



Report: Exercise Broad Street High Consequence Infectious Disease (HCID) Exercise 29 January 2018



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The report on Exercise Broad Street: HCID exercise

Exercise Broad Street was delivered on 29 January 2018 and was part of the Public Health England funded programme directed by the Emergency Preparedness, Resilience and Response Partnership Group, which is chaired by the Department of Health and Social Care. The exercise was sponsored by the High Consequence and Infectious Disease (HCID) programme board to consider the future definitive HCID service in England.

The overarching objective of the HCID programme is to develop an agreed approach to managing the end to end patient pathway for known and unknown HCID (including suspected and confirmed cases) to ensure a sustainable response is in place.

This report was prepared by Public Health England's Emergency Response Department and was agreed with the exercise sponsor; the HCID programme board. The consideration/actions identified in the report are not necessarily PHE's corporate position; they are evidenced on the information gathered during the exercise and interpreted in the context of the Emergency Response Department's experience and judgement. It is suggested that the consideration/actions identified are reviewed by the appropriate organisations to assess if any further action is appropriate.

Personal Data

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9 April 2018

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Executive summary

On 29 January 2018, a discussion-based exercise was conducted at PHE Colindale in London, to consider the future, definitive High Consequence Infectious Disease (HCID) service in England and the challenges that a HCID incident could present professional partners with the proposed 2020 HCID service in England.

Participants in the exercise came from Public Health England and NHS England. Additionally, an observer from the Department of Health and Social Care attended.

Delegate feedback indicated that the exercise was considered to be a valuable opportunity for participants to explore future HCID issues with a range of specialist health partners.

There were 17 considerations/actions identified from the exercise. The exercise identified challenges on raising awareness of HCID protocols; how to transition from the current HCID service to the proposed 2020 service; samples transport via couriers and effective HCID communication particularly the use of the new HCID digital tool which is under development. The report gives prominence to significant areas for consideration that the participants highlighted during their discussions.

The main considerations/actions for commencement of the 2020 service were:

- Consider the timescale and approach for introducing the new Business As Usual management of suspect HCID cases
- Consider options to reduce turnaround times in particular for viable transport options
- Review the UN category-based requirements for transporting samples from suspected and confirmed cases of known HCIDs
- Develop the future HCID diagnostic service considering options for sample testing locations
- Develop, trial and launch the HCID digital tool in advance of the 2020 service to establish the tool with professional partners

A full list of considerations/actions is included at Appendix A.

1. Introduction

This report describes the design, delivery and outcomes of the HCID exercise that was held on 29 January 2018. The exercise was commissioned by the HCID programme board to aid preparations for the future HCID service in England in 2020.

Public Health England (PHE) and NHS England have developed protocols and plans as part of the joint High Consequence Infectious Diseases (HCID) programme to describe clinical and public health operations for the definitive HCID service for England.

The Ebola outbreak in West Africa in 2014 to 2015 challenged the ability of the NHS in England to provide appropriate, scalable care for high consequence infectious diseases. The learning from Ebola needs to be consolidated and incorporated into a long-term resilience plan to enable the NHS in England to deliver care safely and effectively for a wider range of known¹ and unknown HCIDs. HCID can be characterised by:

- Acute infectious illness with ability for the infection to spread in the community and within healthcare settings including staff if not properly protected
- A high case-fatality rate
- Difficulty in rapid recognition and detection
- Often a lack of effective treatments
- A requirement for coordination at a national level to ensure an effective and consistent response.

The exercise provided participants with an opportunity to consider the agreed approach to managing the end to end patient pathway for known HCID (including suspected and confirmed) cases to ensure an appropriate response is in place. Further the exercise considered whether the proposed HCID pathways and algorithms were efficient and actionable by identifying gaps or limitations.

This is the rationale on which Exercise Broad Street was conceived and designed.

2. Aim and objectives

2.1 Aim

The aim of Exercise Broad Street was to use scenario-based testing to evaluate pathways and algorithms for the future, definitive HCID service in England.

¹ The following infections are categorised as HCID: Viral Haemorrhagic Fevers, including Crimean Congo Haemorrhagic Fever, Ebola Virus Disease, Lassa Fever and Marburg Virus Disease; Highly pathogenic influenza, including H7N9 and H5N1; Middle East Respiratory Syndrome; Nipah virus infection; Monkey Pox and Pneumonic plague.

2.2 Objectives

The objectives for the exercise were:

1. To ensure that individual pathways and algorithms facilitate an integrated response to HCID incidents and that these are reflected in the joint overarching algorithm
2. To assess the use and completeness of the HCID alerting algorithm
3. To assess the functionality of the four NHS England clinical pathways
4. To confirm the alignment and integration of PHE HCID Incident Management Algorithm with PHE's NIERP
5. To identify gaps or areas of uncertainty, including roles and responsibilities, and propose corrective actions

3. Scenario

The exercise used two different HCID incidents; scenario one, used for the morning discussion was a contact HCID scenario with a single Lassa fever case. The second for the afternoon discussion, was an airborne HCID scenario using H7N9 influenza.

4. Exercise format

4.1 Exercise style

Exercise Broad Street was a one-day discussion based exercise which was delivered by PHE's Emergency Response Department Exercises Team at PHE Colindale in London. The exercise consisted of two discussion sessions; each was followed by a summary session. The exercise materials included introductory injects and 12 relevant HCID pathways and algorithms documents.

The exercise provided an opportunity for participants to consider gaps and areas for development in the approach from the available documentation and consider solutions.

4.2 Outline of the day

The exercise opened with a short HCID overview and background; after a detailed exercise briefing, the day was divided into two discussion sessions. These two sessions were followed by a final summary session, where all participants were invited to highlight a key point from the exercise.

The scenario enabled participants to consider their understanding of what the future HCID arrangements would be according to the 12 HCID pathways and algorithms. The exercise was conducted as a single discussion group throughout the course of

the exercise. A lead facilitator guided the group's discussion through a series of prompts for each of the discussion sessions. The discussion periods were all recorded and verbatim notes produced to support the report writing and further activity.

The outline programme of the day is included at Appendix B.

4.3 Participants

Participants in the exercise came from PHE and NHS England. Additionally, an observer from the Department of Health and Social Care also attended.

A full list of participants and organisations is shown at Appendix C.

4.4 Exercise planning

A planning team for this exercise was established and led by PHE's Emergency Response Department. The planning team is listed in the acknowledgements on page 26.

5. Exercise evaluation and outcomes

An important tool for improving preparedness and planning is the evaluation of events and exercises, not only in identifying areas for improvement, but also identifying areas that are working well.

The evaluation of the exercise was based on the aim and objectives and utilised a verbatim record of the day, material from the summary sessions, notes taken throughout the exercise, participant feedback, responses to the facilitator prompts and debrief notes.

Feedback from participants confirmed they considered the exercise a valuable experience and of benefit. From the 26 participants who attended the exercise, 18 completed and returned participant evaluation forms (72% return). From these, 100% of responses strongly agreed or agreed that the aim of the exercise was achieved; and 100% of responses strongly agreed or agreed that the exercise generated valuable discussions and highlighted important areas for development.

Full analysis of participant feedback on the exercise is included at Appendix D. A glossary and list of acronyms is included at Appendix E.

It is important to contextualise the report; the focus of the exercise was the future HCID service delivery in 2020 and not current arrangements. Participants acknowledged that there was still a body of work to finish including the

implementation phase using specialised commissioning to be completed before 2020.

The scenario for Exercise Broad Street was designed to enable delegates to consider the future HCID service in England and exercise participants had a range of HCID pathways and algorithms available to them. However, the report does not critique the documents directly as the exercise was targeted at higher level considerations focussed on strategy and assessing the viability of the approach to identify gaps and suggest improvements.

The exercise highlighted issues and developmental areas where further work is needed to progress the proposed future HCID service in England. The key points are outlined in the sections below.

5.1 Considerations/actions identified

This section is structured to report against the scope of the HCID programme as detailed in the programme initiation document (July 2017). The programme's overarching objective is *'to develop an agreed approach to manage the end to end patient pathway for known and unknown HCID cases'*². The programme scope extends from first contact to end treatment disposition. This section is informed by the available HCID patient pathways and algorithms and organised under the following headings:

- First contact
- Notification and escalation
- Diagnostics and identification
- Treatment pathways
- Communication

5.1.1 First contact

The importance of ensuring appropriate first contact with a potential HCID patient cannot be understated. The exercise delegates noted that HCID incidents are rare, but considered how it was possible to recognise HCID cases and maintain clinical awareness, when cases only present sporadically. Potential cases can present via four main pathways and specific HCID documents for each of these were available to the delegates.

The pathways were:

- Telephone presentation (111/999)
- Primary care (GP)

² Programme initiation document – July 2017

- Hospital (Emergency Department)
- Inpatient

At the point of presentation, patients (or someone representing them) will be asked, as part of an algorithm, for information to inform appropriate triage and treatment. The NHS 111/999 pathways states that *'If the individual has a fever or history of fever AND appropriate epidemiological risk factors (usually travel to specific countries within the last month) then HCID is possible and they should be classified as a Person of Interest (PoI)'*. Due to the uncommon nature of HCID, participants suggested that questions relevant to HCID could be a subset of the common diseases/incident management already used. The question subset could be triggered by key questions in a standard clinical algorithm, such as the Manchester triage, which is the commonest. Then more specific HCID screening questions could be asked.

Consideration/Action 1:

For commencement of the 2020 service, consider embedding subset HCID screening questions within current standard clinical algorithms for 111/999, primary care, ED and inpatient settings

As noted previously, HCID incidents are rare. A delegate noted that New York City has employed 'secret shoppers' to visit New York emergency departments to raise awareness of HCID clinical management. The mystery shoppers present and describe symptoms of a Viral Haemorrhagic Fever (VHF) infection to challenge ED awareness of HCID procedures and processes. All the NYC emergency departments have signed up to this awareness raising process. The delegate noted that *'clinical management; it's not about diagnostics, it's simply about following safe systems of work in the ED'*. This type of approach could provide a useful mechanism to keep, what is a low possibility, high consequence event within the ED clinical awareness.

Consideration/Action 2:

For commencement of the 2020 service, consider employing a 'mystery shopper' concept to keep HCID awareness in emergency departments to an acceptable level

Participant discussions indicated that another key area of HCID first contact screening was the protocol for rapid testing for malaria. A positive malaria test could explain a fever and travel history connection, and decreases the probability of VHF being the diagnosis as it was noted that historically, travellers were very unlikely to have both VHF and malaria, unless it was during a large scale VHF outbreak such as the West African Ebola virus epidemic. The contact HCID triage module used in the exercise advises *'de-escalating isolation and proceeding with conventional clinical management'* on the receipt of a positive malaria test. It was mentioned that if the VHF pathway was triggered *'it makes it less likely that the lab will do the [malaria]*

test'. It was accepted that there was still some education required on the protocols to NHS personnel.

The exercise highlighted that a HCID patient could present out-of-hours. It was a reasonable assertion from delegates that out-of-hours staff are generally more junior. If a patient presents at ED, a junior staff member must recognise the need to use an appropriate algorithm. Participants highlighted that *'there are 2-3 algorithms in the A&E departments within each Trust, algorithms vary between Trusts'*. An appropriate HCID first contact could be dependent on user awareness and experience of protocols and algorithms.

Consideration/Action 3:

For commencement of the 2020 service, promote awareness of HCID protocols and algorithms to the NHS

5.1.2 Notification and escalation

There was a tension identified by delegates on the notification of potential cases of HCID to professional partners. It was mentioned that all tests should be considered low risk until the confirmation of a positive result, as HCID are a rare event. However, there is a degree of pre-notification that takes place and sometimes organisational/hierarchical pressure associated with notification and escalation.

While partners did not want to know about every potential incident, as they could be overwhelmed by the number of cases, they also did not want to find out at the confirmation point and be behind the response 'drag-curve'. This is where the tension lies because until the sample is confirmed as a positive for HCID, how do you assess which of the circa 500 tests a year are pre-noted to professional partners?

Criteria that can be employed in the future service to ensure a timely alert and priming of professional partners about a particular sample would be advantageous. It could consider a threshold for samples that might produce positive results while not inundating partners with lower confidence samples. Consideration of what makes one sample high confidence and one low confidence and therefore prompting a pre-notification of professional partners was discussed but there was no resolution as to how this threshold would be defined or if it would be workable. It was accepted that it was very difficult to formalise completely. It was suggested that this may be more about the individual making the risk assessment, decision making and notifications rather than it being based on a repeatable, reliable verified system.

Consideration/Action 4:

For commencement of the 2020 service, consider a standard HCID pre-note criteria for priming appropriate professional partners

It was highlighted by participants that management (including notification) of suspect HCID cases will be considered business as usual (BAU) in the future HCID service. However, this is not reflected in current practice. There will need to be a transition from current systems to the future service provision and the NHS will need to consider a period of adjustment from one system to the new standard of working.

Consideration/Action 5:

For commencement of the 2020 service, consider the timescale and approach for introducing the new BAU management of suspect HCID cases

Once a need to notify professional partners has been identified, it is important that the right organisations/people are alerted in a timely manner. This is regardless of whether this is pre (dependent on confidence in a positive or negative result) or post test result. Current arrangements are based on a mixture of formal and informal notification, some of which have developed sporadically over the course of several years and incidents, in particular the Ebola response.

The exercise highlighted that 'over-escalation' can unnecessarily increase workload and that a clear list of organisations/people and why they need to know should be considered. The number of those to be notified will increase at the receipt of a positive confirmed test result. The timings for DHSC and relevant OGDs notification was also raised but not resolved.

Consideration/Action 6:

For commencement of the 2020 service, develop a definitive list of appropriate organisations/roles for alerting to ensure that timely targeted notifications are issued and include protocols for escalation

Once a confirmed case (or high confidence case) is notified, the delegates were in agreement that the protocols were clear that the NHS England EPRR duty officer would act as the national primary coordinator and primary contact for HCID response to alleviate pressure upon the NHS. What was not clear and was highlighted in feedback was who was in charge? Delegates suggested that there was too much reliance on named individuals rather than the system itself. The exercise did not provide an answer but there was discussion on ensuring there was coordinated governance for the response. The EPRR Partnership and the Health Delivery Group (HDG) are jointly developing TORs for HCID response which will aid understanding in this area.

As part of the coordination discussion, the wider notification and implications of the UK leaving the European Union (EU) were briefly discussed. In particular, access to the alerting system Early Warning and Response System (EWRS) was central to the discussions. The question was asked whether the UK will have access to this and other information exchange system post Brexit. It was not possible to answer but was

an important point to raise and note. It was observed that International Health Regulations (IHR) which are not EU specific would be unaffected.

Consideration/Action 7:

For commencement of the 2020 service, review the wider HCID alerting mechanism including those currently used as part of the European Union arrangements

5.1.3 Diagnostics and identification

A key success outcome for the HCID programme was described as improving the 'total turnaround times' in diagnostic speed. As part of decreasing total turnaround time, if the time to pack up, transport, sample test and then disseminate the results could be reduced (currently considered to be up to 24 hours), this could impact the need to move a patient prior to confirmation of diagnosis. Currently, the times are too long to leave a patient in situ until the results are known. However, if the times could be reduced to below 6 hours, a patient may be able to wait at the point of approach (i.e. at home, GP, ED or hospital) for the results. This would improve the efficiency and cost effectiveness of the service, as the patient would not be moved unnecessarily.

Consideration/Action 8:

For commencement of the 2020 service, consider options to reduce turnaround times in particular sample transport options

The exercise strongly featured comments on getting patient samples from the point of sampling to the testing laboratory (if not locally undertaken) requiring a courier service and that this service was not optimal or consistent across England. A delegate noted that '*we recognised it [the need] for years. We need a common courier system that has capacity*', in addition, the need for an innovative solution for high risk specimens was recognised.

The exercise emphasised the fact that these courier services take time to activate and that not all provide an 'on call' service. Sometime it was an issue even finding a courier to take the sample. It was noted that to pay on-call couriers would be 'astronomic'. The delegates did discuss a possible solution, via the use of the charity National Association of Blood Bikes (NABB)³. It was suggested that they could act as a supplementary courier to the current arrangements. It was discussed that the

³ NABB is a registered charity and details can be found at <http://www.bloodbikes.org.uk/>

charity status of the organisation may preclude the group from being the ideal solution but was worthy of consideration for use in the 2020 service.

Consideration/Action 9:

For commencement of the 2020 service, ensure that sample courier requirements and mechanisms have been reviewed and agreed

Participants stated that the fact that some HCID patient samples could be classified as category A⁴ (prior to positive confirmation, when they are always sent category A) caused issues for the courier service and could potentially delay the sample transport. Most category A couriers are based in the Heathrow area. A delegate stated that the category A classification required more stringent security of the sample, rather than there being any additional risk to the courier from a category A or B sample. Delegates suggested that samples were routinely classified as category B⁵ to enable transport to be expedited.

Consideration/Action 10:

For commencement of the 2020 service, review the UN category-based requirements for transporting samples from suspected and confirmed cases of known HCIDs

It was accepted that the future HCID diagnostic system is not complete and that more work is required. There was a preference for '*near patient sample testing*' expressed in the exercise. Multiple sample testing locations could reduce transport times, thereby reducing total diagnostic turnaround times achieving a key success outcome of the HCID programme. It was suggested that transferring samples to PHE Porton may not be optimal due to its geographic location and that a northern and southern hub could be a more viable option.

Consideration/Action 11:

For commencement of the 2020 service, develop the future HCID diagnostic service considering options for sample testing locations

⁴ Category A substances are described as 'an infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life threatening or fatal disease in otherwise healthy humans or animals'.

⁵ Category B substances are described as 'an infectious substance which does not meet the criteria for inclusion in Category A'.

5.1.4 Treatment pathways

As noted in 5.1.1, the possibility of an out-of-hour's presentation by a HCID patient highlights the training burden to ensure staff are sufficiently trained in the correct HCID protocols and procedures. It was asserted that *'it's not possible to maintain the relevant expertise in the safe system of work in every acute trust in the country'*. The exercise delegates noted, from the available HCID algorithms and pathways, that the future service will function with patients being moved to an HCID assessment centres. This is the point at which the rest of the differential diagnosis will be conducted and will not focus on HCID training across the NHS, so patient safety can be managed on the principle of *'concentration of expertise'*.

Consideration/Action 12:

For commencement of the 2020 service, consider the process to transition from current HCID training and processes to the future service

Once the appropriate HCID patient pathway (as detailed in at the start of 5.1) has been followed, there may be a requirement to move the patient to an assessment centre as per the proposed future service arrangements. It was noted that the transfer would be arranged by the HCID assessment centre, who were receiving the patient, rather than those sending the patient to the centre. The exercise delegates indicated that there should be a core standard in place when transferring a HCID patient to ensure consistency of service on how the transfer is to be conducted.

Consideration/Action 13:

For commencement of the 2020 service, develop a core standard for the transfer of a HCID patient

5.1.5 Communications

Communication of a raised HCID threat to the UK will be important in the effective response to an HCID incident. The overarching HCID algorithm has horizon scanning a HCID threat from overseas and collaboration with international partners as the first stage of the algorithm. This could provide an early alert notifying relevant organisations of the potential threat. Section B of the overarching algorithm mentions revising national professional alerting system for HCID threats. Delegates also noted that the communications algorithm needed to be revised to highlight clear indicators of when the message needs to be escalated and include documentation of healthcare facilities.

Consideration/Action 14:

For commencement of the 2020 service, revise the relevant communication algorithms and protocols for HCID threats

Communication delegates were quite clear that no message is communicated until a test is confirmed positive. When a test is confirmed positive, this confirmation should be communicated via the HCID alerting tool. Communications should go through the appropriate EPRR leads within the national structure. Communicators saw one of their key roles was to assist the local communication representative and consider what support is offered to Trust Communications staff at every stage. They observed that there was a need to map out lines of communication across all levels. One specific example cited was a mechanism to alert clinicians across a whole Trust.

Consideration/Action 15:

For commencement of the 2020 service, develop a communication implementation plan to transform current arrangements to the definitive 2020 service

One of the challenges presented in scenario two was that a doctor conducted a 'google' search looking for guidance. This inject was to introduce a key area of communication development in the form of a HCID digital tool. The tool is designed to engage and inform relevant professional partners. As this element is still in development, the exercise only provided an opportunity to discuss the tool in broad terms of what was being proposed. It was clear from the discussion that the development process would engage end users of the system to ascertain the final product requirements to ensure it is fit for purpose.

Consideration/Action 16:

For commencement of the 2020 service, develop, trial and launch the HCID digital tool in advance of the 2020 service to establish the tool with professional partners

5.1.6 Additional discussion topics

Although the report was not intended to critique the HCID algorithms and pathways, two suggestions were noted that the documents should use organisation roles not specific names and that a section on the decontamination of affected area(s) should be considered.

The HCID algorithms and pathways are set as high-level overarching guidance; they will need to be operationalised for the local response. Each algorithm and pathway will need to be locally interpreted and codified. This may mean an appendix to local documents or for the operational response to be signposted on documentation for local use.

Consideration/Action 17:

For commencement of the 2020 service, consider how to support the local operationalisation of the HCID response from the HCID algorithms and pathways

It was mentioned that there was a risk to the programme from 31 March 2018 as programme staff leave the project. The governance via the EPRR Partnership Group (owners of HCID programme) to engage and maintain an interest and momentum with specialised commissioning supported with clinical advice was considered vital to keep the programme moving forward.

There was discussion of record keeping of staff who had been in contact with the HCID patient (similar to CBRN procedures and noting staff who had been in Personal Protective Equipment (PPE)). Delegates were unclear if this was included as part of the processes identified in the future service but was accepted as a key point to clarify.

There was also discussion about the use of unlicensed products to treat HCID patients in particular for new and emerging HCID diseases. These items were not clarified and are included for completeness as these areas require further consideration

It was accepted that HCID surge planning still required further attention especially airborne HCID response. Possible options suggested were to disperse cases to aid local NHS pressure or to focus patients all in one place. No resolution was identified and is still to be done. Paediatric HCID service also required further attention.

There were some elements identified for next steps, these included the development of HCID Standard Operating Procedures (SOPs) and a HCID Concept of Operations (CONOPS). It was also noted that the command and control pathways required further assessment and that a table-top exercise (TTX) with direct use of the HCID algorithms and pathways would be beneficial.

6. Conclusions

Exercise Broad Street was well received by the participants who fully engaged with the exercise content and intent from the start and continued through to the end of the exercise.

The exercise identified 17 considerations/actions, these included ensuring awareness of HCID protocols and relevant pathways and algorithms for NHS staff; considering how to transition the current service to the proposed BAU 2020 service including pre-noting and notifying appropriate professional partners and how the UK leaving the EU may impact the wider notification process. One key consideration was the use of couriers to transport samples. There were a range of issues from access to transport times to considering the use of appropriate charities to decrease total turnaround time. HCID communication was addressed with discussion of the new HCID digital tool under development. There were a series of additional topics explored but no resolution was offered and delegates accepted that there were still areas of work to be done before the 2020 service comes into service.

Feedback suggested that the participants considered that the exercise was useful in providing an opportunity to spend a day with NHS and PHE colleagues discussing the challenges that HCID response would present to the proposed future service and there was still significant areas of development to be undertaken. The exercise highlighted the challenges presented by a HCID patient would be significant and require detailed future planning to ensure an effective HCID response.

Appendix A – Summary of considerations/actions identified

No.	Description of consideration/action
1	For commencement of the 2020 service, consider embedding subset HCID screening questions within current standard clinical algorithms for 111/999, primary care, ED and inpatient settings
2	For commencement of the 2020 service, consider employing a 'mystery shopper' concept to keep HCID awareness in emergency departments to an acceptable level
3	For commencement of the 2020 service, promote awareness of HCID protocols and algorithms to the NHS
4	For commencement of the 2020 service, consider a standard HCID pre-note criteria for priming appropriate professional partners
5	For commencement of the 2020 service, consider the timescale and approach for introducing the new BAU management of suspect HCID cases
6	For commencement of the 2020 service, develop a definitive list of appropriate organisations/roles for alerting to ensure that timely targeted notifications are issued and include protocols for escalation
7	For commencement of the 2020 service, review the wider HCID alerting mechanism including those currently used as part of the European Union arrangements
8	For commencement of the 2020 service, consider options to reduce turnaround times in particular sample transport options
9	For commencement of the 2020 service, ensure that sample courier requirements and mechanisms have been reviewed and agreed
10	For commencement of the 2020 service, review the UN category-based requirements for transporting samples from suspected and confirmed cases of known HClDs
11	For commencement of the 2020 service, develop the future HCID diagnostic service considering options for sample testing locations
12	For commencement of the 2020 service, consider the process to transition from current HCID training and processes to the future service
13	For commencement of the 2020 service, develop a core standard for the transfer of a HCID patient
14	For commencement of the 2020 service, revise the relevant communication algorithms and protocols for HCID threats
15	For commencement of the 2020 service, develop a communication implementation plan to transform current arrangements to the definitive 2020 service
16	For commencement of the 2020 service, develop, trial and launch the HCID digital tool in advance of the 2020 service to establish the tool with professional partners
17	For commencement of the 2020 service, consider how to support the local operationalisation of the HCID response from the HCID algorithms and pathways

Appendix B – Programme

TIME	
09.00 - 10.00	Registration
10.00 - 10.30	Welcome <ul style="list-style-type: none">○ Exercise briefing○ Introductory presentation○ Scene setting
10.30 – 12.30	Scenario 1 – Contact HCID (Lassa Fever)
12.30 - 13.30	Lunch
13.30 – 15.30	Scenario 2 – Airborne HCID (H7N9 influenza)
15.30 - 16.00	Summary and next steps

Appendix C – List of participants

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1	Ash Canavan	National EPRR Communications Lead NHS England	ash.canavan@nhs.net
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10	Graham Bickler	Programme Director COO Directorate Public Health England	charles.beck@phe.gov.uk
11	Tim Brooks	Clinical Services Director Public Health England	charles.beck@phe.gov.uk
12	Paul Cosford	Director of Health Protection Public Health England	charles.beck@phe.gov.uk
13	Gavin Dabrera	Consultant Public Health Medicine Public Health England	charles.beck@phe.gov.uk
14	Nick Gent	Deputy Head of Emergency Response Public Health England	charles.beck@phe.gov.uk
15	Jenny Harries	Regional Director (South) Public Health England	charles.beck@phe.gov.uk

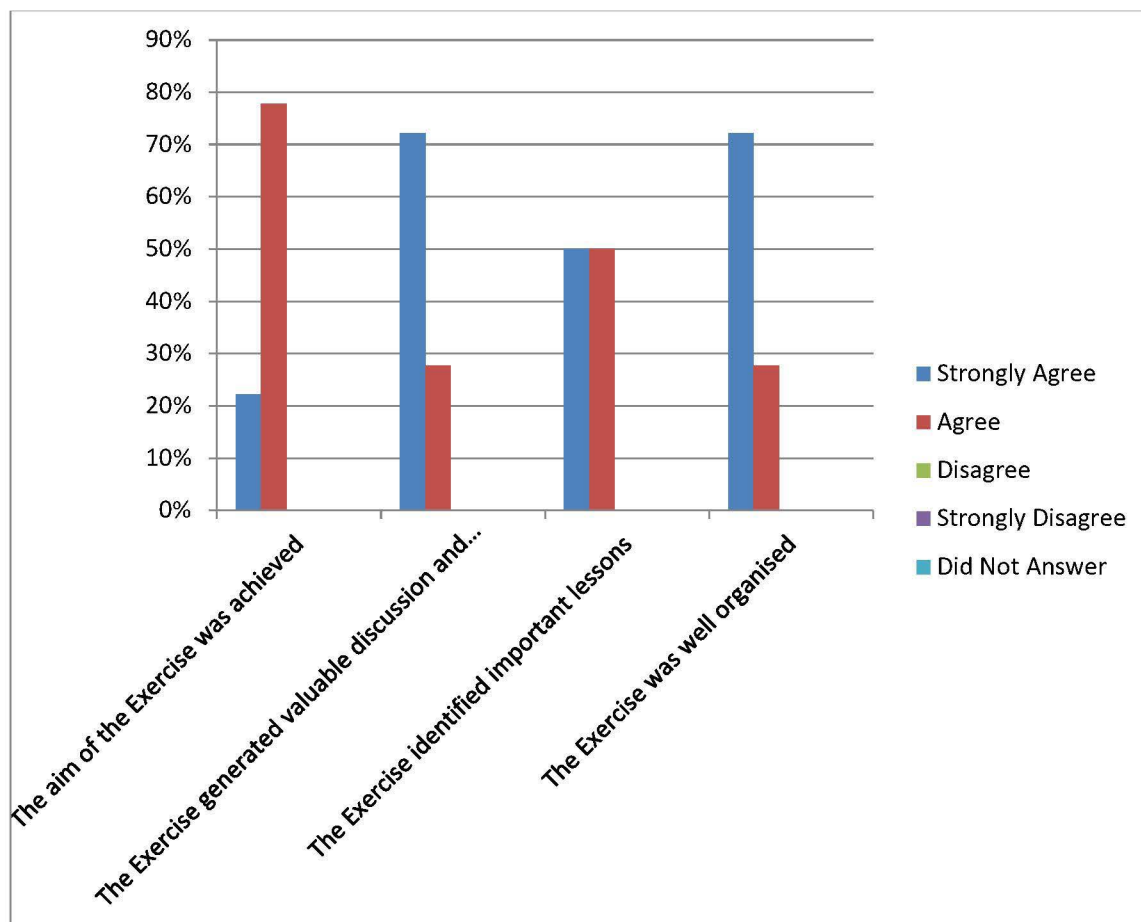
16	George Leahy	Deputy Director of Health Protection Public Health England	Name Redacted	he.gov.uk
17	Dilys Morgan	Head of Emerging Infections & Zoonoses Public Health England		he.gov.uk
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Appendix D – Participant feedback

There were 34 attendees at the exercise. This comprised 26 participants, 1 facilitator and 5 members of Exercise Control. 18 participants completed feedback forms. Feedback on the exercise is displayed below. 100% of responding participants strongly agreed or agreed that the aim of the exercise was achieved and 100% thought the session's generated important issues and lessons identified.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Did Not Answer
The aim of the exercise was achieved	22%	78%	0%	0%	0%
The exercise generated valuable discussions and actions	72%	28%	0%	0%	0%
The exercise identified important lessons	50%	50%	0%	0%	0%
The exercise was well organised	72%	28%	0%	0%	0%



Appendix E - Glossary

BAU	Business As Usual
CMO	Chief Medical Officer
CONOPS	Concept of Operations
DHSC	Department of Health and Social Care
ED	Emergency Department
EPRR	Emergency Preparedness, Resilience and Response
ERD	Emergency Response Department
EU	European Union
EWRS	Early Warning and Response System
GP	General Practitioner
HCID	High Consequence Infectious Disease
HDG	Health Delivery Group
IHR	International Health Regulations
NABB	National Association of Blood Bikes
NHS	National Health Service
OGD	Other Government Department
PHE	Public Health England
POI	Person of Interest
PTSD	Post-Traumatic Stress Disorder
SCG	Strategic Coordinating Group
SME	Subject Matter Expert
SOPs	Standard Operating Procedures
TOR	Terms of Reference
TTX	Table-Top exercise
VHF	Viral Haemorrhagic Fever

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Distribution

NHS England HCID Programme Board
All registered exercise participants

Disclaimer

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This report has been compiled from the comments made by the participants during the exercise and the observations of facilitators and note takers. The report's author has tried to assimilate this information in an impartial and unbiased manner to draw out the key themes and lessons: the report is not a verbatim account of the exercise. The report is then quality checked by the senior management within PHE's Emergency Response Department before it is released to the commissioning organisation.

The lessons identified in the report are not therefore necessarily PHE's corporate position; they are evidenced on the information gathered at the exercise and interpreted in the context of ERD's experience and judgement. It is suggested that the lessons identified are reviewed by the appropriate organisations to assess if any further action is required.

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