



Public Health  
England

Protecting and improving the nation's health

# **Viral haemorrhagic fever border screening: The experience of Ebola**

Dr Jenny Harries  
PHE Regional Director - South of England  
Director PHE Ebola Screening & Returning Workers Programme

# Ebola virus disease

## SOURCE

In Africa, particular species of fruit bats are considered possible natural hosts for Ebola virus.

## TRANSMISSION

Infected bats are thought to transmit the disease to humans, or indirectly through other animals which are hunted for their meat.

## DAMAGE

Incubation period is from two to 21 days. Death from the disease is often caused by multiple organ failure and tissue death.

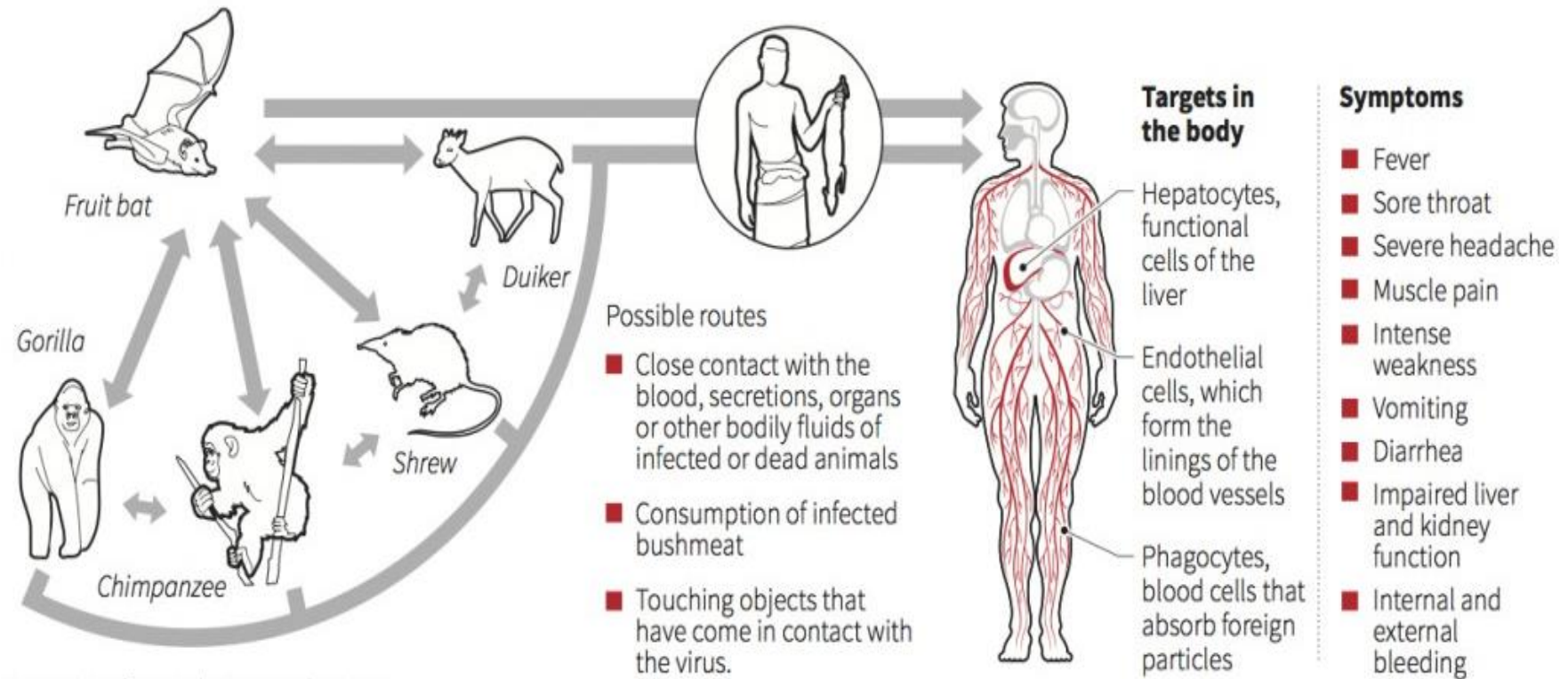


Figure 1: Ebola Virus Disease - sources, transmission and effects. Courtesy of G. Cabrera, Thompson Reuters



# Outbreak timelines

- On **23rd March 2014** - WHO confirmed an outbreak of Ebola virus disease in south-eastern Guinea. This was the first time an outbreak had been diagnosed in this part of Africa, and is now the largest known outbreak of this disease.
- **8th August 2014** - Declaration of Public Health Event of International Concern by World Health Organization
- The Foreign and Commonwealth Office advised against all but essential travel to Sierra Leone, Liberia and Guinea, except for those directly involved in the Ebola response.





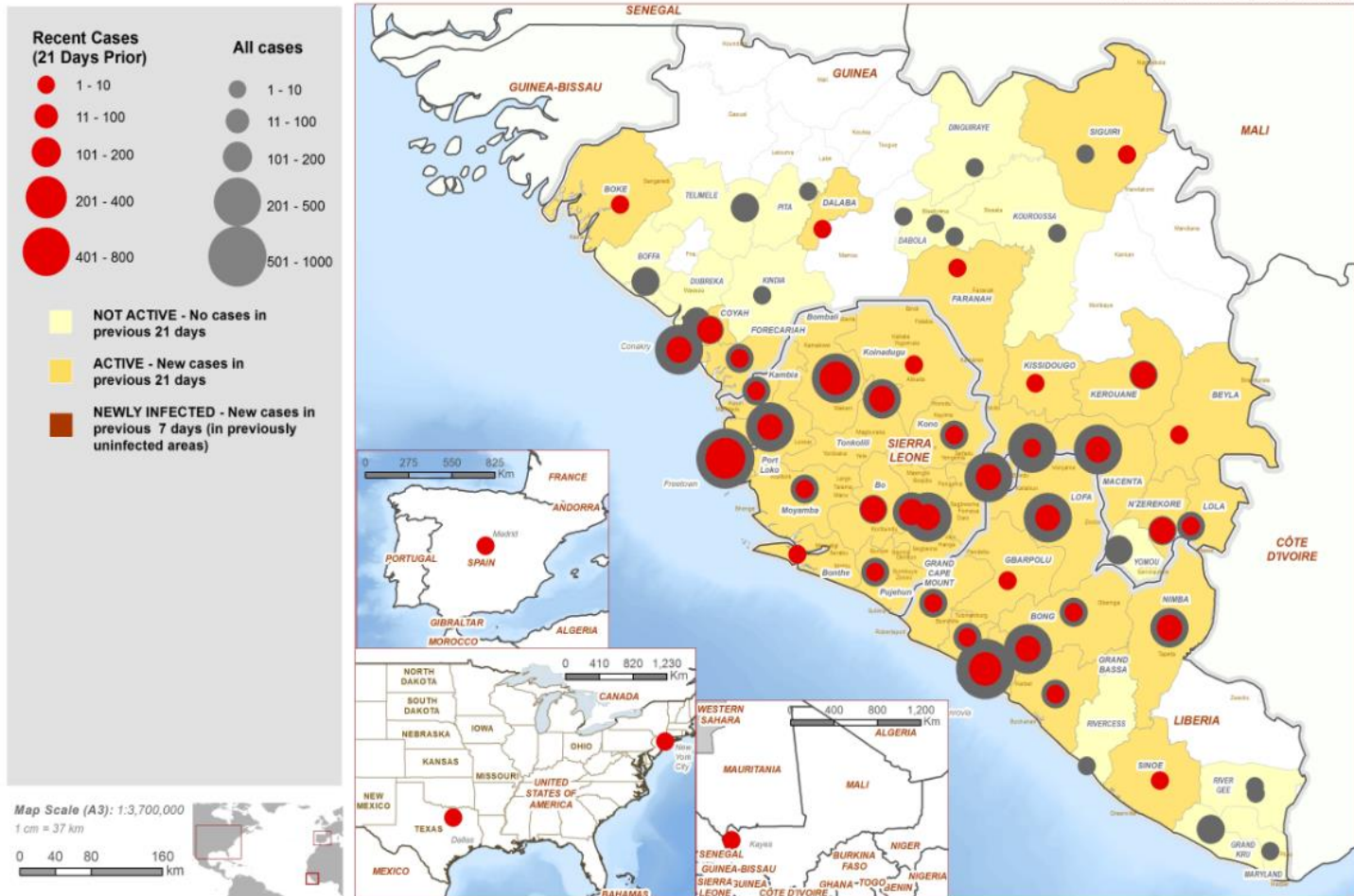
**EBOLA OUTBREAK RESPONSE: REGIONAL CONFIRMED AND PROBABLE CASES**

The boundaries and names shown and the designations used on this map do not imply the endorsement of any particular administration or the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. Shaded and dotted lines or marks represent approximately border lines for which there may not yet be full agreement.



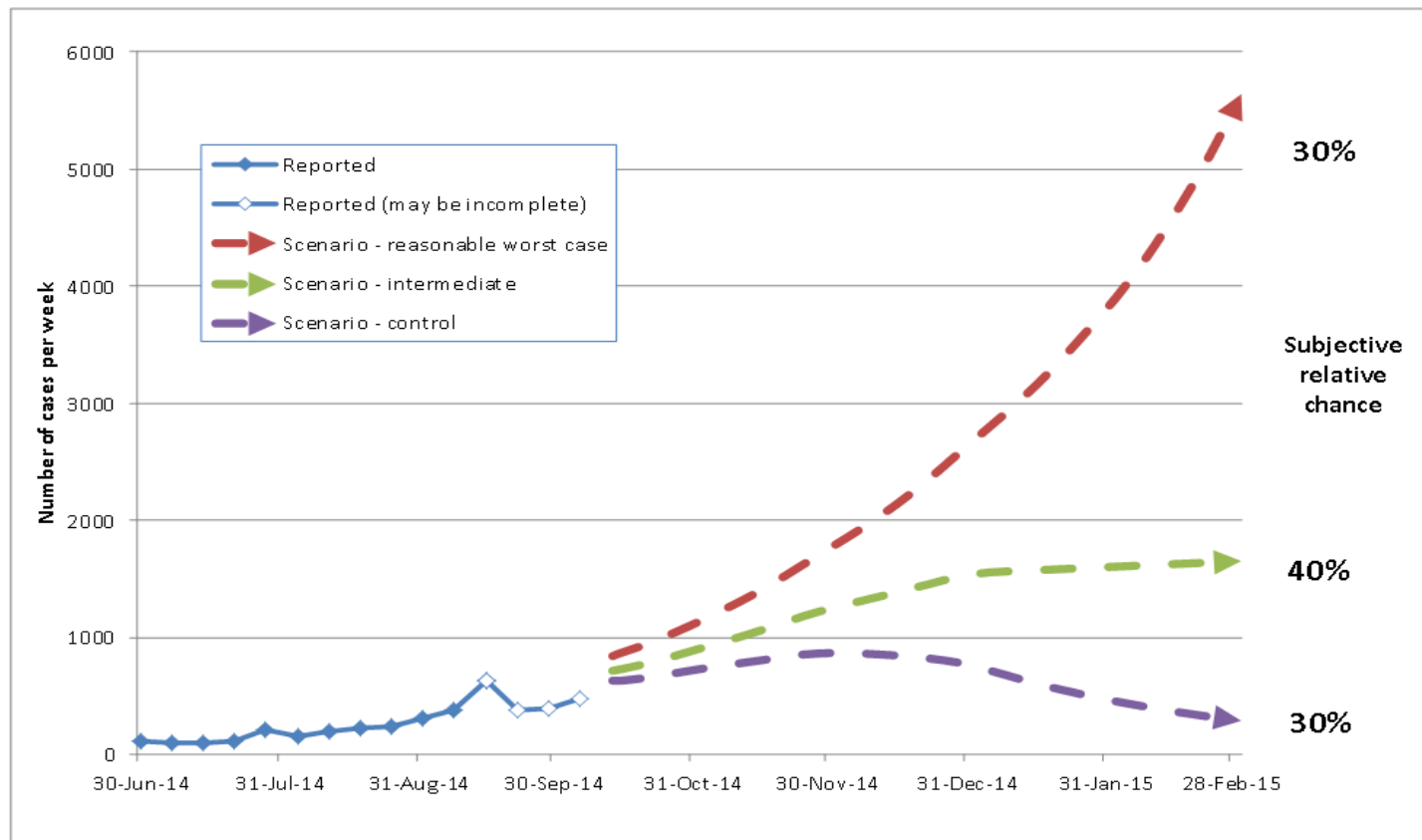
World Health  
Organization

MAP DATE: 29 October 2014



# Predicted spread West Africa – Oct '14

Indicative Future Scenarios - Number of Cases per Week (Sierra Leone)



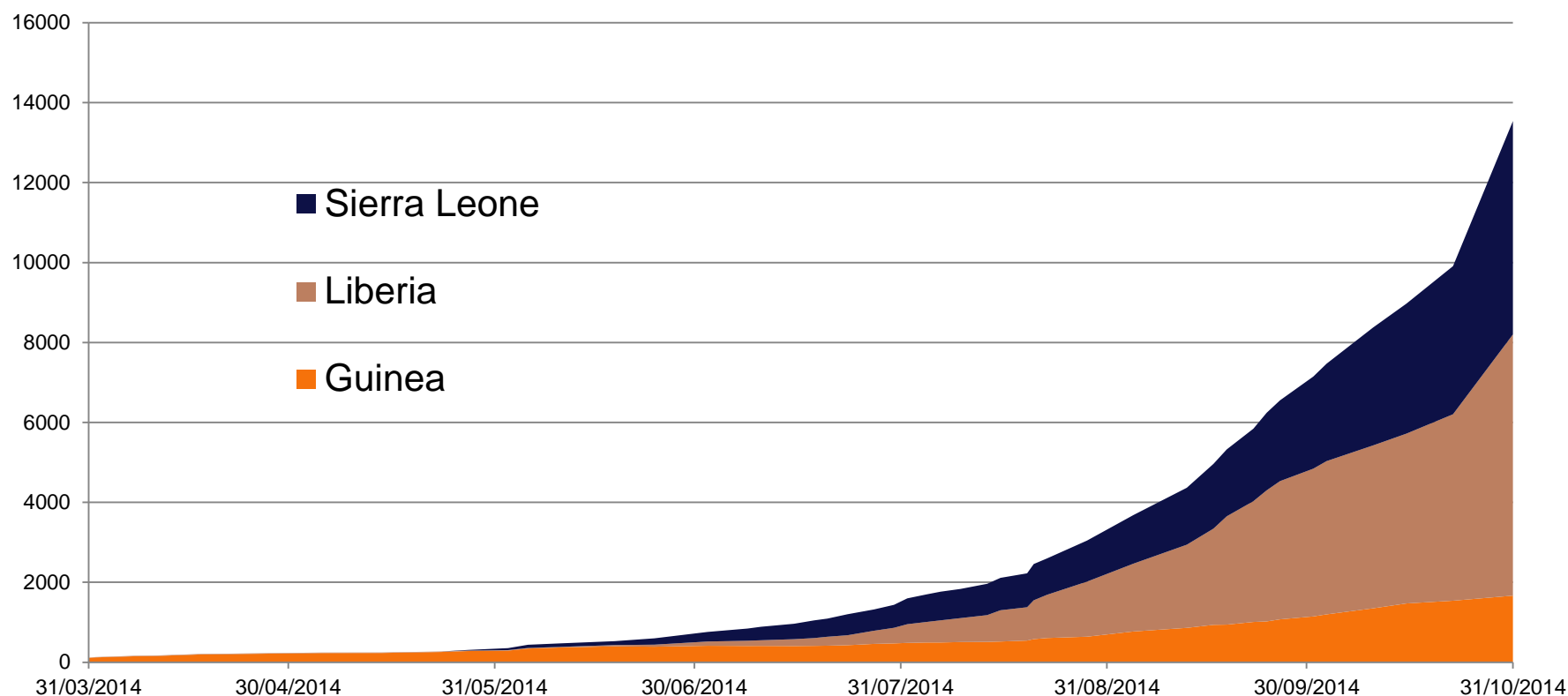
- 1) This graph shows possible outcomes for best, worst and intermediate scenarios, given current planned interventions.
- 2) It emphasises the considerable uncertainty which remains. All three outcomes are plausible at this time.

# Situation October 2014

## Total Cases and Deaths (as of 29 OCT\*)

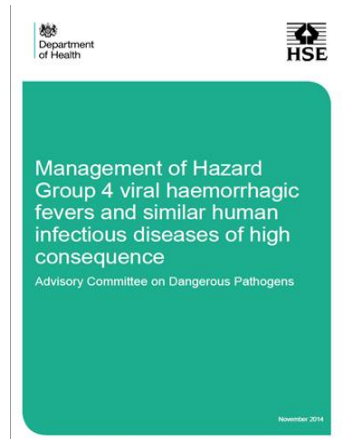
**Cases**     **13,567**

**Deaths**    **4,951**



# Existing infrastructure for High Hazard Infections

- ❖ Civil Contingencies Act – requires routine national & local exercising
- ❖ COBR: national decisions on emergency response
- ❖ SAGE and Advisory Committee on Dangerous Pathogens - expert advisory input
- ❖ National disease surveillance system
- ❖ National Focal Point (within PHE)
- ❖ & Designated Ports, Port Health Plans





# UK Effort against Ebola

## **In affected countries:**

- ❖ Focus on Sierra Leone
- ❖ Army ship – building ETCs and laboratories
- ❖ Provision of Doctors and Nurses from NHS
- ❖ Provision of laboratory staff through Public Health England

## **In the UK – Declaration of PHE Level 4 National Incident:**

- ❖ Advisory – Specialist Epidemiology, risk management
- ❖ Guidance – training eg PPE
- ❖ Screening and Returning Workers Programme

# Communications Strategy – 3 Steps

**1. Preparedness:** building a bedrock of public confidence in advance of the emergence of the first case and greater resilience in the NHS

**2. First case:** using the management of the first case to build confidence further – cementing public belief that we can contain any threat from Ebola, and that we have made the right preparations

**3. Ongoing management:** demonstrating – through confident handling of further cases, or, if no further cases, the promotion of the international strategy – effective management of the threat

# Screening: Three main reasons:

1. We needed to mitigate the risk of disease importation and transmission in the UK
2. We wanted to increase knowledge of Ebola disease – travellers, returning workers, professionals and the public
3. Manage national and international public concern

# Where we screened

## **On site/ Enhanced**

AIR:

London Heathrow

London Gatwick

Birmingham

Manchester

RAIL:

London St Pancras

## **Off site/ Non-enhanced**

Shipping ports

Provincial airports

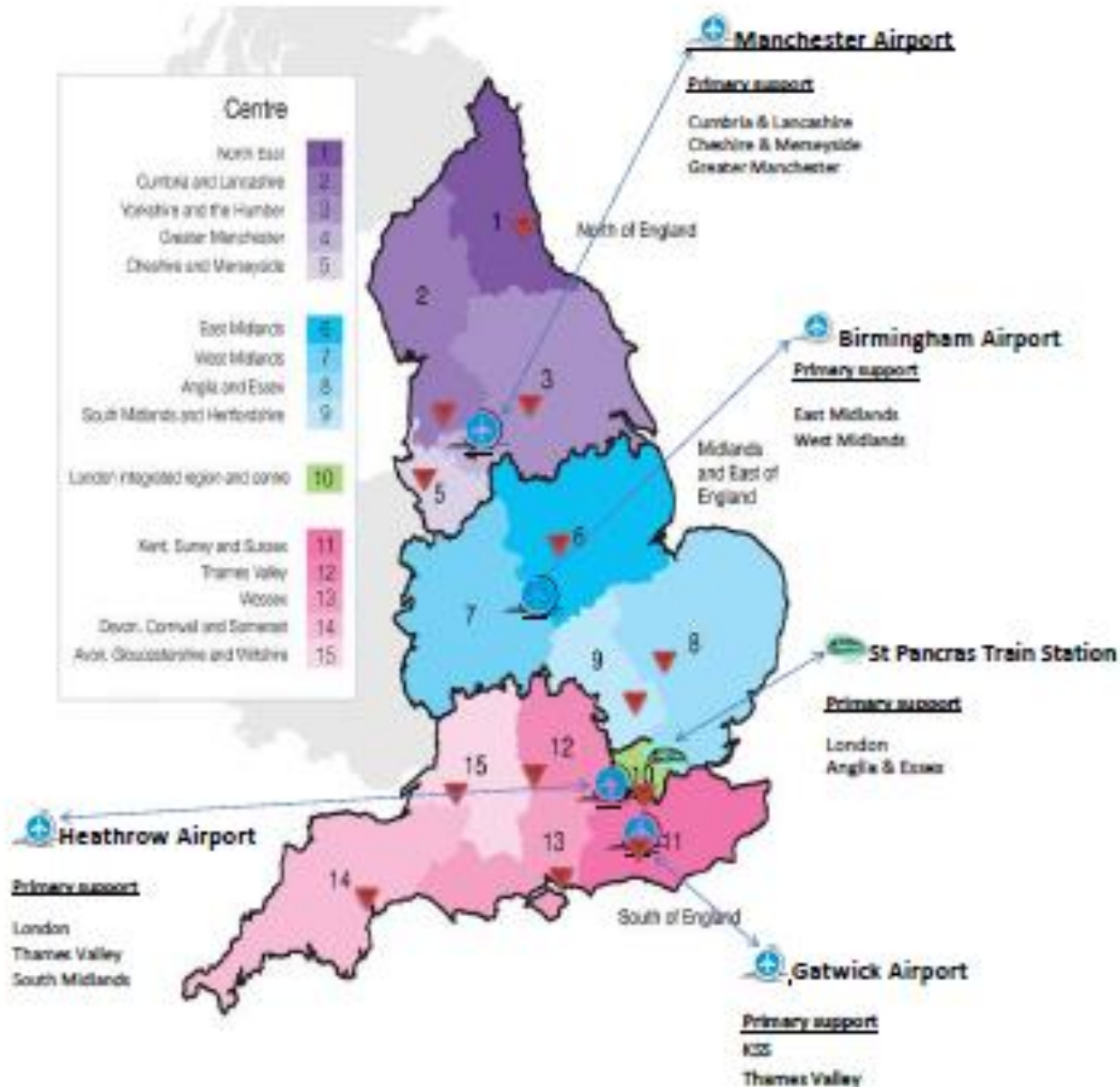
Private airports

Out of hours

presentations

Diplomatic personnel

## Ebola: Enhanced Port screening locations





# Who we screened

## **1 Travellers from affected countries:**

- sustained community transmission
- Sierra Leone, Guinea & Liberia
- first entry to UK, not in transit
- regardless of exit or intermediate screening

## **2 Returning workers:**

- health, miners, engineers, journalists

## **3 Returning Healthcare workers:**

- NGOs
- UK Med

# The screening process



# Contact free temperature assessment



# Screening tools



**Public Health England**  
Protecting and improving the nation's health

**Returning from West Africa?  
Information about Ebola**

There is a large Ebola outbreak going on at present in West Africa

- the risk of Ebola is low for most travellers
- however, malaria is a much more common infection in West Africa and can have similar early symptoms. It is treatable if diagnosed quickly, so contact NHS 111 for advice if you feel unwell
- if you are staying in the UK and develop symptoms such as:
  - fever (37.5°C or higher)
  - headache
  - body aches
  - diarrhoea
  - vomiting

**within 21 days of returning** from Sierra Leone, Guinea or Liberia, you should contact NHS 111 and tell them where you have travelled.

If you are in transit to Scotland, Wales or Northern Ireland, and develop these symptoms after arrival, you should contact the relevant number and tell them where you have travelled:

- Scotland: NHS 24 (dial: 111)
- Wales: NHS Direct Wales (dial: 0845 46 47)
- Northern Ireland: contact your GP or local emergency department

If you are in transit to another country and develop these symptoms after you have left the UK, you should seek immediate medical attention there.

For more information visit: [www.gov.uk/phe](http://www.gov.uk/phe) or [www.nhs.uk/ebola](http://www.nhs.uk/ebola)  
For health advice call **NHS 111**

© Crown copyright 2014  
Licensed under the CC BY 3.0 licence

**Public Health England**  
Protecting and improving the nation's health

**Version 7.3 FINAL  
31st December 2014**

**IMPORTANT INFORMATION FOR YOUR HEALTH**  
Port of entry Ebola health assessment form

Intended principally to be completed by passengers from Guinea, Sierra Leone or Liberia.

This form is to obtain important information from passengers entering this country, through UK ports, on any possible exposure or symptoms of the Ebola virus. The data received through this form will be treated confidentially and in accordance with data protection legislation and will not be shared with immigration authorities. Please complete in block capitals.

**Date** (DDMMYYYY) \_\_\_\_\_

Please answer all questions. Ask an official if you need help.

1. Passenger information			
1.1 Family name		1.2 First name(s)	
1.3 Gender		1.4 Date of birth (DDMMYYYY)	
1.5 Nationality		1.6 Passport number	
1.7 Address in UK			
1.8 Postcode			
1.9 UK Phone numbers	Landline(s)	1.10 Mobile(s)	
1.11 Email address			
2. Journey information			
2.1 How did you arrive in the UK? (please tick)	Plane	Eurostar/Arrival time	Other method
2.2 Last flight number		2.3 Terminal (if appropriate):	
2.4 Port of entry	Row and seat number		
London Heathrow <input type="checkbox"/> London City <input type="checkbox"/> Newcastle <input type="checkbox"/> London Gatwick <input type="checkbox"/> Birmingham <input type="checkbox"/> Bristol <input type="checkbox"/> Eurostar <input type="checkbox"/> Manchester <input type="checkbox"/> Other <input type="checkbox"/> If other, please specify: _____			
2.5 Please give the last date you were in one of the Ebola affected countries (DDMMYYYY)			

1

Port of entry Ebola health assessment form

4. Health information			
4.1 Do you have a temperature/fever now?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.2 Have you had a temperature at any time during the past 48 hours?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.3 Currently do you have any of the following:			
4.4 Headache	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.5 Vomiting/feeling sick?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.6 Diarrhoea	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.7 Intense fatigue or exhaustion?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.8 Bruising	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
4.9 Unexplained or unusual bleeding?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unknown <input type="checkbox"/>
Medicines			
4.10 Are you taking any medication?			
4.11 Have you taken any paracetamol, aspirin or other antipyretic medication within the past 48 hours?			
4.12 If so, when did you last take this medication?			

The following sections (5 – 9) are to be completed by PHE screening staff only

5. Temperature on arrival in UK	
5.1 Temperature (°C)	
5.2 Date (DD/MM/YYYY)	
5.3 Time (hh:mm)	
5.4 Name of person taking temperature	
5.5 How was the temperature taken?	Tympanic thermometer <input type="checkbox"/> Infrared thermometer <input type="checkbox"/>

3



## Algorithm for Ebola Screening for all passengers (including HCW's and Aid Workers) at port

### Hazardous Activities:

Came into contact with a person known/suspected to have Ebola?

Cared for anyone with a severe illness, or who has died of an unknown cause

Attended any funerals or had any contact with any dead bodies

Visited any traditional healers or been admitted to hospital

Handling lab specimens of contaminated bodily fluids

Contact with contaminated bodily fluids

Contaminated body fluids are blood, urine, faeces, tissues, and laboratory cultures from an individual or laboratory animal known or strongly suspected to have Ebola

### Significant Signs & Symptoms:

Recent acute onset of any of -

Fever (Temp  $\geq 37.5^{\circ}\text{C}$ )

Severe weakness

Vomiting

Watery diarrhoea

Unexplained severe

bruising or unusual bleeding

Symptoms are not significant if recovering, minimal not present in the last 12 hours

Passenger arriving at port, who has travelled through or returned from one of the three hazardous countries in the last 21 days (Sierra Leone, Liberia, Guinea)

Complete a Health Assessment form

Identify passenger as Category 0, 1, 2 or 3 (see below)

Take and record temperature using tympanic thermometers provided

Temperature not raised  $< 37.5^{\circ}\text{C}$

NO significant signs/symptoms and NOT taking a medicine which could be masking a symptom of Ebola\*

If Cat 0 or 1, give leaflet, reassure and discharge OR If cat 2/3, give leaflet, arrange for follow up and monitoring\*

Any ONE of the significant signs/symptoms or taking a medicine which could be masking a symptom of Ebola\*

Discuss with senior PHE clinician in screening team to ASSESS PATIENT

Decision to allow home. Give leaflet, reassure and discharge. Arrange for follow up and monitoring\*

Temperature raised  $\geq 37.5^{\circ}\text{C}$

If no other symptoms, repeat after 15 mins

Temperature still raised  $\geq 37.5^{\circ}\text{C}$

If any other significant signs or symptoms

1. Isolate the patient immediately  
2. Assess risk factors - vomiting, diarrhoea and bleeding  
3. Contact local ambulance service, advise if any risk factors present and arrange for transfer to secondary care  
4. Alert local hospital that a patient is being transferred for Ebola assessment.

\*For example, some common medicines have antipyretic properties including Aspirin, Paracetamol and Ibuprofen; these medicines can make temperature measurements unreliable and therefore their use requires reference to a senior PHE clinician.  
\*Refer to Essex HPT Fax no. 01376 503073 or Scan and email to [essexhpt@phe.gov.uk](mailto:essexhpt@phe.gov.uk) from a phe.gov.uk email

Category 0 This person has not visited an Ebola affected area, has had no laboratory contact with Ebola and has had no contact with an Ebola case.

Category 1 This person visited an Ebola affected area, but had no direct contact with an Ebola case or body fluids while there, nor attended a burial or any other high-risk event. OR laboratory staff in a Level 4 laboratory in country, assessed to be operating to a UK standard.

Category 2 (Indirect contact, Low risk exposures). This person had direct (close) contact with Ebola cases or their body fluids (but did not provide direct physical contact as part of clinical care), treated and wore appropriate protective equipment (PPE) with no known breaches.

Category 3 (Direct contact, High risk exposures). This person had direct contact with a symptomatic case with potential exposure to bodily fluids, including vomit, blood, faeces, urine and/or sweat OR supervised sexual contact with a recovering EVD case within 7 months of their symptom onset OR had direct physical contact as part of clinical care, or contact with bodily fluids with or without appropriate protective equipment (PPE), including those handling bodily fluids, and irrespective of known breaches OR had direct exposure of skin or mucous membranes to potentially infectious blood or body fluids, including sexual fluids and body fluids, including those handling bodily fluids, and irrespective of known breaches to PPE standard.



### Ebola information pack: Monitoring your health

For the next 21 days we would be grateful if you could make a record of your temperature and your state of health twice a day.

If your temperature is 37.5°C or above, or you develop any minor illness, then please call your designated Public Health England (PHE) contact for advice straight away.

If you develop any serious or severe illness, including persisting or severe headache, diarrhoea or vomiting, or profound weakness then do not hesitate to call 999, stating that you have been in an Ebola affected area.

If you are ill and you, or a carer need to clear up any body fluid spills (vomit, faeces, urine, or blood) then please use the spills kit that we have provided following the instructions in this note.

#### Taking your temperature

You should have been provided with an electronic tympanic thermometer and a set of disposable covers. The thermometer has an instruction card included with it, please read these carefully.

Beware that your temperature can differ between each ear, so please always use the same ear to take your temperature each time.

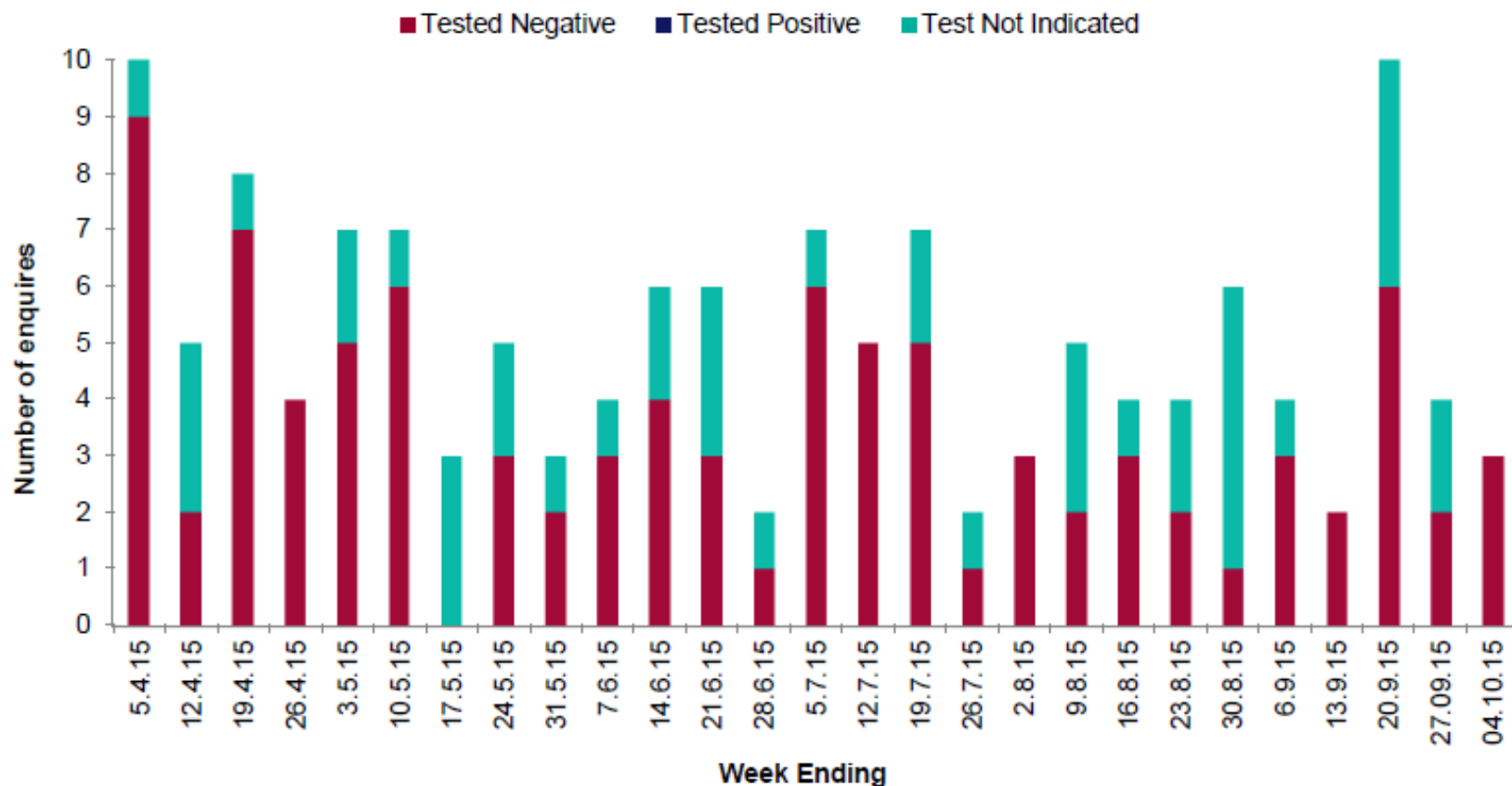
Tympanic thermometers can be difficult to use easily on yourself, so please ask a friend or member of your family to help if you have difficulties.

Always use the same thermometer, please do not use any other thermometer that you may have in the house, and if the one that we supply develops a fault please call your PHE contact for help.



# C.1 Imported Fever Service activity

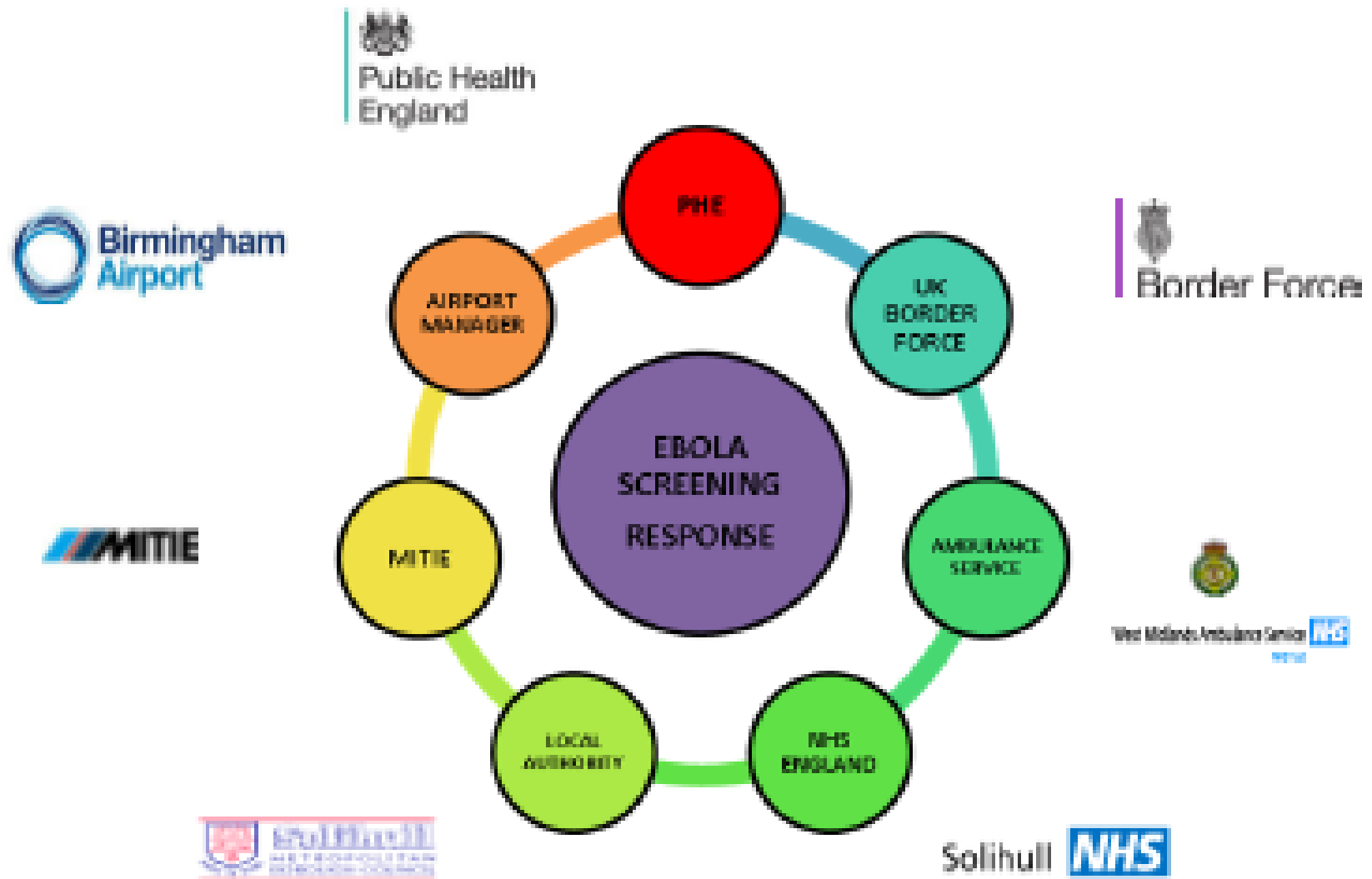
**Figure 9: UK weekly Ebola outbreak related clinical enquiries to IFS in past 6 months by Ebola test outcome**



**Data source:** VHF Screens 05 October 2015, Imported Fever Service (data up to 10:03 05/10/15)

**Note:** Tests carried out on or after 05 October 2015 not included as not complete week

# WORKING IN PARTNERSHIP





Public Health  
England

## Vous revenez d'Afrique de l'Ouest? Informations concernant le virus Ebola



### Une importante épidémie d'Ebola est actuellement en cours en Afrique de l'Ouest

- les risques sont faibles pour la plupart des voyageurs
- le paludisme reste une infection bien plus courante en Afrique de l'Ouest, dont les premiers symptômes peuvent être similaires. Diagnostiqué rapidement, il est traitable, contactez donc le service NHS 111 pour demander conseils si vous vous sentez mal
- si vous restez au Royaume-Uni et développez des symptômes tels que:
  - fièvre (plus de 37.5°C)
  - maux de tête
  - courbatures
  - diarrhée
  - vomissements

**dans les 21 jours suivant un retour** de Sierra Leone, de Guinée ou du Libéria, vous devez contacter le NHS 111 et indiquer où vous avez voyagé.

Si vous êtes en transit vers l'Écosse, le pays de Galles ou l'Irlande du Nord, et développez ces symptômes après votre arrivée, vous devez appeler avec le numéro correspondant et indiquer où vous avez voyagé:

- Écosse: NHS 24 (composer le: 111)
- Pays de Galles: NHS Direct Wales (composer le: 0845 46 47)
- Irlande du Nord: contacter votre médecin ou service des urgences local

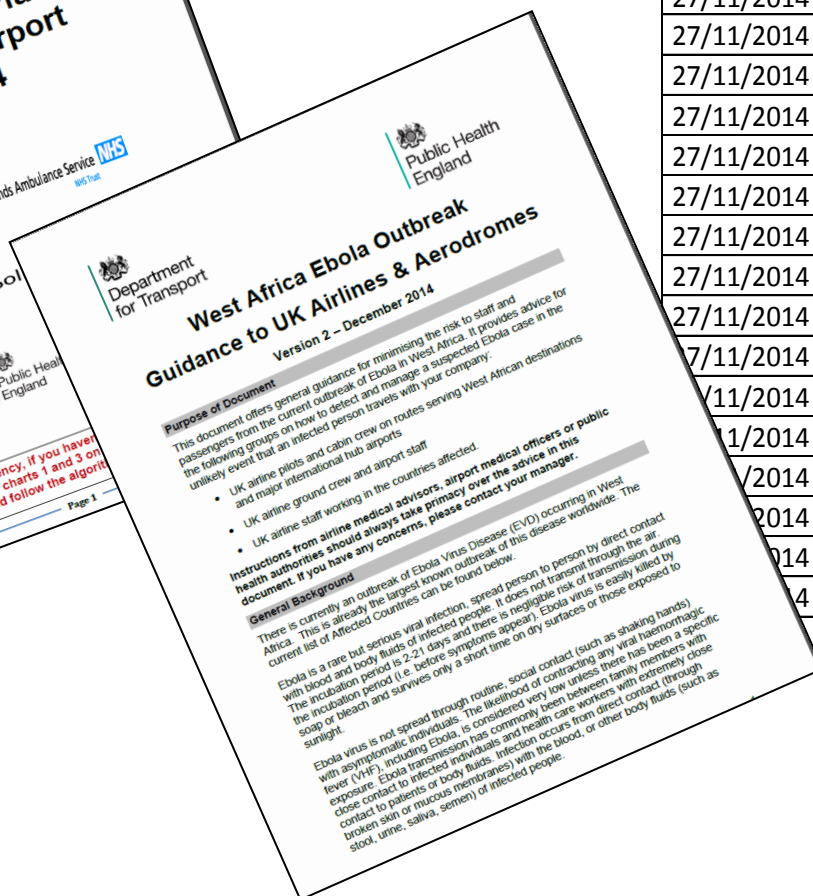
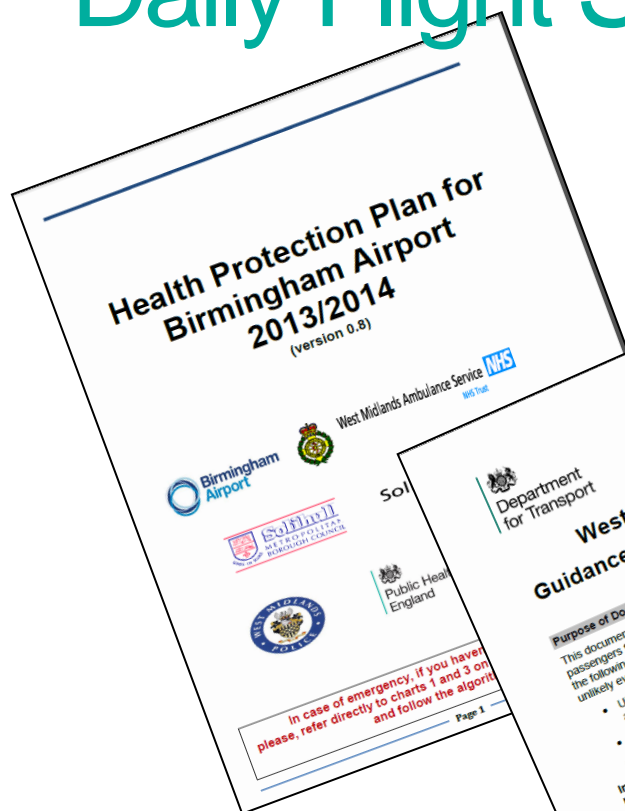
Si vous êtes en transit pour un voyage vers un autre pays et développez ces symptômes après avoir quitté le Royaume-Uni, faites immédiatement appel à des services de santé sur place.

Pour plus d'informations, veuillez visiter: [www.gov.uk/ebola](http://www.gov.uk/ebola) ou  
[www.nhs.uk/ebola](http://www.nhs.uk/ebola)

Pour obtenir des conseils de santé, contacter le **NHS 111**



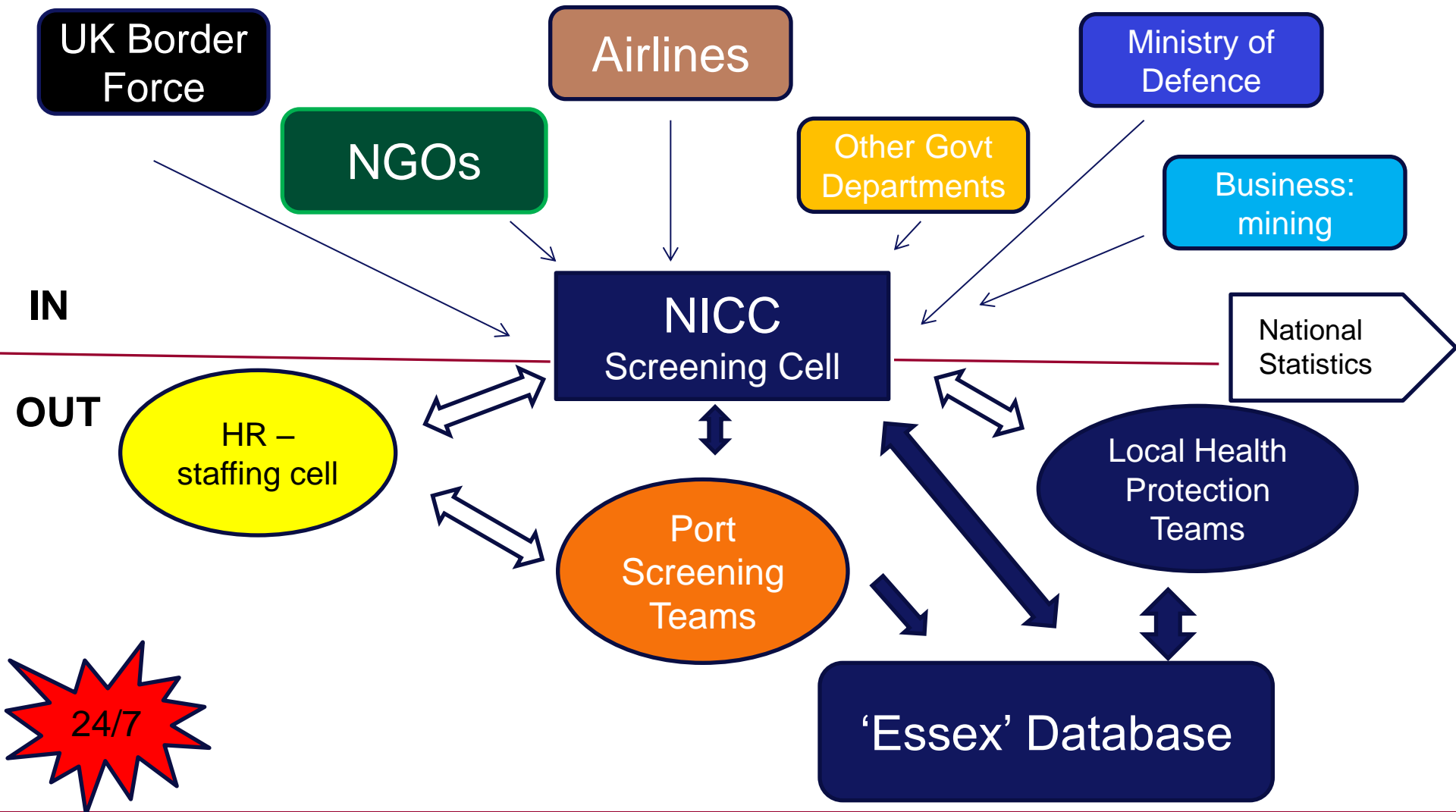
# Daily Flight Schedule – BHX Airport



27/11/2014	THU	08:20	CDG	AF 1164	Air France
27/11/2014	THU	08:40	AMS	KL 1421	KLM
27/11/2014	THU	10:00	BRU	SN 2037	BRU Airlines
27/11/2014	THU	10:10	CDG	BE 3002	Flybe
27/11/2014	THU	10:20	AMS	BE 102	Flybe
27/11/2014	THU	11:50	BRU	SN 2039	BRU Airlines
27/11/2014	THU	13:00	CDG	AF 1064	Air France
27/11/2014	THU	13:00	AMS	KL 1425	KLM
27/11/2014	THU	13:20	BRU	SN 2045	BRU Airlines
27/11/2014	THU	15:50	CDG	BE 3006	Flybe
27/11/2014	THU	16:20	AMS	BE 104	Flybe
27/11/2014	THU	16:30	AMS	KL 1431	KLM
27/11/2014	THU	17:20	BRU	SN 2047	BRU Airlines
27/11/2014	THU	18:40	AMS	BE 108	Flybe
27/11/2014	THU	19:00	CDG	AF 1564	Air France
27/11/2014	THU	20:50	AMS	BE 106	Flybe
27/11/2014	THU	21:10	CDG	BE 3010	Flybe
27/11/2014	THU	21:20	BRU	SN 2049	BRU Airlines
27/11/2014	THU	21:50	AMS	KL 1435	KLM



# Use of data: screening & returning workers



# Returning Workers Scheme

- **Targeted risk groups**  
Healthcare workers, Journalists, photographers, Miners, Engineers
- **Complex registration system**  
Needs support of NGOs, businesses, MoD and workers themselves
- **Risk categorisation**  
Absent (0) – High (3)
- **Community Monitoring**  
Direct relationship with PHE Local Health Protection Teams, twice daily temperature monitoring for 21 days
- **Risk management**  
Work, residential and travel guidance: Aim for easy self extraction should illness/symptoms develop quickly

# Risk categorisation for Port Health screening process

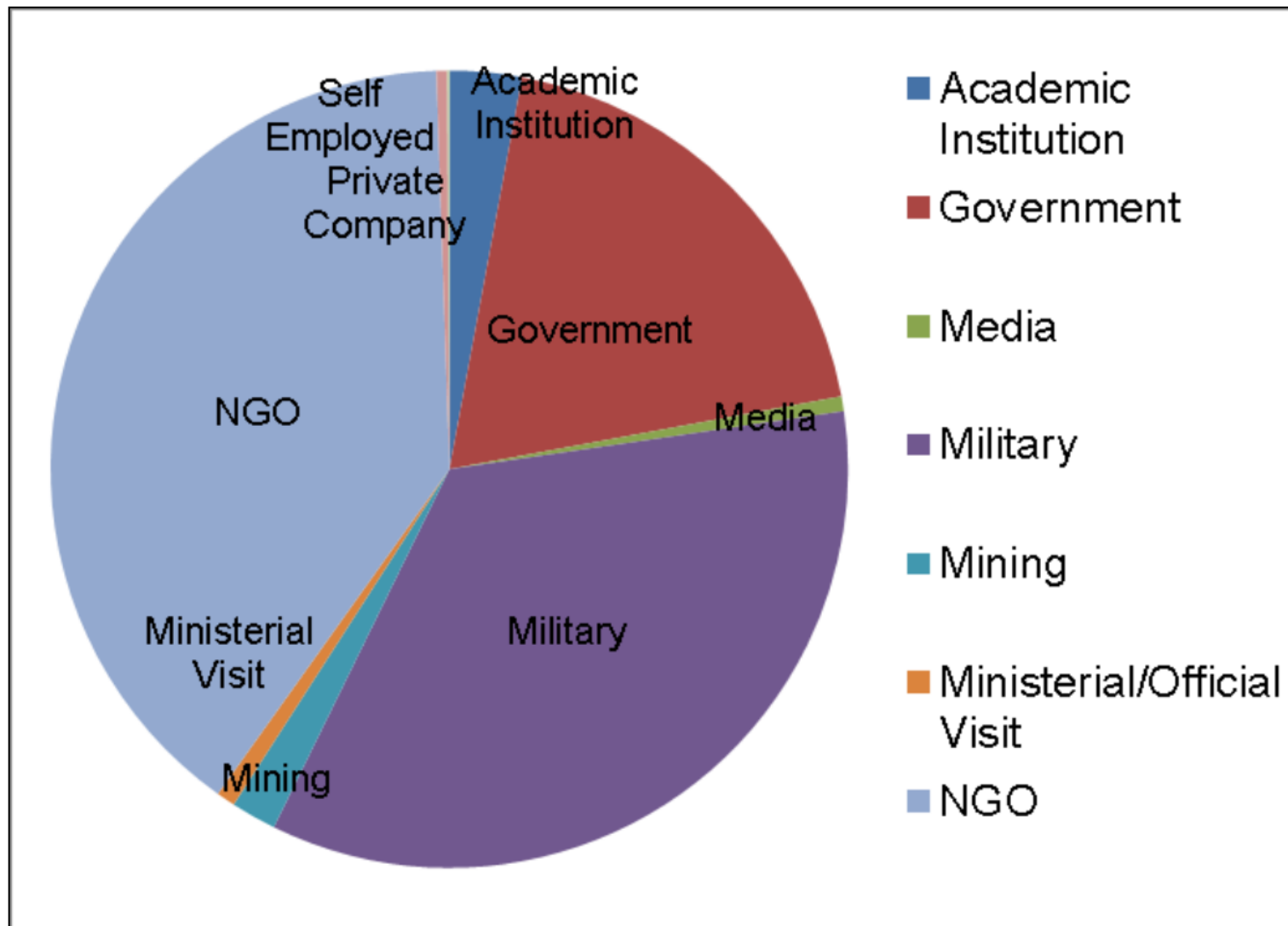
**Category 0:** This person has not visited an Ebola affected area, has had no laboratory contact with Ebola and has had no contact with an Ebola case.

**Category 1:** This person visited an Ebola affected area, but had no direct contact with an Ebola case (or body fluids) while there; nor attended a burial or any other high-risk event. OR laboratory staff in a country assured to be operating to a UK standard.

**Category 2: (Low-risk exposure)** This person had direct (close) contact with Ebola cases or their body fluids (but did not provide direct physical contact as part of clinical care), trained and wore appropriate protective equipment/clothing (PPE) with no known breaches.

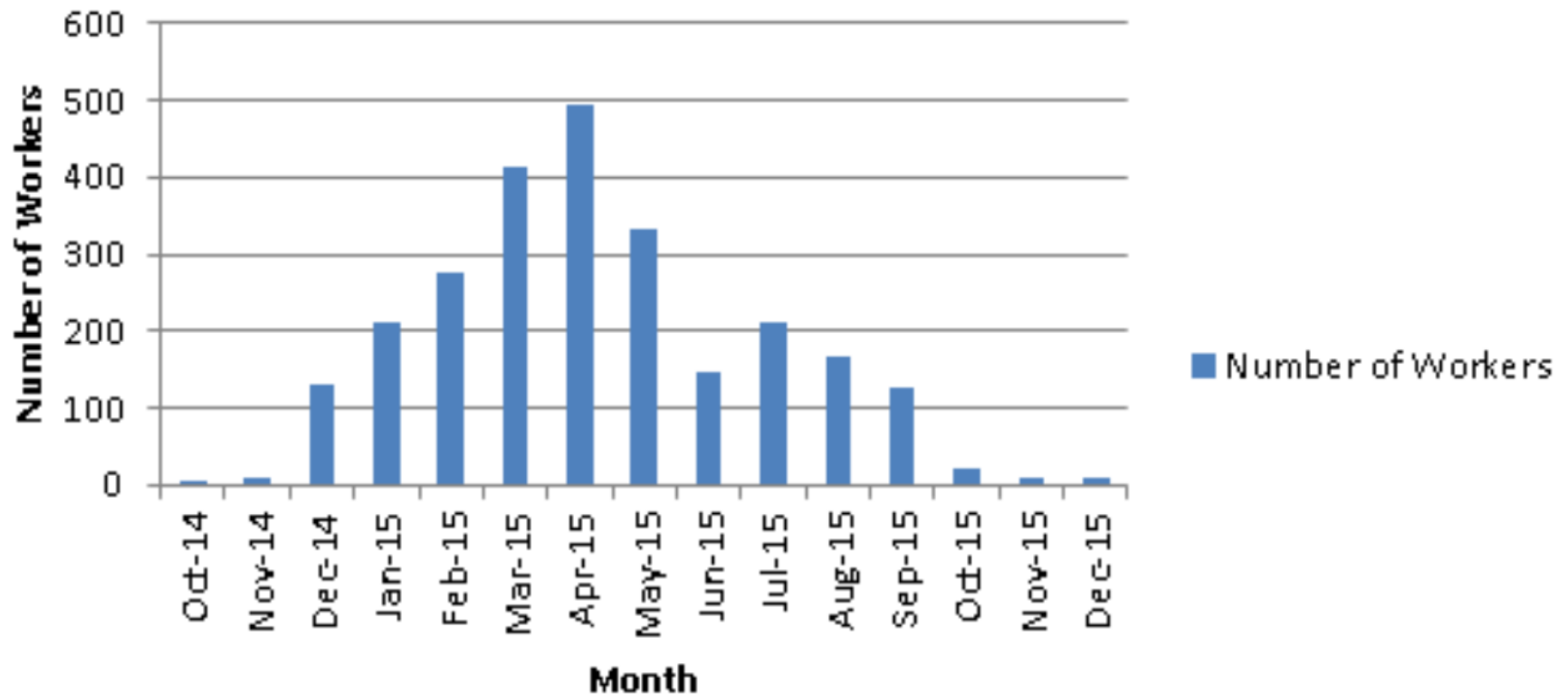
**Category 3: (High-risk exposure)** This person had direct contact with a symptomatic case with potential exposure to bodily fluids, including vomit, faeces, kissing and/or sexual contact OR unprotected sexual contact with a recovering EVD case within three months of their symptom onset OR had direct physical contact as part of clinical care, or contact with bodily fluids with or without appropriate PPE, including those handling burials, and irrespective of known breaches

# Distribution of returning worker registration



# Risk counterpoint

**Registered Returning Worker Arrivals**





## C.3 Monitoring of returned workers

**Figure 15: Risk category of returned workers reported to PHE Returning Worker Scheme by PHE Centre of residence as of 05/10/2015**

PHE Region Name	PHE Centre Name	Returned Workers >21 days	Returned Workers <= 21 days	Total Returned Workers*¥
London	London	1229	38	1267
Midlands and East of England	Anglia and Essex	161	14	175
	East Midlands	72	1	73
	South Midlands and Hertfordshire	99	3	102
	West Midlands	108	2	110
North of England	Cheshire and Merseyside	57	2	59
	Cumbria and Lancashire	61	1	62
	Greater Manchester	42	4	46
	North East	63	2	65
	Yorkshire and Humber	146	6	152
South of England	Avon, Gloucestershire and Wiltshire	212	5	217
	Devon, Cornwall and Somerset	126	2	128
	Kent, Surrey and Sussex	255	5	260
	Thames Valley	220	7	227
	Wessex	187	2	189
Not Known	No Geography Information Recorded	2313	22	2335
	<b>Total</b>	<b>5351</b>	<b>116</b>	<b>5467</b>

**Data Source:** HP Zone (data up to 11:12 05/10/15)

**Note:** These data only reflect staff registered with the PHE Returning Worker Scheme and therefore may not reflect all workers deployed.

\*Multiple deployments of individuals are not currently reflected within totals

¥Total includes those recorded 'lost to follow up' and those where monitoring has not been recorded

# Did it work...?



# The UK's First Confirmed Case

Public Health England

Department of Health

## Ebola contact tracing

How it works

**Nurse Pauline**

**The Royal Free**  
Main reception  
Accident & Emergency

**Chief Medical Of Ebola in the UK**  
by departmentofhealth  
1,488 views

**National Informa**  
by departmentofhealth  
762 views

**DH digital team - highlights**  
by departmentofhealth  
133 views

**Using data and t outcomes for pai**  
by departmentofhealth  
554 views

**Ebola la la (offici**  
by Al Baley

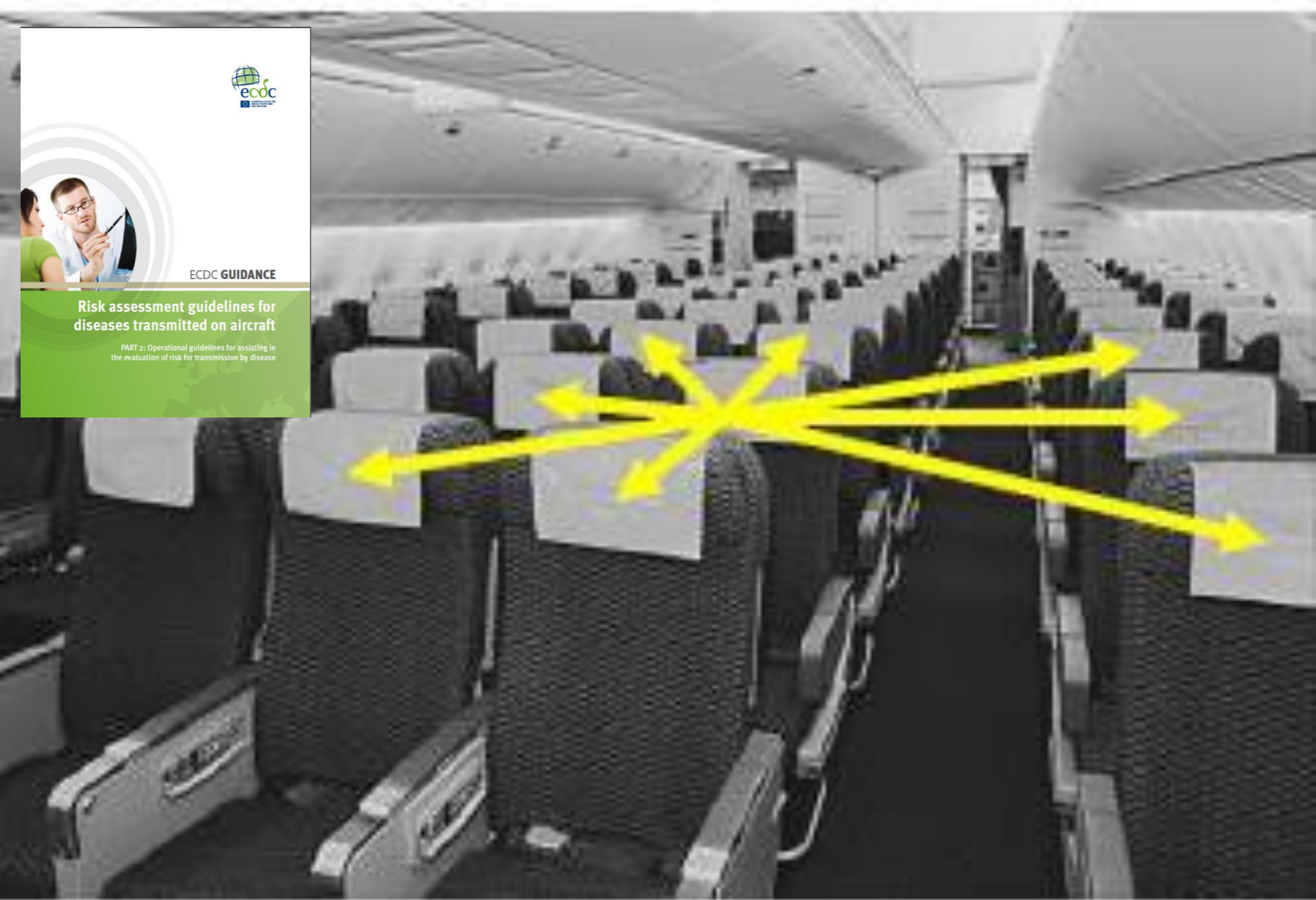
<https://www.youtube.com/watch?v=ntoQpTGHD8c>



ECDC GUIDANCE

## Risk assessment guidelines for diseases transmitted on aircraft

PART 2: Operational guidelines for assisting in the evaluation of risk for transmission by disease





# Gateway to risk management pathway





# Enhanced Screening latest

Passenger arriving at port, who has travelled through or returned from one of the three hazardous countries in the last 21 days (Sierra Leone, Liberia, Guinea)

Complete a Health Assessment form

Identify passenger as Category 1, 2 or 3 (see below)

Take and record temperature using tympanic thermometers provided

Temperature not raised < 38 °C

Temperature raised ≥ 38 °C

NO significant signs and symptoms

Any ONE of the significant signs or symptoms

If Cat 1, give leaflet, reassure and discharge OR  
If cat 2/3, give leaflet, arrange for follow up and monitoring\*

Discuss with senior PHE clinician in screening team to ASSESS PATIENT

Decision to allow home. Give leaflet, reassure and discharge. Arrange for follow up and monitoring\*

1. Isolate the patient immediately
2. Assess symptoms – vomiting, diarrhoea and bleeding
3. Do not touch the patient without PPE provided
4. Follow ACDP guidance for any fluid spill
5. If close contact is necessary ensure PPE is worn
6. Contact local ambulance service ASAP for transfer to secondary care
7. Alert local hospital that a patient is being transferred for Ebola assessment.

## Hazardous Activities:

Come into contact with a person known/suspected to have Ebola?

Cared for anyone with a severe illness, or who has died of an unknown cause

Attended any funerals or had any contact with any dead bodies

Visited any traditional healers or been admitted to hospital

Handling lab specimens of contaminated bodily fluids

Contact with contaminated bodily fluids

Contaminated body fluids are blood, urine, faeces, tissues, and laboratory cultures from an individual or laboratory animal known or strongly suspected to have Ebola

## Significant Signs & Symptoms:

Recent acute onset of any of -

Fever (Temp ≥ 38°C)

Severe weakness

Vomiting

Watery diarrhoea

Unexplained severe

Bruising or unusual

bleeding

Symptoms are not significant if recovering/ minimal/ not present in the last 12 Hours

\*Refer to Essex HPT Fax no. 01376 503073 or Scan and email to [essexhpt@phe.gov.uk](mailto:essexhpt@phe.gov.uk) from a phe.gov.uk email

**Category 1** This person visited an Ebola affected area, but had no direct contact with an Ebola case (or body fluids) while they were there; this includes people who have had casual contact eg visited a home without direct contact with the Ebola patient or body fluids of the patient

**Category 2** This person had direct (close) contact with Ebola cases (or body fluids) while they were in the affected area, but wore appropriate protective equipment/ clothing (PPE), and had no known breaches in PPE

**Category 3** This person had direct (close) contact with Ebola cases (or body fluids) while they were in the affected area, wore appropriate protective equipment/ clothing (PPE), but are concerned that they may have had a breach in these protective measures or have had direct contact with an Ebola patient's blood, without being protected urine or secretions

**Objective** - to improve our ability to detect and isolate Ebola cases at UK ports, ensuring that as many people as possible arriving from the affected countries know the symptoms and how to get access to healthcare services as quickly as possible. Once roll out to St Pancras, Birmingham and Manchester is complete, it will cover 15 terminals in total and mean that 97% of flights connecting from affected areas will be met at locations with screening. This policy will enhance public knowledge, information and provide reassurance to the public.




## Timeline

- 14 October: Heathrow Terminal 1
- 15 October: Heathrow Terminals 2 & 5
- 16 October: Heathrow Terminals 3 & 4
- 21 October: Gatwick North
- 22 October: Gatwick South
- 24 October: St Pancras
- 31 October: Birmingham
- 3 November: Manchester
- Further plans for screening at additional ports can be developed as necessary.

## Latest figures

- At 23:59 hrs on Saturday 1 November: total 486 passengers have been assessed;
- Screened 100% of passengers brought to PHE attention;
- 10 passengers are self-monitoring with access as required to local Health Protection Teams
- 2 people have been referred to the NHS and both subsequently tested negative for Ebola.

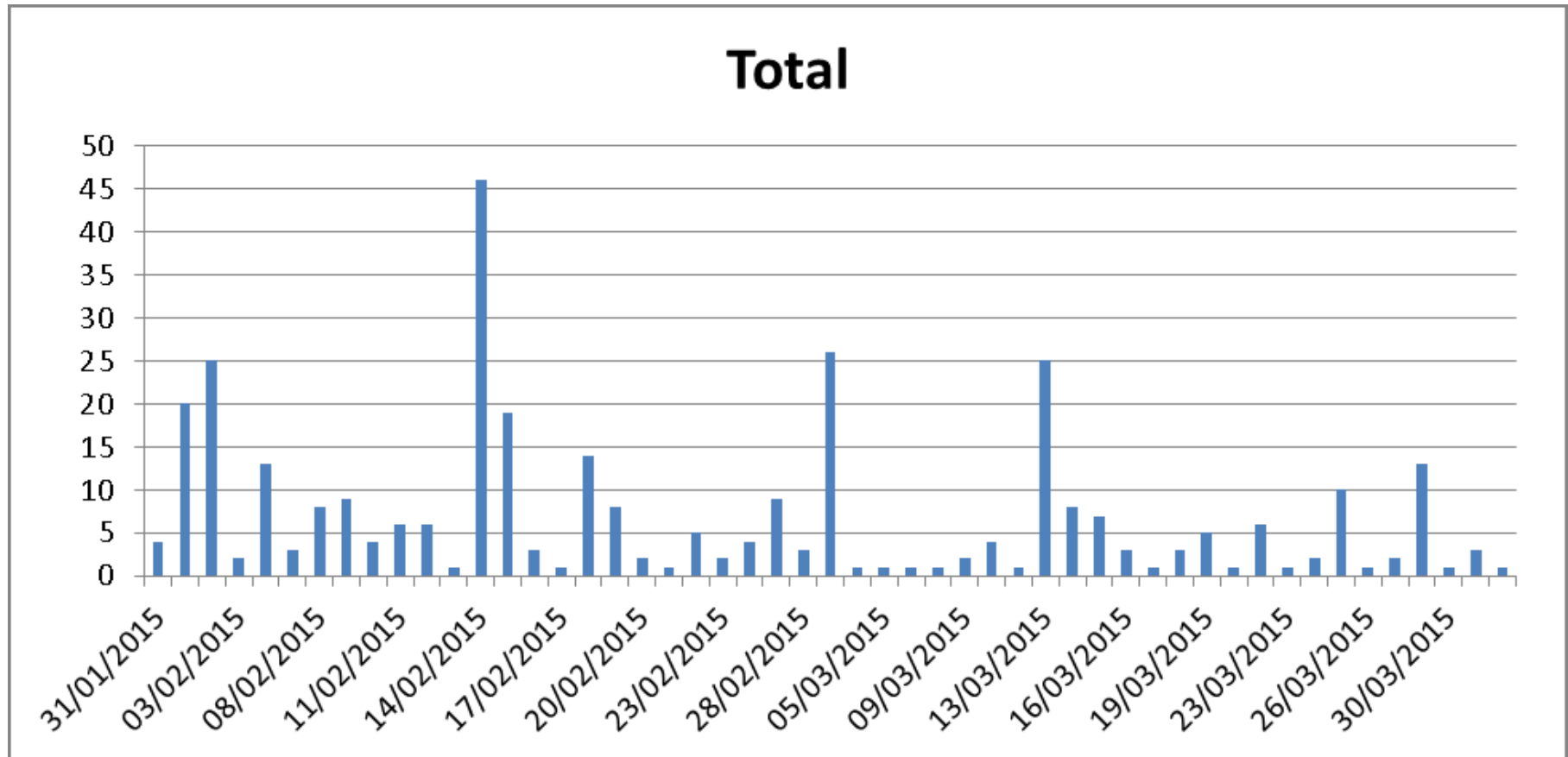
# Success for travellers..

Port	Start date of use of feedback forms	Date of last feedback	Number of feedback records	Number screened over the period	% pax complete feedback forms	Average overall experience							
												NR	
						#	%	#	%	#	%	#	%
LHR	11/02/15	30/8/15	1243	6388	19%	883	71	51	4	6	0	187	15
LGW	10/01/15	12/08/15	527	937	56%	452	86	14	3	4	1	57	11
LSP	27/01/15	16/7/15	132	186	71%	120	91	2	0	0	0	0	0
BHX	27/01/15	20/7/15	35	135	26%	26	74	0	0	0	0	9	26
MAN	05/02/15	04/06/15	52	187	28%	44	85	1	3	0	0	7	13

# Cross government working



# Planning for higher risk returnees



## C.3 Monitoring of returned workers

**Figure 15: Risk category of returned workers reported to PHE Returning Worker Scheme by PHE Centre of residence as of 05/10/2015**

PHE Region Name	PHE Centre Name	Returned Workers >21 days	Returned Workers <= 21 days	Total Returned Workers*¥
London	London	1229	38	1267
Midlands and East of England	Anglia and Essex	161	14	175
	East Midlands	72	1	73
	South Midlands and Hertfordshire	99	3	102
	West Midlands	108	2	110
North of England	Cheshire and Merseyside	57	2	59
	Cumbria and Lancashire	61	1	62
	Greater Manchester	42	4	46
	North East	63	2	65
	Yorkshire and Humber	146	6	152
South of England	Avon, Gloucestershire and Wiltshire	212	5	217
	Devon, Cornwall and Somerset	126	2	128
	Kent, Surrey and Sussex	255	5	260
	Thames Valley	220	7	227
	Wessex	187	2	189
Not Known	No Geography Information Recorded	2313	22	2335
	<b>Total</b>	<b>5351</b>	<b>116</b>	<b>5467</b>

**Data Source:** HP Zone (data up to 11:12 05/10/15)

**Note:** These data only reflect staff registered with the PHE Returning Worker Scheme and therefore may not reflect all workers deployed.

\*Multiple deployments of individuals are not currently reflected within totals

¥Total includes those recorded 'lost to follow up' and those where monitoring has not been recorded

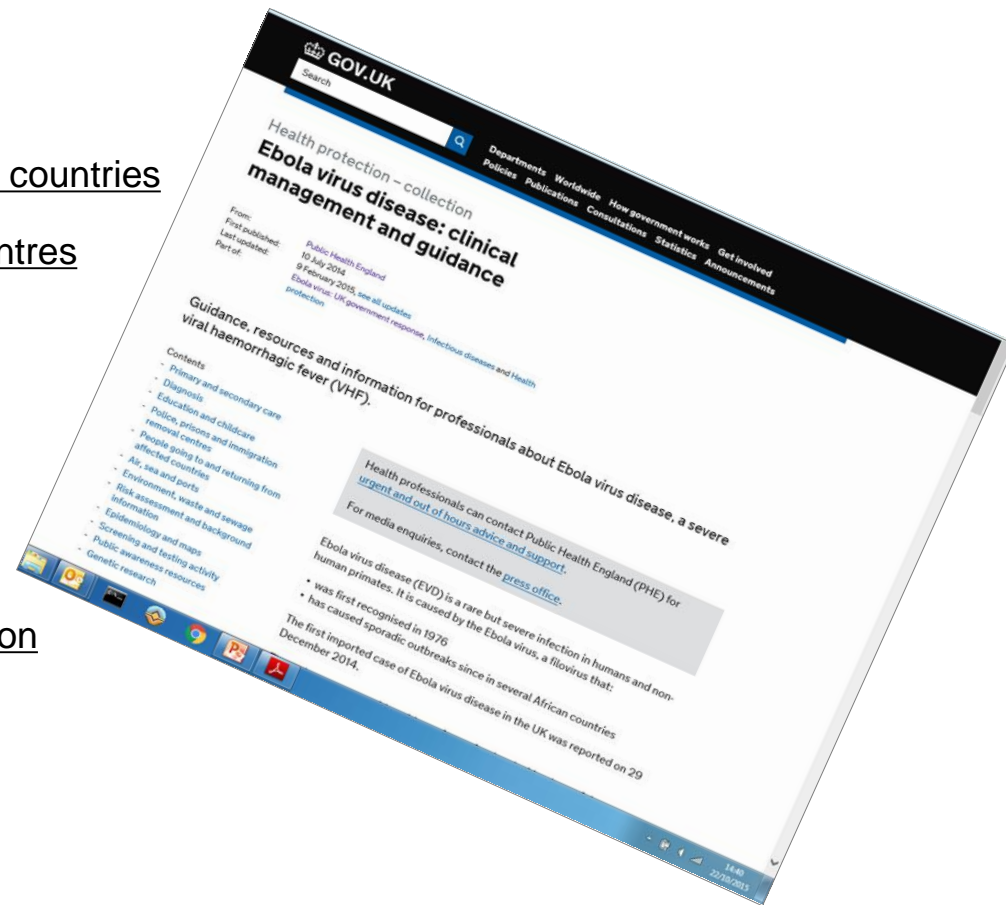


# Operational protocols

- Operational screening protocols were developed and tested with partners. These covered:
  - Cat 2 specimen transfer via courier
  - Decontamination arrangements at Airport
  - Expert advice via Imported Fever Service
  - National reporting to and within PHE
  - Ambulance transfer and passenger handling at the Airport and designated Hospital
  - Monitoring of high risk persons for 21 days
  - Airport security to identify /manage passengers

# PHE produced guidance

- Primary and secondary care
- People going to and returning from affected countries
- Police, prisons and immigration removal centres
- Diagnosis
- Education and childcare
- Air, sea and ports
- Environment, waste and sewage
- Risk assessment and background information
- Epidemiology and maps
- Screening and testing activity
- Public awareness resources
- Genetic research



# Challenges

- Project of this nature had **never been tackled before by PHE**
- Across PHE Centre **volunteers** were recruited and **trained** to carry out the screening task.
- A comprehensive national **Ebola operational plan** was drafted and continuously updated to assist screeners in all aspects of their role
- Maintaining effective two way **local/national communication** was key.
- Need to ensure effective operational **management across all ports**
- Considerable interest at the senior levels of government, required the timely and accurate passage of information. **COBR** met multiple times.
- **Media** - material was provided for public communication releases.

# Key learning points:

- Art & science of managing risk
- Language, politics & media are important
- Existing Port Health knowledge & connections
- Staff: resilience, training, dedicated resource – and learning opportunities
- Cross-government linkage
- Legislative basis defines part of what is possible
- Context varies by country, time and epidemiology
- Connections may determine effectiveness of interventions as much as science

# Key global opportunities:

- International interest in the Returning Workers Scheme
- Agreement on principles for disease characteristics
- Defining criteria for domestic action in relation to outbreak management overseas – what is business as usual?
- Highlighting the ‘Inverse Risk Law of Returning Workers’
- Screening quality and opportunities for single exit/entry standards

# The future.....

## British Ebola nurse readmitted to hospital in 'serious condition'

Pauline Cafferkey, who contracted Ebola in west Africa last year, transferred to Royal Free hospital in London with complications arising from the virus



Nurse Pauline Cafferkey gives a TV interview last month. Photograph: Ken M

Nurse Pauline Cafferkey is in a serious condition after being readmitted to Royal Free hospital in London with complications arising from the virus

## Ebola nurse Pauline Cafferkey returns to Glasgow

Royal Free hospital says Cafferkey has made full recovery and is no longer infectious



Pauline Cafferkey (right), with Breda Athan (left), senior matron, and Dr Michael Jacobs (centre), at the Royal Free hospital in London. Photograph: Royal Free hospital/Press Association

Pauline Cafferkey, the nurse treated in London for life-threatening complications months after she was apparently cured of Ebola, has been released from isolation and has returned to hospital in Glasgow.

This article is available to subscribers.

Sign in now if you're a subscriber.

Free Preview

PRINT | E-MAIL | DOWNLOAD CITATION | PERMISSIONS

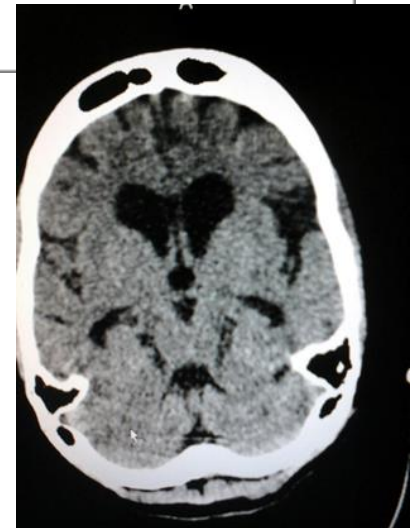
ORIGINAL ARTICLE

A Correction Has Been Published

## Persistence of Ebola Virus in Ocular Fluid during Convalescence

Jay B. Varkey, M.D., Jessica G. Shantha, M.D., Ian Crozier, M.D., Colleen S. Kraft, M.D., G. Marshall Lyon, M.D., Aneesh K. Mehta, M.D., Gokul Kumar, M.D., Justine R. Smith, M.B., B.S., Ph.D., Markus H. Kalnula, Ph.D., Shannon Whitmer, Ph.D., Ute Stroher, Ph.D., Timothy M. Uyeki, M.D., M.P.H., M.P.P., Bruce S. Ribner, M.D., M.P.H., and Steven Yeh, M.D.

N Engl J Med 2015; 372:2423-2427 | June 18, 2015 | DOI: 10.1056/NEJMoa1500306





Thank you

[Jenny.Harries@phe.gov.uk](mailto:Jenny.Harries@phe.gov.uk)

Special Acknowledgment:

Dr Bharat Sibal