Cabinet Office

UK Government Response to the Ebola Virus Epidemic in Sierra Leone, Guinea and Liberia, 2014-2015

Cabinet Office
November 2015

1. Introduction

This report summarises the lessons learned by the UK Government during its response to the Ebola epidemic in West Africa in 2014-2015. The report sets out the Government's response and preparedness to the Ebola epidemic but does not seek to assess the effectiveness of the UK's actual spend in-country.

The report has been compiled by the Cabinet Office on the basis of evidence provided by a range of Government Departments.

Background

In March 2014, the World Health Organisation (WHO) confirmed that they had identified an Ebola Virus Disease (EVD)[1] outbreak in Guinea in West Africa.

By summer 2014, Ebola had become "intense and widespread" in communities in Guinea, Liberia and Sierra Leone and it was clear that the outbreak was not under control. The international community began to mobilise support to the three affected countries, including through the WHO and the UN's Mission for Ebola Emergency Response (UNMEER).

By the autumn of 2014, confirmed cases of Ebola reached over 500 cases per week in Sierra Leone and over 150 in Guinea. Liberia's epidemic peaked earlier, reaching over 350 cases per week in September.[2]

However, the situation in West Africa began to improve by early 2015 and cases in all three countries dropped significantly. At the time of writing:

- Liberia achieved 'transmission free' status on 9 May 2015 (new cases were diagnosed in June 2015 and Liberia re-gained 'transmission free' status on 3 September 2015);
- Sierra Leone was declared 'transmission free' on 7 November 2015 ; and •

There are only a small number of cases being confirmed in Guinea.

At this stage, it is too soon to declare the crisis over.

[1] Ebola Virus Disease is a Viral Hemorrhagic Fever first appearing in two simultaneous outbreaks in Sudan and Democratic Republic of Congo in 1976. The outbreak starting in 2014 is the largest to date: there have been more cases and deaths than in all previous cases combined. For more detail see http://www.who.int/mediacentre/factsheets/fs103/en/

[2] Detailed data on the disease is published weekly by the World Health Organisation here http://apps.who.int/ebola/en/ebola-situation-reports-archive

Ebola in the UK

In the UK, the Royal Free Hospital treated **three** confirmed Ebola cases. None of these patients are thought to have transmitted the disease to others in the UK and were successfully treated for the primary virus. Two of the individuals underwent MEDEVAC from Sierra Leone, where NHS practitioners experienced in the treatment of infectious diseases supported the delivery of treatment on the flight. 13 individuals were also extracted from Sierra Leone on a highly precautionary basis following potential exposure to the Ebola virus.

However, despite the UK's early response to Ebola in West Africa, it did not become a major health issue in the UK.

UK Response

The UK took responsibility for leading the international efforts to tackle Ebola in Sierra Leone, with the US and France doing the same in Liberia and Guinea. The UK adopted this role because of its strong links with Sierra Leone.

At the time of writing, the UK had committed £427 million to tackling Ebola and early recovery, including:

- providing more than half of all the beds available for Ebola patients in Sierra Leone; funding for over 100 burial teams;
- training 4,000 frontline healthcare staff;
- providing three labs to test one third of all samples collected nationally; • provision of military assets such as RFA Argus,
- 3 helicopters,
- over 1,800 personnel including healthcare workers, civil servants and military engineers, logisticians and medics; and
- Delivering over one million Personal and Protective Equipment (PPE) suits and 150 vehicles.

The UK is continuing to support Sierra Leone's transition and recovery following the Ebola crisis. We are helping the Government of Sierra Leone (GoSL) to continue the vigilance and preparedness necessary to prevent any future outbreaks from growing into epidemics, thus maintaining a 'resilient zero'. Through major programmatic support to GoSL's health systems, DFID will help ensure Sierra Leone has the capabilities, systems, and structures in place at national and district levels to respond to a future outbreak of Ebola or other public health emergency. This includes the UK-funded Rapidly Deployable Isolation and Treatment Facility (RDITF), which has been designed by the UK military to be deployed anywhere in the country within 48 hours and ready for use within another 48 hours.

2. Domestic Response

The Chief Medical Officer advised in mid October 2014 that, *"it is likely that we will see a case of Ebola in the UK. This could be a handful of cases over the next three months."* Readiness to deal with cases had already been developed drawing on established expertise in handling infectious diseases and an early UK Ebola case.

The UK's first confirmed Ebola case, a male nurse, was successfully treated at the Royal Free Hospital in August 2014, with no onward transmission. Preparations went beyond ensuring that specialist isolation hospital beds were available, and also covered issues like patient transport, community awareness, waste disposal, and use of public transport.

Health: capacity and preparedness

Health preparedness in England has been led by the Department of Health (DH), NHS England and Public Health England (PHE). DH provided strategic direction for the NHS and wider health and care system as its stewards. It created national policies and influenced global leadership in health and care policy, providing leadership on values and common purpose.

NHS England has led the work on ensuring that the whole of the NHS is aware of Ebola and has systems in place to identify and isolate any patient who presents with, or who may be suspected of, having Ebola. It set up four surge centres building on existing infectious disease resources and expertise to treat Ebola, and suspected Ebola, patients. The surge centres were located at the Royal Free Hospital, London; Royal Victoria Infirmary, Newcastle; Sheffield Teaching Hospitals NHS Foundation Trust and the Royal Liverpool University Hospital. There were also three specialist Trexler isolation beds which enable a patient to be treated within an isolation 'bubble' with no physical contact with the physician.

A key part of the NHS's wider response was raising staff awareness of Ebola through targeted articles, letters to Trusts and PHE guidance and posters. The communications effort between DH, PHE and NHS England has won a national communications award. Cabinet Office's Implementation Unit assessed NHS preparedness in December 2014 and their report was generally positive, but highlighted further work was needed, particularly in relation to awareness among Trust reception staff and NHS 111 responses. A National Health exercise also took place in December to test responses.

DH, PHE and NHS England worked together to ensure that there was sufficient and appropriate PPE across the UK. The Health and Safety Executive visited the surge

hospital sites, offered information and advice on workplace and workforce

precautions, and offered support to those producing guidance for workers. NHS Trusts were required to ensure that they had safe systems of work in place for PPE in line with the expert guidance issued by the Advisory Committee on Dangerous Pathogens (ACDP). They also all provided assurance that they had appropriate isolation facilities in place at all Emergency Departments with safe systems of work to allow them to deal with a suspected Ebola patient. Every ambulance service in England is now capable to safely transport a viral haemorrhagic fever (VHF) patient and will maintain this capacity for the future.

The Royal Free Hospital, as a global centre of excellence on the treatment of infectious diseases, played a significant role in supporting the Ebola response in the UK – most publicly in achieving positive outcomes for the three EVD positive individuals that have been treated in the UK to date but also in supporting the wider response. With other senior clinicians and experts, NHS England facilitated learning on NHS preparedness as part of a clinical network which involved conversations across all international centres which had managed cases of EVD as part of the outbreak.

A comprehensive programme of activity by PHE complemented the NHS's preparedness activities. This included:

i. Preparing, and continuously updating, guidance for all NHS organisations and wider organisations (e.g. the Association of Port Health Authorities and the UK Maritime Pilots Association);
ii. developing standards for personal protective equipment in the UK and for UK healthcare staff in Sierra Leone in collaboration with NHS England, DH and cross Government colleagues;
iii. establishing a scheme to brief UK workers in affected countries to reduce risk and monitor their health on their return (covered in section 'e' below);
iv. providing clinical advice and testing to NHS hospitals assessing people with possible infection;
v. managing issues of decontamination for any UK individuals infected with Ebola;
vi. Managing public health contact tracing of any infected individuals; and, vii. Establishing, alongside DH, a public health emergency helpline in the event of a national emergency.

Non-health: local capacity & preparedness

On 12 October 2014 an exercise to test Ebola preparedness in England took place. This was followed up by local exercises with all 38 Local Resilience Forums (LRFs)

in England. This resulted in all local areas developing and delivering an Ebola response plan. The national and local exercises resulted in a series of learning

points, for example on how to transfer patients from local areas to surge hospitals and particular guidance requirements on waste management. The action list and responses from the LRF exercises has been shared widely and all actions completed. DCLG continues to build on the lessons from the exercises in its planning for dealing with infectious disease outbreaks, and improved international and domestic horizon scanning for infectious disease will assist with this.

Alongside the exercises in England, a cross-UK exercise took place in December testing primarily health response mechanisms:

i. Providing direct support to Local Authorities and LRFs through linkage between PHE Centre Directors, Health Protection Units and local Directors of Public health; and
ii. Providing regular epidemiological and data briefings including Ebola activity reports, UK risk assessments and returning worker forecasts

Screening of Passengers

On 13 October 2014, the Secretary of State for Health announced that individuals arriving in the UK from the affected countries would be subject to in-person screening at their port of entry (or for some individuals coming via less common routes, e.g. shipping ports, telephone screening). This screening was carried out by Public Health England, supported by the UK Border Force, and consisted of: relevant travellers having their temperature taken, completing a questionnaire about current health, travel history and whether there may have been a risk of contact with Ebola patients. They also provided contact details, were provided with information on disease manifestation and most importantly were informed what they should do if during the 21-day incubation period they developed Ebola symptoms.

On site screening was implemented over a period of 17 days at four airports with the highest passenger flows from affected countries plus London St Pancras Eurostar terminal. Within four day this was first introduced at Heathrow (through which historic data showed more than 85% of passengers from the 3 affected countries returned), then Gatwick, the other main entry point, and subsequently at the 3 other locations (St Pancras Eurostar terminal, and Birmingham and Manchester airports).

This required significant joint working arrangements, between PHE, Border Force and the airport operating companies building on existing Port Health plan and IHR response arrangements but also developing new ways of working together. In each of the locations PHE established its own local management team which worked

closely with Border Force and the port operating companies to implement the screening process and resolve any operational difficulties locally. The teams were centrally coordinated from the PHE National Incident Control Centre (NICC) which

liaised directly with Border Force nationally to resolve any wider issues. Initial staffing of the teams for the first six weeks utilised Civil Service volunteers who left their day-jobs to take up screening roles at Heathrow and Gatwick, being instructed through a newly established training programme and then supporting frontline operations. They were later replaced with more permanent staff once security clearance, airport access and wider training programmes had been established.

One key issue, which persisted at some of the ports, was the accessibility to airside passes for staff - the balance between security concerns and the imperative to establish and maintain a robust screening presence sometimes proving challenging. Having a process in place to fast track the issuance of airside passes may be of benefit in future. Posters and leaflets were produced for the ports to inform the public of the screening process and provide information on Ebola respectively. Placing of the posters for maximum impact was a key consideration and involved extensive negotiation with some of the ports. As part of a process of continuous improvements later versions of the poster were also simplified to improve their visual impact. Routine travellers from affected countries were identified for screening using existing Border Force tools, which worked successfully but was labour-intensive. If any future epidemic where screening was considered a viable risk management tool and where passenger numbers from affected countries was high further consideration would need to be given to appropriate identification processes, which might be better managed at embarkation points in country or using different domestic tools.

PHE devised and ran from the NICC operational screening cell a Returning Workers Scheme to support and monitor all returning workers (healthcare workers, journalists, miners, officials involved with the outbreak etc) but focusing particularly on higher risk individuals who had had direct exposure to Ebola. Once established regular contact was maintained with all sender organisations including all leading NGOs who registered corporately, and with individual workers. Newsletters, briefing notes and information on risk categorisation and management were critically passed to registered organisations and, following entry screening; high risk workers were linked directly to their local PHE local Health Protection Units to be proactively followed up by Consultants in Communicable Disease throughout the country. Good working arrangements were developed between PHE and devolved administrations, and with other countries (principally US) for the 'handing onward' and receipt of any passengers known to be at high risk who required monitoring during the incubation period.

The screening programme was effective in mitigating a number of risks to the UK. These included:

i. identifying returnees from the affected countries and collecting their contact details;
ii. assessing passengers' state of health and in-country activities;

iii. providing passengers with information about Ebola and the public health system in place for addressing it should symptoms develop; and iv. facilitating rapid access to treatment if needed, and rapidly following up high risk passengers within the UK.

Cessation of Direct Flights

Currently, no direct flights have been in place between the UK and the affected countries since October 2014. The Government has been clear that it would refuse any requests to introduce direct flights until the public health situation in the affected countries has improved. Having no direct flights made it more difficult for the Border Force to identify travellers coming from affected countries and the mechanisms they used to identify relevant travellers were resource intensive and may be difficult to replicate in other circumstances (but may potentially also have reduced numbers arriving and increased public confidence in the Government's preparedness).

Legislation

The challenge of containing Ebola should it reach the UK, and of tackling it in West Africa, raised a number of questions about whether the UK Government had the right public health powers in place, particularly around powers to conduct screening at ports of entry and where necessary putting in place ongoing screening arrangements, for example, for returning healthcare workers.

For the risks faced by the UK during this epidemic, the legal powers were considered to be sufficient. Screening was conducted in practice on the basis of consent from the individual although existing powers exist allow passengers to be held within an appropriate risk environment and by specific personnel. However, the Department of Health, working with cross government policy and operational colleagues, drafted provisions in case this became insufficient. There was no need to legislate as our public health powers are extensive; however, extra provisions are ready and could be used in future emerging infectious diseases if applicable but operational implications would need to be considered more fully in the event of any changes to legislation. The Department of Health will continue to review whether any changes might be needed in the future should the public health risk of Ebola increase and consider more broadly whether updates to public health regulation is required in the event of new and emerging infectious diseases.

Vaccines and therapeutic treatments

The UK has also provided significant support to the development, manufacture, approval and delivery of an Ebola vaccine. The Medical Research Council, the Wellcome Trust and DFID assigned up to £2.8 million for the Phase 1 trial (now completed) of the GSK Ebola vaccine candidate. The UK is also investing a further

£1.34 million in new research to fight the virus and is providing support to other research programmes on Ebola diagnostics and treatments, through enabling the use of the UK funded treatment facilities and laboratories.

The UK Government worked with international organisations, pharmaceutical companies and others to enable a vaccine to reach clinical trials and deployment more quickly. Significant financial support was given to trials and development, and three candidate vaccines have started clinical trials in West Africa, and eight therapeutic treatments have been deployed as part of clinical trials or on a compassionate basis. The Ebola epidemic in West Africa has increased international awareness of the challenges in developing, testing and bringing to market vaccines targeting epidemic and pandemic diseases particularly where disease characteristics are for low incidence/high mortality infectious agents, and the UK has been at the forefront of driving forward improvements through the cross-Government Global Health Security Initiative and the World Health Organisation.

The UK Government also considered, during the Ebola outbreak, whether there was value in putting in place a legislative mechanism that would exempt pharmaceutical companies from liability in UK courts if their vaccine, or therapeutic treatment, was deployed in an outbreak situation before it was fully licensed and outside of a formal clinical trial. The US, through the Public Readiness and Preparedness (PREP) Act, is the only Government we are aware of that has such a legislative provision in place.

In a future infectious disease outbreak, the UK Government will have the option of seeking Parliamentary approval for a PREP Act like provision, based on preliminary work undertaken in response to the Ebola outbreak. Such a provision could be legislatively complex and controversial in the UK, and HMG is not aware of any other Government currently considering the introduction of such legislation.

Key lessons – domestic

1. The realistic messages from the Chief Medical Officer contributed to public reassurance.

2. Exercises to test preparedness for Ebola at all levels (local, national, and with the devolved administrations) resulted in useful learning for all involved, and the resulting actions have improved capacity to respond to future crises.

3. The detailed analysis of the legal powers undertaken during the Ebola outbreak should be made available to any future consideration of public health regulation.

4. Screening at point of entry to the UK was a useful tool for this disease in being able to identify at-risk travellers, provide them with useful information and guidance which facilitated early isolation and rapid access to relevant health services. It also provided public reassurance. Identifying relevant passengers was labour intensive, and consideration should be given to alternative mechanisms to achieve the same result.

5. The number of travellers between the affected countries and the UK was comparatively low – future outbreaks could take place in countries with easier transport links to the UK and a large number of passengers travelling. Consideration should be given to what public health risk mitigations could be implemented in this scenario.

6. Screening required close cooperation between Border Force and PHE. The mechanisms established to achieve this should be sustained and exercised by departments. A process to fast-track issuing airside passes to public health teams would be of benefit for further port health and IHR responses.

2. International Response

When the scale of the epidemic and the failure of the international system to orchestrate a multi-lateral response became clear, the UK took responsibility for leading the international contribution in Sierra Leone at the request of the UN, due to its long-standing links with the country. The UK's response has so far included deploying over 1,800 people, DFID allocating £427 million to the response and early recovery, and working closely with the Government of Sierra Leone to design and deliver the most appropriate interventions to halt the spread of Ebola and save lives.

In-country response

The UK Government's response in Sierra Leone was co-ordinated through the Joint Inter-Agency Task Force, which provided a 'One HMG' front to deliver an effective response, bringing together civil servants from DFID and FCO, with the military, under unprecedented circumstances. In this case, a civilian-led command and control management approach was implemented across the country at a district and national level.

DFID led HMG engagement with international partners and NGOs to bring their expertise and resources to the effort in Sierra Leone, and identified the constraints that initially prevented them responding. HMG support helped underpin partners' ability and confidence to respond in such an unprecedented and high risk environment. This included training of volunteers and establishing emergency medical care for deployed staff in country and through medical evacuation (covered below).

The 'One HMG' response meant that a large number of UK based employees and volunteers worked in Sierra Leone delivering the UK response. In future emergency responses it may be helpful to put in place a single central register for them (with a single point of contact and regular co-ordinated data reporting mechanisms) and an in-country liaison office through which all workers were required to check in and check out.

Healthcare in Sierra Leone and MEDEVAC

The UK supported the Sierra Leonean Government to respond effectively to the significant numbers of UK and foreign nationals who volunteered to provide aid or expertise via the military, the NHS, PHE, the Civil Service and NGOs. In doing so, the UK Government needed to be able to provide assurance that, should an individual become ill, either with EVD or through injury or similar, then they would be

able to receive medical care to a comparable standard to that which they would

receive in the UK. This was a key component in ensuring that organisations were willing to deploy their staff.

The UK addressed this in two ways: firstly, the military built and ran the Kerrytown Treatment Unit (in Freetown, adjacent to the Save the Children Kerrytown Treatment Centre); secondly, through the provision of MEDEVAC in certain circumstances. These provisions were set up to provide flexibility of treatment, but all decisions (on whether the case would be most appropriately treated locally or in the UK via MEDEVAC) were taken on a case by case basis. In practice, most suspect and actual cases among international healthcare workers were MEDEVAC'd from West Africa. Although decisions on MEDEVAC were taken on the basis of clinical evidence, it is worth noting that patients' clear preference was generally to be treated outside of West Africa (in the UK for those deployed from the UK).

The RAF has an established MEDEVAC capability developed particularly through operations in Afghanistan and Iraq, but also used to evacuate British citizens from humanitarian or other disaster areas. This capacity is generally deployed through a C17 or C130 with an Air Transport Isolation Unit and trained medical crew. As well as the RAF's provision, in October 2014 the EU established, through the Civil Protection Mechanism, a MEDEVAC capacity (including part or full funding for Member States), which used resources offered by Member States. Upon receipt of a request for MEDEVAC, the UK worked with its Liaison Officer located with the EU team to source the best available flight for the individual (in many cases the best available provider would be that which was available quickest). The EU process, and the UK's interaction with it, became smoother and more effective with experience, particularly as it became clear that the majority of MEDEVAC cases would be of people who had high-risk exposure to EVD and where clinical advice was that they could safely return to the UK.

A key prerequisite of being able to use the EU system effectively was assessing interoperability of the equipment used by providers and its biosecurity standards with the NHS and ensuring that there was no breach of the NHS safe systems of work. In future, it would be helpful to receive this technical information from providers earlier to ensure compatibility with NHS systems.

Engagement with international institutions and partners

Clearly the response in Sierra Leone could not be effective without engagement and co-ordination with other parts of the international system, and working to strengthen that system to avoid future epidemics of the scale and type of Ebola. In the UK, DFID and FCO led this work and regularly updated others through COBR on key issues.

Specifically:

- Engaging with donor partners to commit staff, money, and in-kind assistance to support UK efforts. This resulted in extremely valuable commitments given by a range of countries within and outside the EU;

- Engaging with colleagues in France and the US on the response in Guinea and Liberia, allowing valuable sharing of information and analysis;

- Supporting broader regional preparedness and monitoring across West Africa to help avoid the spread of the virus to a fourth country;

- Pushing for a stronger and more co-ordinated WHO and UN response including at the WHO Executive Board Special Session on Ebola in Geneva on 25 January 2015, pressing on human resources reform, the establishment of rapid response teams and a contingency fund to finance emergency responses; and

- As infection rates slowed and the disease was brought under control, the international engagement strategy focused on 'getting to resilient zero' in the affected countries and ensuring support for early recovery including rebuilding health services and restarting economic growth.

Relations with the Government of Sierra Leone

This leadership role in Sierra Leone was facilitated, and made possible, by the UK's long-term relationship with the Government of Sierra Leone. Excellent relationships with Government counterparts and good local knowledge were already established; we had a strong base to surge from and the ability to hit the ground running. The benefits of this approach suggest that the lead-country model can be effective in humanitarian emergencies. Future humanitarian crises may happen in countries where the UK does not have these strong links and a similar scale of response (including a large military presence), led by one country, and may not be appropriate. The UK continues to invest, alongside other donors, in the multilateral system to strengthen its ability to respond to future health and humanitarian emergencies, in line with its mandate.

Key lessons identified – international

1. Co-ordinating the in-country HMG response through the Joint Inter Agency Task Force, bringing together the civilian and military capability worked well. For humanitarian emergencies, civilian leadership is important, and should be considered in future operational responses where appropriate. Opportunities for inter-agency training and exercises should be developed to improve this coherence in the future.

2. Where large numbers of volunteers are travelling from the UK to an affected area, it may be helpful to put in place a single central register for them and an in-country liaison office. Though more detailed thinking is needed on how this could work in practice.

3. Where volunteers are travelling to an affected area they expect to receive medical care comparable to that which they would receive in the UK. Providing assurance of this early helps the response to get underway. But the preference of individuals tends to be to return to the UK after initial treatment in-country.

4. Where MEDEVAC might be required, and is not to be provided by the RAF, interoperability of the equipment used by providers with the NHS and its biosecurity standards needs to be provided by service providers in a timelier manner.

5. The international architecture responded slowly to the crisis. The UK needs to continue to push for reform to the WHO and the international system to enable more effective preparedness for, identification and containment of future global health threats.

6. Future humanitarian crises will happen in countries with which the UK does not have the same links as with Sierra Leone and a similar scale of response (including a large military presence), led by one country, will not always be appropriate.

3. Government responsibilities and structures

Preparing the UK to respond to Ebola and working internationally to help prevent Ebola from reaching the UK, as well as supporting those countries affected by Ebola, involved an unusually large range of HMG Departments, all with particular responsibilities, each of which was important to the whole of Government response. A short summary of Departments involved follows:

- **Department for International Development** – led the UK response in Freetown through JIATF, and the Ebola Crisis Team, with 40 staff at its peak in London, and 80 staff in country. DFID worked closely with the Government of Sierra Leone and international partners, including bilateral donors, the UN, World Bank and NGO. DFID has committed £427m to the response and early recovery and disbursed around £315m to date, including funding NHS volunteers, regional preparedness and vaccines development.
- **Department of Health, NHS England and Public Health England.** Advising on in-country health response and ensuring health preparedness at home, preparing for responding to and treating those who returned to the UK with Ebola or at high risk of Ebola. Comprehensive screening and follow up programme for those returning to the UK from the affected countries and specialist advice and external assurance to OGDs.
- **Cabinet Office** – *National Security Secretariat, including the Civil Contingencies Secretariat and the dedicated Ebola Unit* corralled the cross Government work, particularly through an intensive programme of Ministerial and Official COBR meetings.
- **Ministry of Defence** – Built and operated the Kerrytown 12 Bed Treatment Unit and Laboratory for international healthcare workers, which gave international health care workers the confidence to come to Sierra Leone and operate in this high threat environment; and enabled the construction of a 50 bed Treatment Unit in Kerry Town, operated by Save the Children. Conducted strategic MEDEVAC of Ebola patients and people exposed to the virus. Deployed RFA ARGUS with Role 2 medical and organic helicopter support. Assisted the Government of Sierra Leone with Command and Control in the National Ebola Response Centre, Office of National Security and District Ebola Response Centres. Provided engineering support to construct six Ebola treatment centres around the country totaling over 700 beds, trained over 4000 Sierra Leonean health care workers.
- **Foreign and Commonwealth Office,** with a dedicated Ebola Taskforce based in London and using the whole of the FCO's international network - particularly posts in Sierra Leone, at the UN, in Geneva (HQ of the WHO), and also through a wide-ranging international engagement strategy
- **Home Office** *and UK Border Force* – providing the systems and processes to support PHE's screening programme operation.

- **Department for Transport** – facilitating MEDEVAC, screening at points of entry and working with PHE to ensure advice and guidance was in place for the aviation and maritime sectors.
- **Government Office for Science** – provided timely scientific advice and detailed epidemiological modeling.
- **Devolved Administrations** - in preparing the UK including through the Four Nations Health Ministers' meetings (who also carried out a very useful operational exercise to test responses across the UK) and in ensuring the best possible treatment for the Scottish nurse who contracted Ebola.

Cabinet Office Briefing Rooms (COBR)

Responsibility for cross-Government co-ordination of the response to the crisis was managed through the COBR process and supporting teams in the National Security Secretariat in the Cabinet Office, through the Civil Contingencies Secretariat, and then setting up a devoted team, based in 70 Whitehall – close to Ministers and No 10 and which rapidly drew in suitable resource from other departments, in October 2014 when the scale of the crisis became apparent. This was supplemented by a number of ad-hoc small groups, and a frequent (at the height of the crisis, daily) a small group meeting of key Departments ('the huddle') hosted by the Foreign and Commonwealth Office. Cross-Government co-ordination was also greatly enhanced by the presence of a Ministerial champion for Ebola-issues in the Cabinet Office, Oliver Letwin MP, who was able to ensure that the issue remained prominent.

Official COBRs took place twice weekly for a large part of the crisis. Each meeting followed a similar structure, discussing the epidemiology of the epidemic, international and domestic issues and communications, but with relevant agenda items and papers tabled beforehand. The epidemiology item was always accompanied by a core set of information produced by the SAGE Modelling Group, on the best available information on the number of cases (confirmed and suspected), the number of deaths and their geographical spread. All relevant Departments sent attendees, including for some of the smaller Departments always ensuring that an attendee was observing the meeting from one of the side rooms.

As the potential reach of the Ebola crisis spanned the responsibilities of a wide range of Departments, who have not traditionally worked together, it took some time for departments to establish who was responsible for what and ensure effective coordination across Government. The Ebola crisis has resulted in stronger links and understanding between Departments, which it is hoped will continue. In similar situations it would be worth Cabinet Office considering compiling, in collaboration with relevant departments, at the start of the crisis a short written directory describing key relevant responsibilities and contacts, and perhaps a short factual guide to the key issues.

The COBR way of working was effective at bringing together Departments and taking timely decisions, and met frequently at both Ministerial and Official level. As the COBR process is primarily designed for short-term crises rather than an ongoing process (of over 6 months in this case), consideration will be given in future as to whether more formal structures, perhaps learning from the established Cabinet Committee processes, would be helpful: for example, formalising the daily 'huddle', setting stricter deadlines for circulation of papers to COBR members, and introducing a sub-group structure for discussions which didn't require the full range of Departments. It is clear, however, that in an emergency response situation there will always need to be flexibility; for example, circulating papers describing the current situation significantly in advance of a meeting will not always be possible.

Scientific advice

The UK's Scientific Advisory Group for Emergencies has met three times during the current Ebola epidemic, and its subgroups (particularly anthropology and modelling/epidemiology) have met more frequently.[3] They have provided invaluable advice to Government about the disease, its treatment, and its progress in country. Advice from SAGE formed a core part of COBR's agenda, and provided a key element of the evidence base for decisions and was essential to ensure that HMG could act quickly on new and relevant information.

SAGE is the acknowledged single source of scientific advice to inform strategic decision making at COBR during emergencies – where Departments have needs for products that include scientific advice and are intended for a wider audience, then these should be discussed with the Secretariat so that they can support them and provide the most relevant SAGE data.

A particular issue faced during the Ebola epidemic was the difficulty in getting accurate and timely data. SAGE was aware that in some cases better data was held by international organisations, which would have assisted in the response, and if shared this could have led to earlier global debate and deeper risk assessments of the nature of the epidemic. The Department of Health and DFID are working with these organisations to encourage sharing of such data. The Government Office for Science will also itself continue to be alert to risks and not hesitate in convening a SAGE for an emerging risk.

The modelling sub-group of SAGE met twice weekly at the height of the epidemic, and provided updated data for each meeting of COBR, combined with relevant data on service delivery. This structure brought together all relevant Departments.

[3] The minutes of the SAGE meetings have been published https://www.gov.uk/government/groups/scientific advisory-group-for-emergencies-sage

Mobilising people and resources quickly

Once the extent of the outbreak became clearer, different Departments worked quickly to release people for Ebola-related roles and build full strength crisis response teams. It is possible though that, as with many other aspects of the international response, an even quicker response by Departments could have helped accelerate critical actions in-country.

Before any postings could be made, HMG needed to be certain that appropriate staff welfare arrangements were in place (covered above in 'Medevac' and in-country through the Kerrytown Treatment Unit).

For UK based and Sierra Leone roles, it was at times difficult to offer certainty on length of posting and the exact role on offer. In similar situations in future it would be helpful to be able to offer clarity on the skills needed for roles, and the likely time commitment for the post – neither of which are easily offered in an emergency situation. However, both should be considered, and as much detail provided as possible. Some Departments have more readily deployable resource than others, and benefited in the crisis from being able to offer resource to other Departments – this brought benefits for the host and parent Department, as well as providing a development opportunity for the individual concerned. MOD in particular has highly developed processes to do this, both in terms of civilian and military deployments, both in the UK and overseas. Departments need to reflect on how best to deploy and manage staff to address crises such as Ebola, particularly when the crisis lasts for some months.

Communications

External communications have been important throughout the epidemic, particularly in order to deliver public reassurance, professional and system engagement and international action. As with the wider response, Cabinet Office co-ordinated from the centre, with individual Departments leading on their own particular functions (for example, DH and partners led on communicating with health professionals and DFID generally led on the response in-country). The central co-ordination functions regularly circulated updated top lines and detailed briefing. The general communications function, and the co-ordinating policy team, at times operated at slight distance from each other, and might have worked better fully aligned at the peak of the crisis; particularly in ensuring that messages from COBR were cascaded effectively and the centre had a grip on the products issued by Departments.

Research and evaluation underpinned the approach. This included a public tracker poll measuring public concern around Ebola and confidence in our response, focus

groups with public and staff to inform and shape our response and a survey of critical

NHS staff. There was generally a measured media and public response and the tracker poll showed that public and staff alike felt informed and reassured.

Key lessons – process

1. **Where a number of Departments are involved in an emergency response, a dedicated central co-coordinating function is valuable, particularly where an issue lasts more than a few weeks.**

2. **In similar situations in future it would be worth Cabinet Office considering creating, at the start of the crisis, a short written directory describing key relevant responsibilities and contacts, and perhaps a short factual guide to the key issues.**

3. **Locating this team in the Cabinet Office was helpful, particularly in 70 Whitehall where it was close to Ministers and Number 10. Although in this instance a team was made available quickly from other roles, having a standing provision to respond in similar scenarios in future, would be better and a team has now been created within the Civil Contingencies Secretariat to do this.**

4. **The Devolved Administrations brought valuable support and co-operation – open-working where appropriate facilitated this.**

5. **Scientific advice, including social science, should where appropriate form a standing item on the COBR agenda. In this case, a standing epidemiology item at COBR was a vital way for assessing the effectiveness of the UK response and changing tack where appropriate.**

6. **The response to the Ebola crisis benefited from the continued engagement of all relevant Departments with the COBR process, whether in the main room or a side rooms.**

7. **A clear benefit of the Ebola crisis has been the stronger links and understanding forged between Departments, which it is hoped will continue. In similar situations in future it would be worth Cabinet Office considering creating at the start of the crisis a short written directory describing key relevant responsibilities and contacts, and perhaps a short factual guide to the key issues.**

8. **Securing release of human resources for an emergency project isn't always easy, but all those involved sought to deliver this speedily and efficiently – it is easier to do this where there is certainty on length of posting and the exact role on offer – neither of which are easily offered in an emergency situation. However, both should be considered, and as much detail provided as possible.**

9. **Some Departments have more readily deployable resource than others (a**

particular strength of the MOD for both civilian and military resource), and benefited in the crisis from being able to offer resource to other Departments or overseas – this brought benefits for the host and parent Department, as well as providing a development opportunity for the individual concerned.

10. With a number of Departments involved, it is easy to lose sight of key messages and core facts. Where possible, Departments should draw on agreed published figures and consider carefully the actual gap before launching a new briefing product.

11. Global awareness of future epidemics would be assisted by greater sharing of core international data sets. The Department of Health and DFID are working to encourage sharing of such data.

12. The central policy and communications response should be fully co ordinated, and may benefit from being embedded with each other.

Cabinet Office