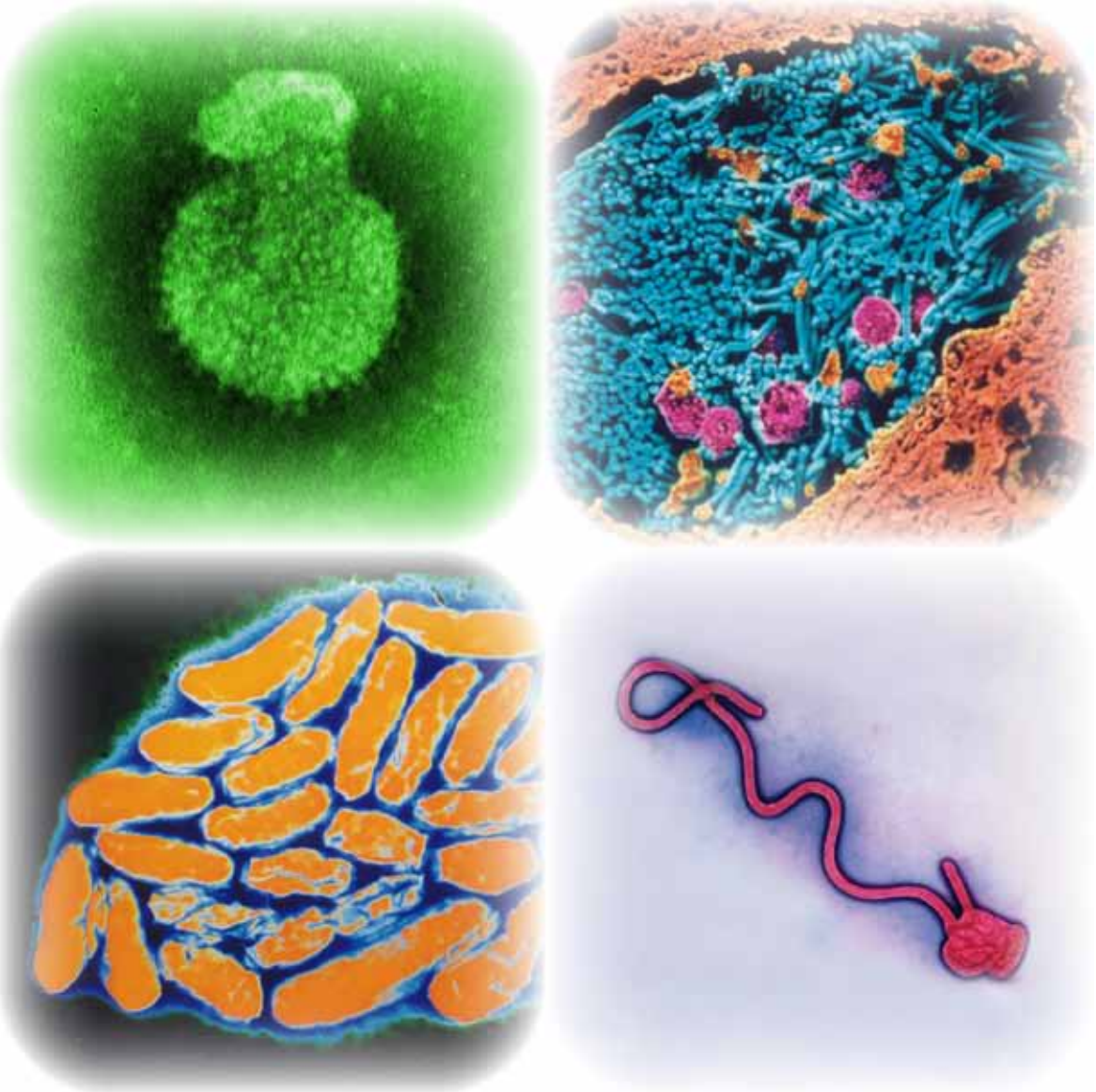
Health Protection Agency

Special Pathogens Reference Unit
Centre for Emergency Preparedness and Response

Specimen Referral Guidelines
and Service Information Pack
Version 3 (December 2009)



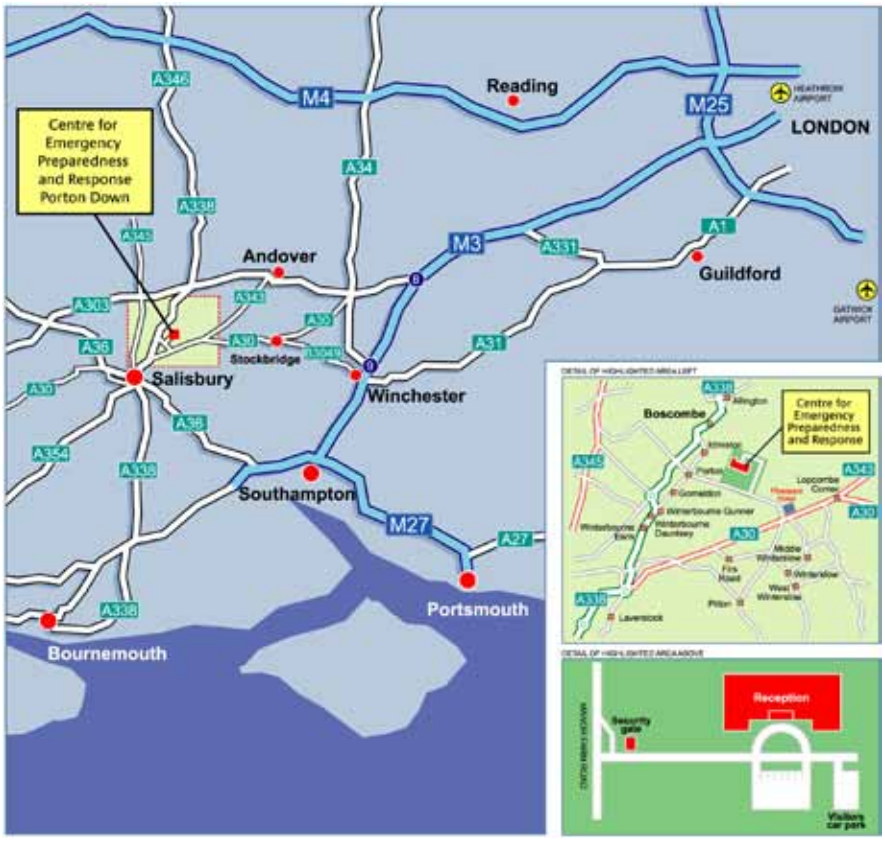
CPA
Accredited Medical Laboratory
Reference No: 1612

BSI REGISTERED FIRM
Certificate No. FS 33819

INTRODUCTION

The Special Pathogens Reference Unit (SPRU) at Health Protection Agency (HPA) Centre for Emergency Preparedness and Response (CEPR), provides diagnostic services for pathogenic Arboviruses, Haemorrhagic Fever viruses, Rickettsiae and a number of Hazard Group 3 bacterial pathogens. Specialist expertise and advice is provided to the HPA, The National Health Service, commercial medical, veterinary and environmental services throughout the UK, Europe and elsewhere in the world. It forms part of the network of reference laboratories operated by the HPA. Clinical interpretation and diagnostic advice is provided by Dr Tim Brooks, Dr Gail Thomson and Dr Sudhanva.

Address:	**Special Pathogens Reference Unit** **Health Protection Agency** **Centre for Emergency Preparedness and Response** **Salisbury** **Wiltshire** **SP4 OJG**	
Hays DX	**DX 6930402 Salisbury92/SP**	
Telephone:	**Direct:**	**+44 (0)1980 612591**
Reception:		**+44 (0)1980 612100**
Fax:	**Direct:**	**+44 (0)1980 612695**
E-mail:	**special.pathogens@hpa.org.uk**	
Web:	**http://www.hpa.org.uk/cepr/specialpathogens**	



Front cover: illustrations clockwise from top left: Lassa virus, Anthrax in Lung, Ebola virus, 'Q' Fever.

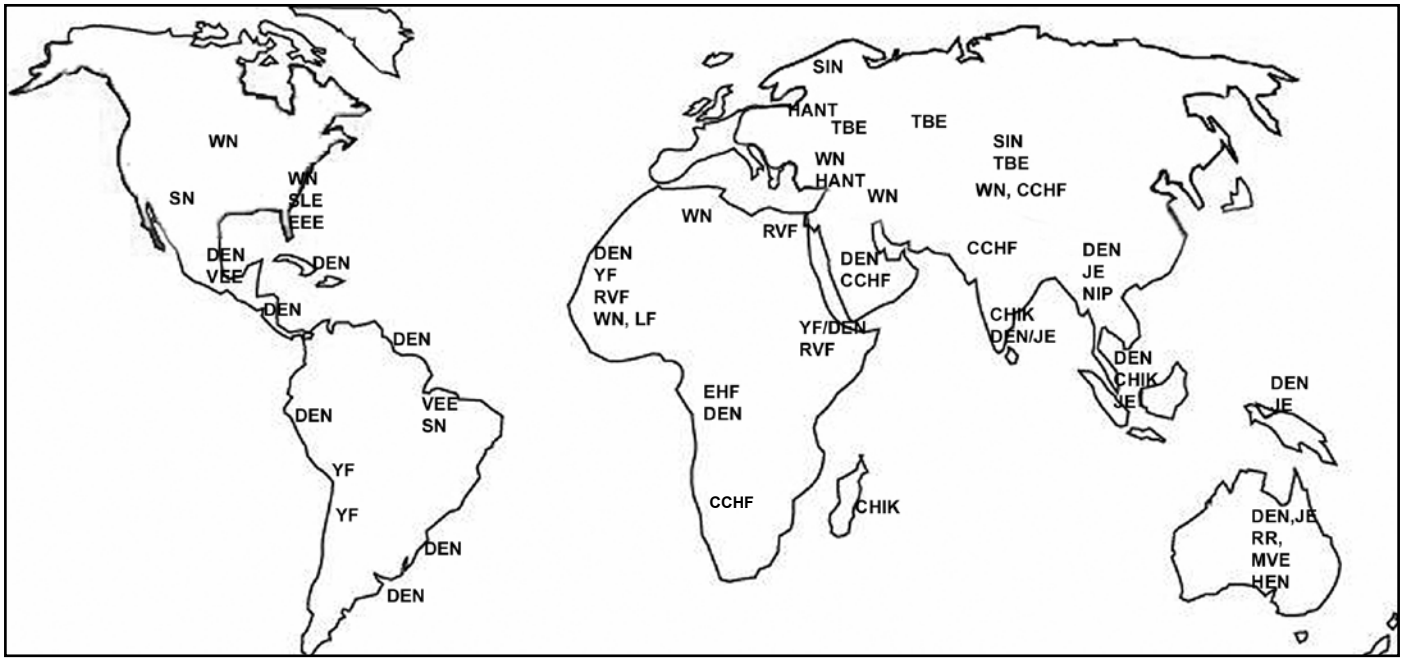
SERVICES AVAILABLE

Arboviruses and rickettsiae are causes of febrile illness in travellers returning to the United Kingdom from many areas. Less frequently illness caused by viral haemorrhagic fevers may have to be considered. Although not common, Q fever, anthrax and plague derived from within the UK or abroad may also be considered as part of the differential diagnosis.

When asking for a test, consider the geographical location that the patient has returned from, and the timing of their visit. The table of incubation periods may help clarify whether a particular disease could be involved.

Common conditions such as malaria must not be forgotten and should be screened for, alongside more exotic diseases, as prompt treatment may be life saving.

INFECTIONS OF CONCERN - POTENTIAL RISK AREAS



CHIK	-	Chikungunya	SLE	-	St. Louis Encephalitis
CCHF	-	Crimean Congo Haemorrhagic Fever	SIN	-	Sindbis
DEN	-	Dengue	SN	-	Sin Nombre
EHF	-	Ebola haemorrhagic fever	TBE	-	Tick-Borne Encephalitis
JE	-	Japanese Encephalitis	VEE	-	Venezuelan Equine Encephalitis
LF	-	Lassa fever	WN	-	West Nile
MVE	-	Murray Valley Encephalitis	YF	-	Yellow fever
RVF	-	Rift Valley Fever	NIP	-	Nipah
RR	-	Ross River	HEN	-	Hendra

TYPICAL INCUBATION PERIODS

SHORT <10 DAYS	MEDIUM 10-21 DAYS	LONG >21 DAYS
Arboviruses	Malaria	Viral hepatitis
Enteric bacteria	Typhoid fever	Malaria
Haemorrhagic fevers	Scrub Typhus	Tuberculosis
Typhus & Spotted fever	Brucellosis	HIV
Plague	Leptospirosis	Filariasis

SERVICES AVAILABLE

The laboratory undertakes tests for the clinically important infections listed below:

ARBOVIRUSES

FLAVIVIRUS:	Yellow fever, Dengue serotypes 1, 2, 3, 4, Japanese encephalitis, St. Louis encephalitis, Murray Valley encephalitis, West Nile, Tick-borne Encephalitis complex
ALPHAVIRUS:	Chikungunya, Ross River, Sindbis, Western, Eastern & Venezuelan equine encephalitis
PHLEBOVIRUS:	Rift Valley fever, Sandfly fever group

HAEMORRHAGIC FEVER VIRUSES (HF)

(Refer to ACDP Guidelines 'Management and Control of Viral Haemorrhagic Fever Patients')

FILOVIRUS:	Marburg, Ebola strains
NAIROVIRUS:	Crimean-Congo HF
ARENAVIRUS:	Lassa fever virus strains, *Argentinian HF (Junin virus), *Bolivian HF (Machupo), *Venezuelan HF (Guanarito), *Brazilian HF (Sabia)

Note : The following viruses also have the potential to cause haemorrhagic symptoms:
Hantaviruses , Chikungunya , Dengue, Yellow fever

OTHER VIRAL AGENTS

ORTHOPOXVIRUS:	Differential Molecular Characterisation of Poxviruses
HANTAVIRUS:	Hantaan, Seoul, Dobrava, Puumala, Sin Nombre groups
HENIPAVIRUS:	Hendra virus, Nipah virus

OTHER HAZARD GROUP 3 PATHOGENS

RICKETTSIA:	Typhus Group, Spotted Fever Group
'Q' FEVER:	*Coxiella burnetii* (phase I and II)
ANTHRAX:	*Bacillus anthracis*
TULARAEMIA:	*Francisella tularensis*

Investigations for a range of other emerging / re-emerging bacterial agents are available upon request. Please contact SPRU to discuss.

* By prior arrangement with Special Pathogens Reference Unit, Health Protection Agency CEPR.

HOW TO OBTAIN SERVICES

INFORMATION REQUIRED

(SPRU request forms MUST be used. These can be found on the special pathogens home page located at: http://www.hpa.org.uk/cepr/specialpathogens)

Requests submitted must include the following details:

- patient name
- D.O.B. / age
- patient identification number (e.g. NHS and/or hospital number)
- tests required
- main clinical features (inc. haematology and biochemistry profiles)
- date of onset
- date of specimen collection
- travel history (previous 21 days)
- vaccination history (e.g. Yellow Fever, Japanese encephalitis, Tick-borne encephalitis, Rift Valley Fever or Anthrax)

Note: Information on antibiotic treatment should accompany requests for rickettsial and bacterial studies.

SPECIMENS REQUIRED FOR SPECIFIC INVESTIGATIONS

AGENT	SEROLOGY	EM	ISOLATION	PCR
Arbovirus	Serum	N/A	Serum	Serum, CSF Blood (EDTA)
Haemorrhagic fever virus***	Clotted blood (serum separation tube)		Serum Urine Throat swab Blood (EDTA) Post-mortem tissue	Serum Blood (EDTA) Urine Post-mortem tissue
Poxvirus**	N/A	Vesicle fluid, vesicle crusts	N/A	Vesicle fluid, vesicle crusts
Hantavirus	Serum	N/A	*	*
Henipavirus	*	*	*	*
Rickettsiae	Serum	N/A	N/A	N/A (Developmental)
Coxiella burnetii	Serum	N/A	*Tissue e.g. Heart valve	Blood (EDTA), Heart valve
Bacillus anthracis	Serum	N/A	Lesion fluid (cutaneous Anthrax) Post-mortem blood or tissue (e.g. lymph node, spleen)	Culture, eschar biopsy, lesion washings
Francisella tularensis	Serum	N/A	Tissue biopsy, wound swab, culture	Tissue biopsy, wound swab, culture

* By prior arrangement with Special Pathogens Reference Unit, Health Protection Agency CEPR.

** Refer to DH Interim Guidelines for Smallpox Response and Management in the Post–Eradication era and contact Special Pathogens Reference Unit, Health Protection Agency CEPR.

*** By prior arrangement with Infectious Diseases Consultant and Special Pathogens Reference Unit, Health Protection Agency CEPR in accordance with the ACDP guidelines “Management and Control of Viral Haemorrhagic Fever Patients”

WHAT SPECIMENS TO SEND

SAMPLING

Serum (serology):	Sample (minimum 500µl volume) required for full screening service.
Body fluids / tissue for isolation/PCR:	Acute samples should be sent as soon as possible after collection
Vesicle fluids:	For Poxvirus investigations contact laboratory for advice.

PACKAGING OF SAMPLES

Please send specimens in accordance with current Department of Health guidance on transport of infectious substances - Best Practice Guidance for Microbiology Laboratories - and with reference to WHO/CDS/EPR/2007.2

For those wishing to use the Hays DX system our identification number is DX 6930402 Salisbury 92/SP.

Notes relating to the transport of moderate and high risk specimens are outlined in the 'Management and Control of Viral Haemorrhagic fever' guidance notes issued by the Advisory Committee on Dangerous Pathogens (HMSO)

LABORATORY OPENING HOURS

NORMAL WORKING HOURS:	08.35 – 17.05 Monday - Friday
OUT OF HOURS - ON CALL:	Contact HPA CEPR Reception 01980 612100 24 Hours – 7 Days a week.

EMERGENCY REQUESTS

For samples requiring urgent attention:
Normal hours, please telephone HPA CEPR reception 01980 612100 and ask for the Special Pathogens Reference Unit.
Out of normal working hours, telephone as above and ask for the Special Pathogens on-call personnel.

LABORATORY INVESTIGATION TIMES

AGENT	TEST	TIME (from receipt in Laboratory)*
Arbovirus	Serology Isolation PCR	48 - 96 hrs. 2 - 21 days 24 - 48 hrs.
Haemorrhagic fever***	Serology Isolation PCR	6 - 12 hrs. 3 - 7 days 6 - 12 hrs.
Poxvirus****	EM PCR	6 - 12 hrs. 6 - 12 hrs.
Hantavirus	Serology Isolation** PCR	48 - 96 hrs. 2 - 21 days 24 - 48 hrs.
Henipavirus**	Isolation PCR	2 - 7 Days 6 - 12 hrs.
Rickettsiae	Serology	48 – 96 hrs.
Coxiella burnetii	Serology Isolation PCR**	48 – 96 hrs. 3 - 6 weeks
Bacillus anthracis	Serology Isolation PCR	48 - 96 hrs. 2 - 4 days 8 - 12 hrs.
Francisella tularensis	Serology Isolation PCR	48 - 96 hrs. 3 - 10 days 24 - 48 hrs.

* Depending upon the provision of relevant clinical details including onset of infection, travel history, time of receipt and number of investigations requested.

** By prior arrangement with Special Pathogens Reference Unit, Health Protection Agency CEPR.

*** By prior arrangement with Infectious Diseases Consultant and Special Pathogens Reference Unit, Health Protection Agency CEPR in accordance with the ACDP guidelines “Management and Control of Viral Haemorrhagic Fever Patients”.

**** By prior arrangement with Infectious Diseases Consultant and Special Pathogens Reference Unit, Health Protection Agency CEPR with referral to DH Guidelines for smallpox response and management in the post-eradication era (smallpox plan) 2003.

The above timings reflect the laboratory processing of samples and indicate when results may be available. Final written reports are issued when all laboratory tests requested have been completed, typically 2 - 6 days post receipt of sample.

Please note: The Unit retains diagnostic samples in storage for a maximum of 3 years. Additional investigations may be requested within this period.

For further information please contact Special Pathogens Reference Unit using the details inside the front cover.