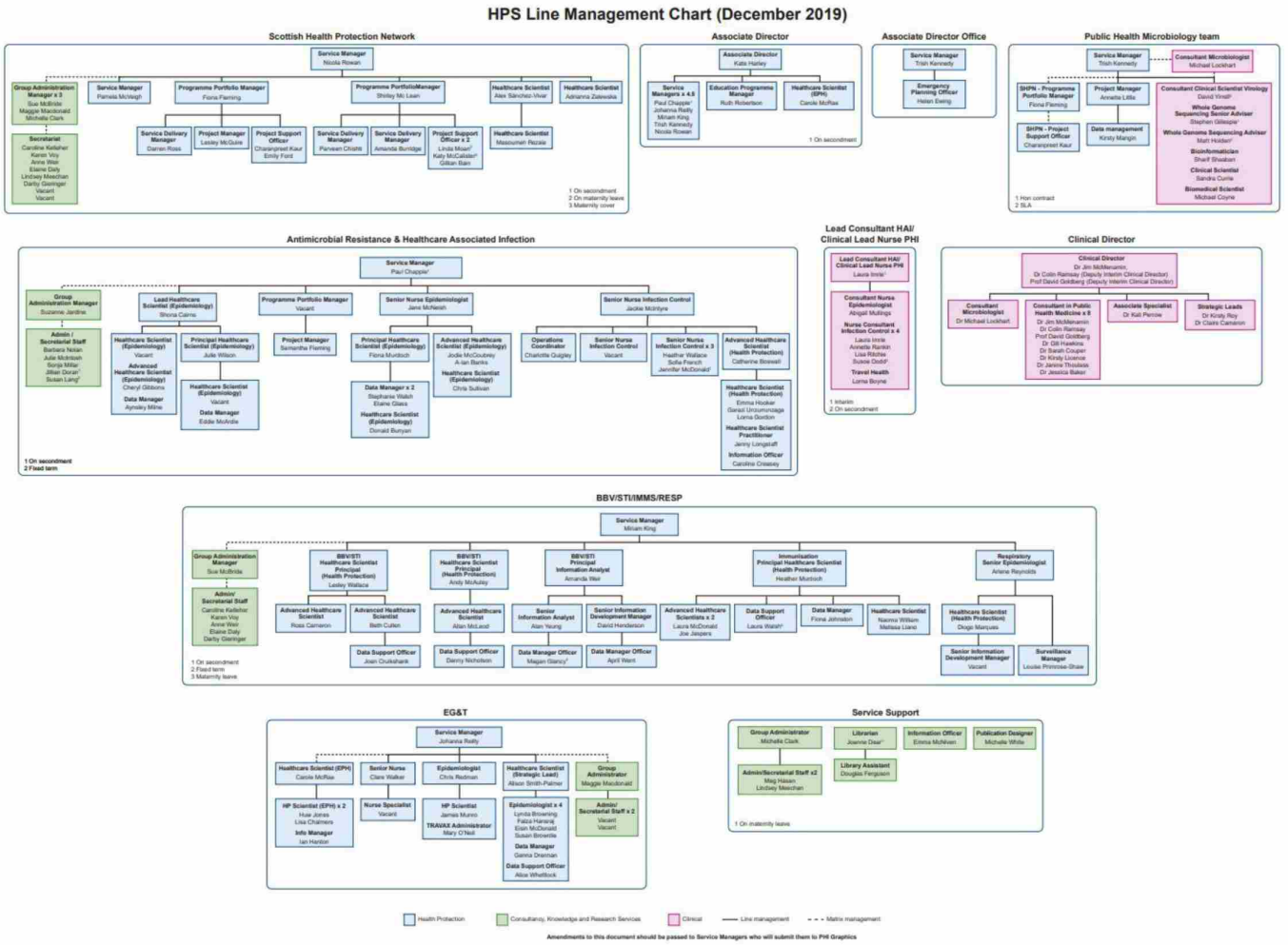
Line Management +/- Work Direction
Work Direction
IM&T
Temporary Line Management

1. David Goldberg to lead on HIV aspects and Jim Chalmers to lead on STI/sexual health aspects. Jim Chalmers line managed by Medical Director at ISD and not by HoG
2. Line managed by David Goldberg and not Jim Chalmers
3. Seconded until December 2009, line managed by Jim McMenamin
4. Line managed by Martin Donaghy
5. Six month secondment, August 2009 - January 2010

Appendix C: Public Health and Intelligence Strategic Business Unit (as at 2012)



Appendix D: HPS structure (as at December 2019)



Appendix E: Policy and legislative timeline

1999	• The Scottish Executive undertook a Review of the Public Health Function in Scotland, which confirmed the need for public health to have a high profile within Health Boards and Local Authorities and recommended that Boards develop as public health organisations and that there be a "health in all policies" approach to policy making. There was a focus on strong leadership and on relationships and partnerships.
2003	• The Health Protection Agency (HPA) was created in April 2003 as a special health authority in England and Wales. It aimed to provide better protection against infectious diseases and other dangers to public health, including chemical hazards, poisons and radiation.[41]
2004	• The Civil Contingencies Act 2004 (JM/12 - INQ000147860) and the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005 (as amended) (JM/13 - INQ000147857) outlines the duties of key organisations to prepare for civil emergencies in Scotland. The legislation created Regional Resilience Partnerships (RRPs) as the structures which support multi-agency co-operation in the event of a civil emergency. RRPs are comprised of representatives from Category 1 and Category 2 responders, which are key organisations responsible for ensuring the effective management of emergencies, as well as other organisations and groups who have an important role in the context of resilience (see Regional Resilience Partnerships above for further information).

[41] UK Government. Health Protection Agency annual report and accounts 2006 to 2007 (Accessed January 2023) (JM/48 - INQ000147826)

2005	• The HPA merged with the National Radiological Protection Board to form a comprehensive health protection service and became a UK-wide body. • Health Protection Scotland was formed as part of the development by the Scottish Government of new arrangements for health protection that were designed to align to the rest of the UK and have the capabilities to respond to major events such as a pandemic. • The Health Protection Advisory Group (HPAG) was set up in the same year as part of this new system. It was an independent group that advised the CMO and the Board of NSS on health protection priorities relating to diseases and health problems, and service delivery in health protection.
2008	• The Public Health etc. (Scotland) Act 2008 (JM/49 INQ000147832) set out the duties of Scottish Ministers, Health Boards and Local Authorities to continue to make provision to protect public health in Scotland. These are without prejudice to existing duties imposed on the Scottish Ministers and Health Boards in the National Health Service (Scotland) Act 1978 and existing environmental health legislation. Protecting public health is defined in terms of "protecting the community, or any part of the community, from infectious diseases, contamination or other hazards that constitute a danger to human health".
2010	• The Scottish Government established the Health Protection Stocktake Working Group in 2010 to conduct a concise multi-disciplinary stocktake of health protection in Scotland. The Working Group found[42] that, on the whole, Scotland has a good health protection service, with local health protection team integral to the local NHS structure. Further work carried out by the National Planning Forum on behalf of the NHS Chief

[42] NHS Greater Glasgow and Clyde. Scottish Health Protection Stocktake Working Group: capacity and resilience. November 2010. (JM/50 INQ000147841)

Executives, included a number of key recommendations, one of which was the establishment of a national health protection governance structure for Scotland (see Health Protection Stocktake below).

2013

- The HPA became part of Public Health England (PHE).

2015

- The Scottish Government established an expert Public Health Review group in 2015 to explore the ongoing challenges facing public health in Scotland, including an ageing population, enduring inequalities, and changes in the pattern of disease requiring action to address the determinants of population health, as well as particular health priorities. There was widespread agreement that we need to change the way we do public health in Scotland to meet these challenges.

2016

- The Public Health Review report[43] highlighted the need for:
  - more clarity on organisational roles
  - stronger leadership around public health
  - a public health strategy for Scotland with clear priorities
  - greater partnership work across all sectors.

- This resulted in the development of a programme of public health reform, led jointly by the Scottish Government and COSLA.

- In December 2016 the Scottish Government published the Health and Social Care Delivery Plan (JM/52 - INQ000147824). This set out the framework and actions needed to ensure that Scotland's health and social care services are fit to meet the population's requirements. The aim was 'a Scotland with high quality services, that have a focus on prevention, early intervention and supported self-management. Where people need hospital care, our aim is for day surgery to be the norm,

[43] Scottish Government. Review of Public Health in Scotland: Strengthening The Function And Re-Focussing Action For a Healthier Scotland. February 2016. (JM/51 - INQ000147823)

and when stays must be longer, our aim is for people to be discharged as swiftly as it is safe to do so'.

- The plan set out the intention to:
  - Set national public health priorities with COSLA that will direct public health across the whole of Scotland. This will establish the national consensus around public health direction that will inform local, regional and national action.

  - Support a new, single, national body to strengthen national leadership, visibility and critical mass to public health in Scotland. Such a body will have a powerful role in driving these national priorities and providing the evidence base to underpin immediate and future action.

2018

- Following a programme of stakeholder engagement and a review of the evidence, the Scottish Government and COSLA agreed six Public Health Priorities[44] in June 2018.
  1. A Scotland where we live in vibrant, healthy and safe places and communities.
  2. A Scotland where we flourish in our early years.
  3. A Scotland where we have good mental wellbeing.
  4. A Scotland where we reduce the use of and harm from alcohol, tobacco and other drugs.
  5. A Scotland where we have a sustainable, inclusive economy with equality of outcomes for all.
  6. A Scotland where we eat well, have a healthy weight and are physically active.

2019

- The Scottish Government and COSLA consulted[45] on the establishment of PHS in Summer 2019. A total of 185 responses were received: 151 from organisations and 34 from

[44] Scottish Government / COSLA. Webpage - Scotland's public health priorities. June 2018. (JM/22 - INQ000147856)

[45] Scottish Government webpage - New national public health body 'Public Health Scotland': consultation. May 2019. (JM/15 - INQ000147835)

	individual citizens. The Scottish Government published analysis of the responses (JM/53 INQ000147854) in August 2019.
	• Public Health Scotland (PHS) was legally constituted in December 2019 under the Public Health Scotland Order 2019. (JM/2 - INQ000147858)
2021	• PHE's health protection functions were transferred into the UK Health Security Agency.