NATIONAL EXPERT PANEL ON NEW AND EMERGING INFECTIONS

2008 Annual Report

Contents

Introduction

Background and role of NEPNEI

Re	port period	
Me	eetings held	
Сс	de of Practice	
NE	EPNEI membership in 2008	
Su	mmary list of letters written by the Chair	
114		7
	prizon scanning for emerging infections	1
	man Animal Infections and Risk Surveillance (HAIRS)	
	d roles and responsibilities of NEPNEI	
ΠÆ	AIRS topics brought to the attention of the Panel	
То	pics considered by NEPNEI in 2008	9
	ew items of business	
•	Anthrax	
•	Hepatitis B and C viral resistance	
•	Highly Pathogenic Avian Influenza (HPAI) H7N7	
•	International Health Regulations	
•	Measles	
•	New human viruses and the UK's ability to detect them	
•	Novel pathogenic Old World arenavirus outbreak South Africa	
•	Scientific Advisory Committee on the Safety of Blood, Tissues and	
	Organs	
•	UK High containment level research facilities	
•	UK-wide remit of NEPNEI	
Re	eviewed or updated items	11
•	Atypical scrapie	
•	Department of Health Research Strategy	
•	Extended Spectrum Beta Lactamases (ESBL)-producing <i>Escherichia</i>	

4

coli

- Extensively drug-resistant (XDR) and Multi-drug resistant (MDR) tuberculosis
- Meticillin resistant Staphylococcus aureus (MRSA) in animals
- Pandemic influenza
- West Nile Virus

Annexes 14

Annex A: Membership lists

Annex B: Register of members' interests

Annex C: Agendas for meetings

Annex D: Index of abbreviations

Introduction

An emerging infection is either a newly recognised, clinically distinct infectious disease or a known disease whose reported incidence within the past two decades is increasing in a given place or among a specific population.

Background and role of NEPNEI

The National Expert Panel on New and Emerging Infections (NEPNEI) was established in 2003, to provide independent expert advice to the England Chief Medical Officer (CMO) on the public health risk from new and emerging infections. The Panel assesses risks based upon scientific evidence and best available clinical and epidemiological expertise. The Panel seeks wider input from experts in their field to augment its own expertise as appropriate. The secretariat is provided by the Health Protection Agency (HPA) on behalf of the Department of Health.

The terms of reference of the Panel are to identify key areas for action and to advise on priorities by:

- Identifying emerging and potential infectious threats to public health both nationally and internationally;
- Placing emerging infections in the wider clinical and public health contexts;
- Advising on prevention and control measures;
- Prioritising areas for surveillance and for information needs;
- Advising on research, including technological development needs.

UK-wide remit of NEPNEI

The Chief Medical Officer of each Devolved Administration (DA) has confirmed their wish to be informed of the Panel's discussions and conclusions and the DAs send observers to NEPNEI meetings.

Report period

This report covers the period of January 1 to December 31 2008.

The Chair would very much like to thank all members of the Panel for their time, hard work and commitment over the last year.

Meetings held

Meetings of NEPNEI were held on the following dates:

Tenth meeting - 5 June 2008

Eleventh meeting - 27 November 2008

The agendas for these meetings can be found in Annex C, and the minutes on the NEPNEI website (web address below).

Code of Practice

The activities of the Panel are governed by a Code of Practice in line with Government policy on standards of public life. The Code sets out the roles and responsibilities of Members, the Chair and the secretariat, and covers terms of appointment, declarations of interests, the conduct of business and the seven principles of public life. The Code of Practice is published on the NEPNEI website.

NEPNEI Membership

NEPNEI membership comprises:

- Serving Chairs of the following expert Advisory Committees with an interest in infectious diseases:
 - Scientific Advisory Committee on Genetic Modification (contained use) (SACGM)
 - Advisory Committee on Antimicrobial Resistance and Healthcare
 Associated Infections (ARHAI)
 - Expert Advisory Group on Aids (EAGA)
 - Advisory Committee on Dangerous Pathogens (ACDP)
 - Joint Committee on Vaccination and Immunisation (JCVI)
 - Spongiform Encephalopathy Advisory Committee (SEAC)

- •Advisory Committee on the Microbiological Safety of Food (ACMSF)
- Advisory Group on Hepatitis (AGH)
- Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO)
- •□ Individual members with specialist expertise in science or medicine; and
- A lay member

A full membership list for 2008 can be found in Annex A. The register of members' interests is in Annex B.

Further information about the Panel, including minutes of meetings and past Annual Reports, can be found on the NEPNEI website.

NEPNEI website address:

http://www.dh.gov.uk/ab/NEPNEI/index.htm

Horizon Scanning for emerging infections

The scientific secretariat at the HPA undertakes horizon scanning activities to detect infections that may pose a significant public health threat to the UK population. A variety of information sources are monitored for reported events that may pose, or develop into, a public health threat to the UK population. A monthly summary of such events or incidents, both nationally and internationally, is produced for NEPNEI members.

Human Animal Infections and Risk Surveillance (HAIRS)

The HAIRS group was established in February 2004 to provide a forum in which to identify and assess infections for their potential for interspecies transfer (particularly zoonotic infections). This multi-disciplinary, multi-agency group meets monthly to undertake risk assessments on behalf of NEPNEI. It is chaired by the HPA's scientific secretariat of NEPNEI. Members are drawn from the HPA, Defra, Veterinary Laboratories Agency, Department of Health, the National Public Health Service for Wales, Food Standards Agency, Health Protection Scotland (HPS), Animal Health, the Communicable Disease Surveillance Centre Northern Ireland (CDSC NI), the Scottish Executive and the Chair of NEPNEI. The HAIRS group assesses any risk to the UK population from infectious agents identified during the horizon scanning process, based upon a previously approved and adopted risk assessment algorithm.

For the benefit of new Members of the Panel, the Chair of HAIRS gave a presentation to the Panel on the remit of the group, horizon scanning and its risk assessment processes. NEPNEI Members found the work of the group extremely valuable and agreed that the processes used for horizon scanning and risk assessment were robust. It was agreed that only those risk assessments that had been rated as higher than 'low' would be presented to NEPNEI, given that Members had approved the methodology used for risk assessment. The Chair of NEPNEI attends HAIRS and can raise any issues or concerns with Panel Members .

HAIRS topics brought to the attention of the Panel

Progressive Inflammatory Neuropathy

The Panel was informed of a recently identified neurological syndrome, Progressive Inflammatory Neuropathy (PIN) among pork processing workers in the USA. PIN is associated with the use of compressed air for the removal of porcine brain tissue. The HAIRS group had alerted relevant clinicians (through the Association of British Neurologists) and discussed the issue with the US investigators. It is understood that compressed air extraction of pig's brains does not occur in the UK and no cases of PIN had been detected in the UK. The HAIRS group proposed no further active consideration of this syndrome. Panel members noted that this syndrome raised wider issues surrounding occupational exposure to zoonotic pathogens and the capacity to conduct enhanced surveillance in groups working with animals.

Novel Brucella species in marine mammals

Brucella species have been isolated from a range of marine mammal species in the UK since they were first reported in 1994. Two new species were identified in 2008: Brucella ceti (for strains with cetaceans such as whales and dolphins as their preferred host) and Brucella pinnipedialis (for strains with pinnipeds such as seals and sea lions as their preferred host). The HAIRS group carried out a risk assessment of the zoonotic potential of these organisms in marine mammals in the UK. It was felt that the main risk would be to those working with cetaceans, particularly sick cetaceans, and that this occupational group should be alerted as to the existence of these new species. The Panel noted that it would also be useful to alert laboratories involved in the diagnosis of brucellosis, and to include information on the rapidity of the growth of these species in culture once this has been determined

Other incidents reported to the Panel for information included:

- □ Waddlia chondrophila in cattle
- Intestinal spirochaetosis in birds

Topics considered by the National Expert Panel on New and Emerging Infections in 2008

New items of business

Anthrax

The Panel was informed of a recent case of inhalation anthrax in London and its suspected link to imported animal hides used for drum making. The Health Protection Agency had coordinated a full investigation and implemented infection control measures.

Hepatitis B and C viral resistance

The Chair of the Advisory Group on Hepatitis (AGH) gave a presentation on hepatitis B and C antiviral resistance, demonstrating that drug resistant hepatitis B and C is increasing as a result of current drug monotherapy for treatment of these viruses, and concluding that combination therapies should be used from the outset. Members agreed that this change in clinical prescribing practice should be put in place quickly and recommended it be incorporated into National Institute for Clinical Excellence (NICE) guidelines forthwith. A letter was sent jointly from the Chairs of NEPNEI and AGH, expressing concern over the development of antiviral resistance in patients with chronic viral hepatitis treated with monotherapy, and recommending, from both committees, a move to combination therapy for the treatment of hepatitis B and C. NICE has acknowledged receipt of the letter and a further response is awaited.

Highly Pathogenic Avian Influenza (HPAI) H7N7

The Panel was updated on a UK outbreak of HPAI H7N7 in chickens in Oxford on June 5 2010. No human cases were detected and all those potentially exposed to the virus were traced and offered post-exposure prophylactic anti-viral medication.

Measles

A member voiced concerns about the increase in confirmed cases of measles, particularly in London, and the low uptake of the vaccine. The Panel was provided with a written update regarding measles epidemiology and the measures being taken to reduce the prevalence of this disease in the UK.

New human viruses and the UK's ability to detect them

The Panel reviewed the UK's capability to detect new pathogens which may not be picked up by standard diagnostic tests. Concern was expressed over the decreasing number of laboratories that are able to perform virus culture and electron microscopy, and the diminishing expertise and collaboration in this field. These diagnostic techniques are particularly important to detect previously unknown viruses as they are generic methods of viral detection rather than specific to a particular virus. The Chair wrote to the Chief Executive of the HPA to highlight this issue and to stress the importance of maintaining diagnostic capability for new and emerging infections.

Novel pathogenic Old World arenavirus outbreak South Africa

Representatives from the National Institute of Communicable Diseases in South Africa updated the Panel, via videolink, on recent investigations into a cluster of cases of severe illness caused by a novel pathogenic arenavirus in southern Africa. The virus appears to be very virulent, with four of the five identified cases being fatal. The known risk of endemic infection is currently restricted to Zambia. The Panel assessed the potential impact on UK public health and concluded that the present situation does not necessitate a change to current UK guidance for the diagnosis and management of viral haemorrhagic fevers. However, it was noted that this guidance requires updating to reflect developments in patient care since it was originally published.

Scientific Advisory Committee on the Safety of Blood, Tissues and Organs
The Panel was provided with an overview of the remit and work of this newly formed Committee which first met in January 2008.

UK high containment level research facilities

The Panel were provided with two reports:

- The House of Commons Innovation, Universities Science and Skills Committee's review on biosecurity and capacity in the UK's high containment laboratories, and the Government's response to that report.
- The report of the independent review of the highest level microbiological containment facilities in the UK conducted by the HPA on behalf of the Medical Research Council. The Review Panel had been chaired by the Chair of Advisory Committee on Dangerous Pathogens.

Reviewed or updated items

Atypical scrapie

The SEAC representative gave a presentation on atypical scrapie and unusual BSE cases in the UK. It was concluded that there was currently no evidence to suggest these conditions pose a significant new threat to human health requiring changes to current strategies but that there are insufficient data to conclude this definitively.

DH Research Strategy

Members received a presentation on the Department of Health's Research Strategy highlighting how new and emerging infections fit into the Department's overall research strategy. Members were reassured that research funding could be made available if an urgent and proven need were to arise for research into a new and emerging infection of UK public health concern.

Extended Spectrum Beta Lactamase (ESBL)-producing Escherichia coli

The Panel was informed that two groups have been established to deal with this issue: a joint ESBL Working Group between ARHAI and Defra's Antimicrobial Resistance Coordination (DARC) group, which will deal with food-producing animals, and a group tasked with developing guidelines for the initial management of patients and laboratory diagnosis of these organisms.

Extensively drug-resistant (XDR) and Multi-drug resistant (MDR) tuberculosis

The Panel considered the risk to the UK from XDR- and MDR-tuberculosis (TB). In addition to written submissions from a range of national and international experts on the subject, presentations were given on the global threat of MDR- and XDR-TB, the current UK situation with regards to these infections and migrant demographic factors that might influence the emergence of XDR-TB in the UK.

Expert opinion varies on the precise magnitude of the risk that MDR- and XDR-TB poses to the UK. The Panel concluded that these infections are not an immediate or significant threat to the UK, although sporadic cases can be anticipated. However, members highlighted the importance of ensuring early access to treatment for TB for all TB patients, irrespective of immigration status.

The Panel expressed concern that at present there is no overarching independent panel responsible for TB. Various advisory committees have responsibility for aspects of TB, notably ARHAI for drug resistance issues; JCVI for vaccination policy. ACDP has TB within its overall remit for dangerous pathogens including for worker protection issues. Members noted that there was therefore potential for important issues to fall between these specialist committees.

Meticillin resistant Staphylococcus aureus (MRSA) in animals

Members were informed that the Advisory Committee on Antimicrobial resistance and Healthcare Associated Infections (ARHAI) had reviewed the issue of MRSA in companion and food-producing animals and had provided a statement and guidance on the subject, available on the ARHAI website.

Pandemic influenza

The Chair updated the Panel on the recent meetings and issues covered by the Pandemic Influenza Group. There were no specific issues for the Panel.

West Nile Virus

The Panel was updated on recent human cases of West Nile Disease in Italy and Romania and in birds in Austria.

Summary list of letters written by the Chair

Diagnostics for new and emerging viruses

The Chair of the NEPNEI wrote to the Chief Executive of the HPA on 15th July 2008 expressing the Panel's view that it is imperative for the HPA to maintain robust diagnostic services in order to promptly detect new and emerging viruses.

Hepatitis B and C antiviral resistance

The Chairs of the NEPNEI and the Advisory Group on Hepatitis wrote a joint letter to NICE on 5th August 2008, recommending a move towards the use of combination therapy for hepatitis to reduce antiviral resistance in Hepatitis B and C viruses.

ANNEX A - MEMBERSHIP 2008

Chair

Professor Christopher Whitty

Advisory Committee Chairs

Professor Janet Bainbridge

Scientific Advisory Committee on Genetic Modification (contained use) (SACGM)

Professor Roger Finch

Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infections (ARHAI)

Professor Brian Gazzard

Expert Advisory Group on Aids (EAGA)

Professor George Griffin

Advisory Committee on Dangerous Pathogens (ACDP)

Professor Andrew Hall

Joint Committee on Vaccination and Immunisation (JCVI)

Professor Christopher Higgins

Spongiform Encephalopathy Advisory Committee (SEAC)

Professor Sarah O'Brien

Advisory Committee on the Microbiological Safety of Food (ACMSF)

Professor Howard Thomas

Advisory Group on Hepatitis (AGH)

Mr John Forsythe

Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO)

Expert members and lay person

Professor Joe Brownlie

Vet with zoonoses expertise

Professor Christopher Butler

General practitioner

Professor Jon Friedland

Infectious disease physician

Professor Angela McLean

Infectious disease modeller

Professor Stephen Palmer

HPA-nominated expert in the field of zoonoses and emerging hazards

Dr Cathy Roth

Coordinator, Emerging and Dangerous Pathogens, World Health Organization

Dr John Watson

Public health physician

Mrs Catherine Beman

Lay person

ANNEX B: REGISTER OF MEMBERS' INTERESTS

Professor Janet Bainbridge

Declarations of interest as of 1 July 2007 (unless stated)

Senior Vice-President Government and Europe, Centre for Process Innovation

reisonai int	CI C.	ວເວ.										
Consultancie	s F	ee-paid	work	(Shareh	nareholdings Other						
								The occas stude finance	sional ent	project – no		
Non-Person	al Ir	nterests	5 :									
Fellowships		Industri	al sup	port			Ot	her				
Mrs Catherin Lay member	ne E	3eman										
Personal Int	ere	sts:										
Consultancie	s	Fee-pa	aid wo	ork		Shai	reh	olding	s C	Other		
none		none				none	9		n	one		
Non-Person	al Ir	nterests	S :									
Fellowships				Industrial support					Other			
none				none					r	none		
_												
Professor Jo Professor of Diseases, Th	Ve	eterinary	Pat							ogy & Infectious		
Personal Int	ere	sts:			_							
Consultancie	S		Fee- work	-paid K	Sha	reholo	ding	gs C	other			
Occasional of and Pfizer vaccine design	Ani	mal He	ealth	comp					/a			
Non-Person	al Ir	nterests	S :									
Fellowships	Inc	dustrial	suppo	ort						Other		
	vir An b. co	Resear rus vac nimal Va Resea rona vir nimal He	ccine accine arch as va	deve Ltd. grant accine	for devel	ent fr canin	rom e	n Nov respir	vartis atory			

Professor Christopher Butler Professor of Primary Care Medicine, Department of General Practice, Centre for Health Sciences Research, School of Medicine, Cardiff University **Personal Interests:** Consultancies | Fee-paid work Shareholdings Other Non-Personal Interests: Other Fellowships Industrial support Pfizer has given a small grant for educational purposes (£10,000) for a research project being undertaken by a PhD student who I am supervising.

Professor Roger Finch Professor of Infectious Diseases, School of Molecular Medical Sciences, University of Nottingham Personal Interests:								
Consultancies		Fee-paid work	Sharehold	lings	Other			
ABRI(Switzerla Mayne Pharm GlaxoSmithKlir ALCOS, Proly	Novartis/Cubist, ABRI(Switzerland), Mayne Pharmaceuticals, GlaxoSmithKline, ALCOS, Prolysis, Pfizer, Astellas, Wyeth Travel grants Astellas Novartis Wyeth Wyeth Hand Stellas Novartis Wyeth Wyeth							
Non-Personal Interests:								
Fellowships Industrial support Other								

-										
Professor Jonathan Friedland Professor of Infectious Diseases, Department of Infectious Diseases & Immunity, Faculty of Medicine, Imperial College										
Personal Int	ere	sts:								
Consultancie	s	Fee-paid work		Shareholdings	Other					
none		none		none	none					
Non-Person	al lı	nterests:								
Fellowships	In	dustrial support	Othe	er						
			at Infor C	D sponsored a short course nperial - "Update in Infecti Clinicians and Scientists". T vement in course design.	ous Disease					

Professor Bria Consultant Phy Stephen's Cen	ysician,		ea and W	estmir/	ste	er Healtho	care	NHS Trust, St
Personal Inter	ests:							
Consultancies	Fee-p	aid wo	rk		SI	hareholdir	ngs	Other
Non-Personal	Interes	ts:						
Fellowships			Industria	al supp	ort	i.		Other
Nil			nil					nil
			1				_	
Professor Geo Professor of In Molecular Medi	fectious cine, St	Disea				•	nent	of Cellular and
Consultancies		Eoo n	aid work		_	Sharehold	dinas	Other
SAB Health Pro	tootion				ᆉ	Silaieiloid	ungs	Olitei
Agency (member)	nection	UCB/0 (UK/B Consu	CB/CellTech K/Belgium) onsultancy Biova anada)			nil		nil
Non-Personal	Interes	ts:						*
Fellowships	Indust	rial sup	port			Other		
nil	nil					nil		
Professor And Professor of Ep			ondon Sch	ool of I	Нуς	giene and	Trop	oical Medicine
Personal Intere	ests:							
Consultancies			ee-paid vork	Sha	rer	oldings	Othe	er
Non-executive Board of Healt		ector, r	none	non	e		none	Э

Other

none

Non-Personal Interests:

Industrial support

none

Fellowships

none

Professor Christopher Higgins Vice-Chancellor, Durham University									
Personal Intere	ests:								
Consultancies	Fee-paid work	Shareholdings	Other						
	Chair – SEAC Human Genetics Commission	n/a	Employee University	-	Durham				
Non-Personal	Interests:								
Fellowships Industrial support									

Professor Angela McLean Professor of Mathematical Biology, Department of Zoology, University of Oxford								
Personal Interes	its:							
Consultancies	Fee-paid work	Shareholding	ıs	Other				
	Member, Science Advisory Council, Defra	none						
Non-Personal In	terests:							
Fellowships Industrial support Other								
none none								

Professor Sarah J O'Brien Professor of Health Sciences and Epidemiology, Division of Medicine & Neurosciences – Hope, University of Manchester								
Personal Inte	rests:							
Consultancies	Consultancies Fee-paid Shareholdings Other work							
none		none	none					
Non-Persona	l Interests	3 :						
Fellowships	Fellowships Industrial support Other							
none	none			none				

Professor Stepl	nen Palmer								
Head of Department, Department of Epidemiology, Statistics and Public									
Health, Cardiff U									
Personal Interests:									
Consultancies	Fee-paid wor	<u>rk</u>	Sharehold		Other				
none	none		Prudential						
Non-Personal Ir	nterests:								
Fellowships	Industrial su	upport		Otl	her				
Royal College of Physicians	fnone			noı	ne				
l' riyororario									
Faculty of Publi Health	С								
Professor of Med Imperial College Personal Interes									
Consultancies		Fee-paid w			holdings	Other			
Gilead Pharmace BMS – clinical chronic hepatit Advisory Group)	advice on is B (US			Found Riotec	-	f			
Non- executive Riotech Pha (Imperial Colle spinout development of virals	rmaceuticals ge biotech company):								
Non-Personal Ir	nterests:								
Fellowships	Industrial su	upport		Otl	her				
		Departmer uman Geno nd Roche							

Dr John Watson Head of Respiratory Diseases Department , Respiratory Diseases Department, Health Protection Agency Centre For Infections									
Personal Intere	ests:								
Consultancies	Fee-paid wor	k	Shareholdings	Other					
nil	nil		nil	nil					
Non-Personal	nterests:			=					
Fellowships Industrial support Other									
nil									

Professor Christopher Whitty Professor of International Health and Director of the Malaria Centre at the London School of Hygiene & Tropical Medicine								
Personal Intere	ests:							
Consultancies	Fee-paid work		Shareholdings	Other				
none	none		none	none				
Non-Personal	Interests:	_						
Fellowships		Industrial suppo	ort	Other				
none Grants for independent none research from Pfizer and GSK.								

Declaration of interest as of 21 April 2008

					i				
Mr John Forsythe Consultant Surgeon & Clinical Director, Royal Infirmary of Edinburgh (Lothian University Hospitals Division)									
Personal Int	erests:								
Consultancie	es	Fee-paid work	Shareholding	s	Other				
Non-executive Member Non-executive Member Non-executive Member Non-executive Non-execu	NHS Quality Scotland		none		none				
Non-executiv	re Board HS Blood &								
Non-Person	al Interests:								
Fellowships	Industrial รบpเ	port		Otl	ner				
none	Novartis PLC, Research car PLC, Wyeth F	grants received from A Roche PLC, Wyeth PLC ried out, partly support PLC, Astellas PLC and I as received from any pl	ed by, roche Novartis PLC.	noi	ne				

ANNEX C: AGENDAS FOR MEETINGS

Tenth Meeting

10.15am, Thursday 5th June 2008

- 1) Chairman's opening remarks
- 2) Introductions
- 3) Minutes of the 9th meeting
- 4) Matters arising and Secretariat report
- 5) DH research strategy
- 6) Members' concerns
- 7) HAIRS, zoonoses and roles and responsibilities of NEPNEI
- 8) The risk to the UK from XDR and MDR-TB
- 9) New Human Viruses and the UK's ability to detect them
- 10) AOB
- 11) Date of next meeting

Eleventh Meeting

10.15am, Thursday 27th November 2008

- 1) Chairman's opening remarks
- 2) Introduction to SaBTO and current emerging issues
- 3) Minutes of 10th meeting
- 4) Matters arising and Secretariat's report
- 5) Novel arenavirus outbreak South Africa and Zambia (including a video conference with the National Institute for Communicable Disease, South Africa)
- 6) HAIRS, zoonoses and roles and responsibilities of NEPNEI
- 7) AOB

ANNEX D: INDEX OF ABBREVIATIONS

ABN Association of British Neurologists

ACDP Advisory Committee on Dangerous Pathogens

ACMSF Advisory Committee on the Microbiological Safety of Food

AGH Advisory Group on Hepatitis

ARHAI Antimicrobial Resistance and Healthcare Associated Infections

BSE Bovine Spongiform Encephalopathy

CDSC(NI) Communicable Disease Surveillance Centre Northern Ireland

CMO Chief Medical Officer

Defra Department of Environment, Food and Rural AffairsDARC Defra Antimicrobial Resistance Co-ordination group

DH Department of Health

ESBL

EAGA Expert Advisory Group on Aids

FSA Food Standards Agency

HAIRS Human Animal Infections Risk & Surveillance

Extended spectrum B-lactamase

HIV Human Immunodeficiency Virus

HPA Health Protection AgencyHPS Health Protection Scotland

HSE Health and Safety Executive

IHR WHO International Health Regulations

JCVI Joint Committee on Vaccination and Immunisation

MDR-TB Multi-drug resistant tuberculosis

MRSA Meticillin Resistant Staphylococcus aureus

NEPNEI National Expert Panel on New and Emerging Infections

NICE National Institute for Clinical Excellence

PIN Progressive Inflammatory Neuropathy

PVL Panton-Valentine Leukocidin

SaBTO Advisory Committee on the Safety of Blood, Tissues and Organs

SACAR Specialist Advisory Committee on Antimicrobial Resistance

SACGM Scientific Advisory Committee on Genetic Modification

(contained use)

SEAC Spongiform Encephalopathy Advisory Committee

TB Tuberculosis

UK United Kingdom

USA United States of America

VLA Veterinary Laboratory Agency

WHO World Health Organization

XDR-TB Extensively Drug Resistant Tuberculosis