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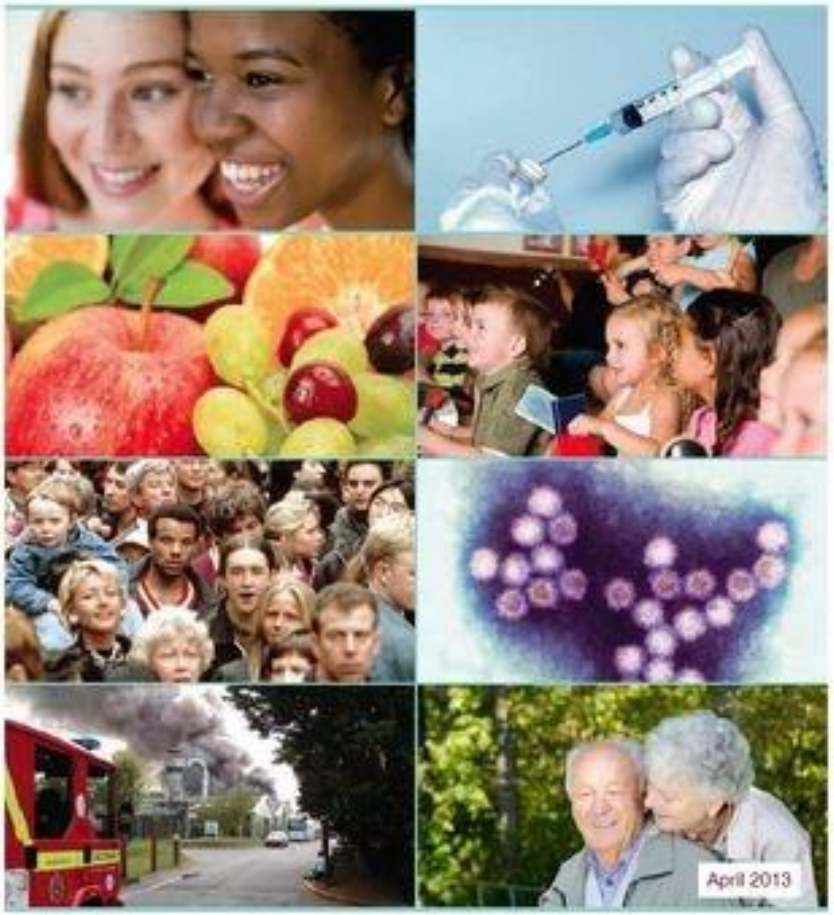
Our priorities for 2013/14



https://www.gov.uk/government/organisations/public-health-england

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Risk Based Containment

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PHE Risk Assessment Lead
Cambridge University Biological Safety Officers Symposium
20th May 2014

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Regulations and Guidance

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Regulations

1. HASAWA http://www.legislation.gov.uk/ukpga/1974/37/contents
2. Management Regulations http://www.hse.gov.uk/pubns/books/l21.htm
3. COSHH http://www.hse.gov.uk/pubns/books/l5.htm
4. GMO contained use http://www.hse.gov.uk/pubns/books/l29.htm

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Guidance

1. ACDP CL2/CL3 http://www.hse.gov.uk/pubns/books/microbio-cont.htm
2. ACDP Managing the risks http://www.hse.gov.uk/biosafety/biologagents.pdf
3. ACDP approved list http://www.hse.gov.uk/pubns/misc208.pdf
4. Blood born viruses leaflet http://www.hse.gov.uk/pubns/indg342.htm
5. HSE BBV guidance http://www.hse.gov.uk/biosafety/diseases/bbv.pdf

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Risk Assessment: determine required containment

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Principles of Prevention

Management Regulations - Reg 4 – Schedule 1

a) avoid the risk

b) evaluate risks that cannot be avoided

c) combat risks at source

d) adapt work to the individual (ie: consider ergonomic fit)

e) adapt to technical progress (eg: engineering controls)

f) use non or less dangerous alternatives

g) consider technology, work flow, environment & people

h) give collective measures priority over individual protective measures (e.g. controlling exposure to fumes through local exhaust ventilation rather than personal respirators)

i) give appropriate instructions to staff

Potential Severity of harm

1	**Insignificant**	Trivial injury or harm requiring no / minimal intervention or treatment.
2	**Minor**	Minor injury / illness requiring minor intervention or treatment with no time off work or interruption to normal work duties.
3	**Moderate**	Injury leading to lost work time (equal to or greater than 1 day), or interruption to normal work duties or occupational illness without lost work time. e.g. • First aid treatment with lost work time. • Occupational illness (e.g. occupational dermatitis) without lost work time. • Laboratory acquired infection due to HG2 pathogen.
4	**Severe**	Severe injury / illness. e.g. • Occupational illness with lost work time • Potential for long term health effects • Multiple related lost time injury / illness cases. • Fracture of any major bone • Eye injuries • Laboratory acquired infection due to HG3 pathogen.
5	**Catastrophic**	Fatality(s) or injury / illness leading to long term incapacity/disability. e.g. • Work related death • Amputation • Permanent loss of sight. • Laboratory acquired infection due to HG4 pathogen.

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4.7 Agent titre/concentration and quantity used (e.g. prevalence data determined from prior research or pathology test data)	
4.8 Consider inadvertent culture of other agents that may be present in specimen (e.g. specimen infected with other known or potentially novel pathogens) (NB - check the controls section - Deviations in Containment Required)	
4.9 Species at risk	Not considered pathogenic to h
4.10 Diseases caused/symptoms of infection	ACDP 1 Viral vaccine vectors: M (MVA) and replication-deficient Non-pathogenic. Unable to rep viral vaccine vector. Localised immunisation.
4.11 Infectious dose	ACDP 1 Viral vaccine vectors: M (MVA) and replication-deficient Non-applicable. Non-pathogenic cells.
4.12 Route(s) of transmission	ACDP 1 Viral vaccine vectors: M (MVA) and replication-deficient

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6. CONTROLS

6.1 Primary containment requirements (e.g. MSC)

ACDP containment level 3 practices, equipment and facilities, including use of MSC Class I and III as appropriate. MSC Class II may only be used with additional controls, following a suitable and sufficient risk assessment. Appropriate practices and precautions taken to minimise the production of aerosols. Centrifuge rotors or buckets with seal tight/screwcap lids.

6.2 Dedicated or additional equipment requirements

Dedicated Containment Level 3 equipment

Appendix 5 return

Communicating risk assessment findings Staff involved in a process need to know the significant findings of related risk assessments. Managers are responsible for ensuring findings are communicated. Different ways of communicating this include:

1. Use risk assessment findings to modify the operational procedure (OP); then.
   a. provide update training on the OP to staff (preferred to 1b)
   b. provide update training on the risk assessment and OP to staff.
2. Provide general awareness training on changes (eg: at formal training or team meetings).
3. Share changes through posters or documents on notice boards.
4. Consider the changes so minor that there is not a significant change to communicate.
5. Other communication approach.

Guidance:

- Communicate findings with an approach proportionate to the risk (eg: approach 1a= for higher risk activities and approach 4 for lower risk).
- Keep a record of the communication.
- Look for feedback from staff to get continuous improvement.
- Provide periodic refresher training
- Best practice is often a combination of 1+2+3

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Procedures

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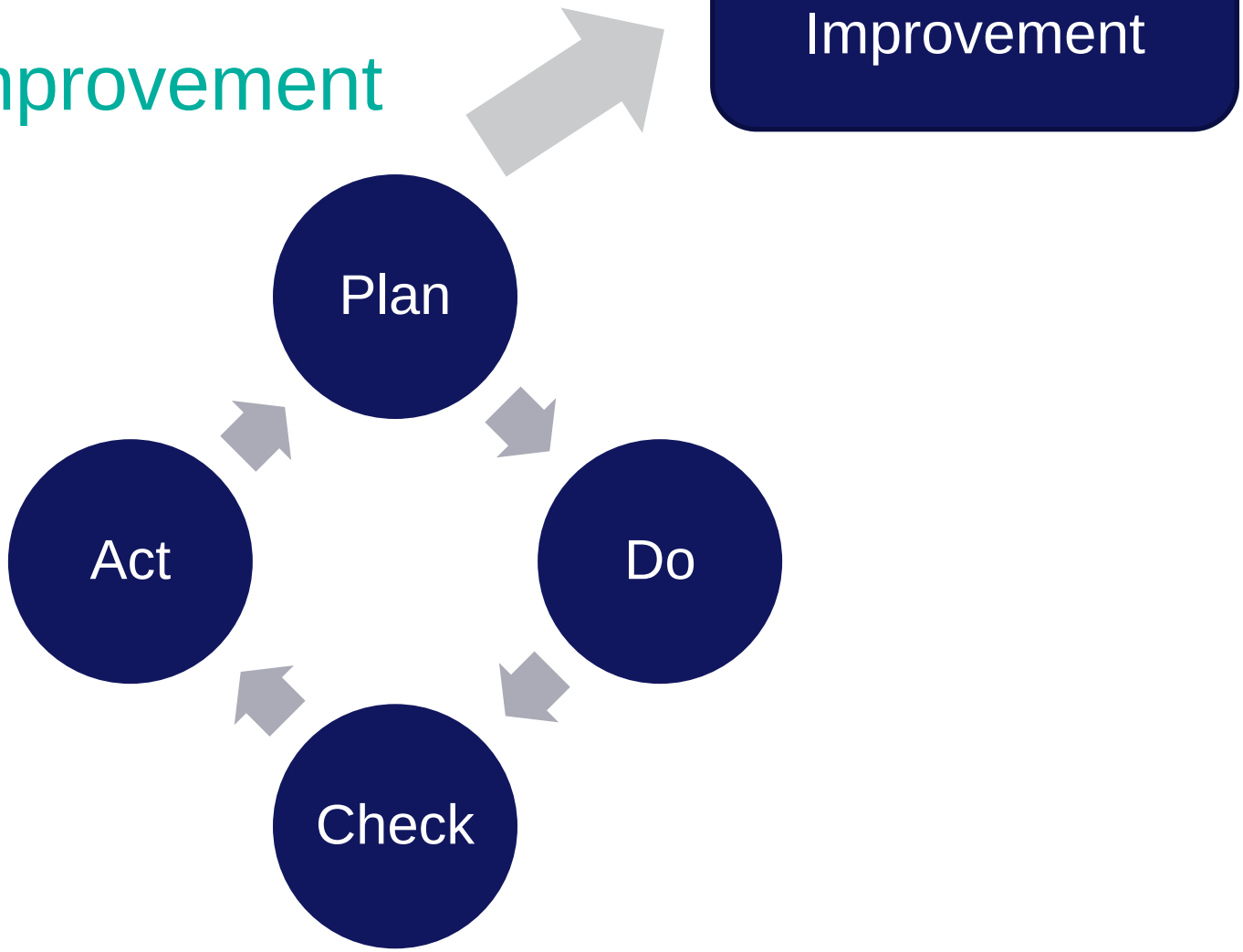
Process Improvement



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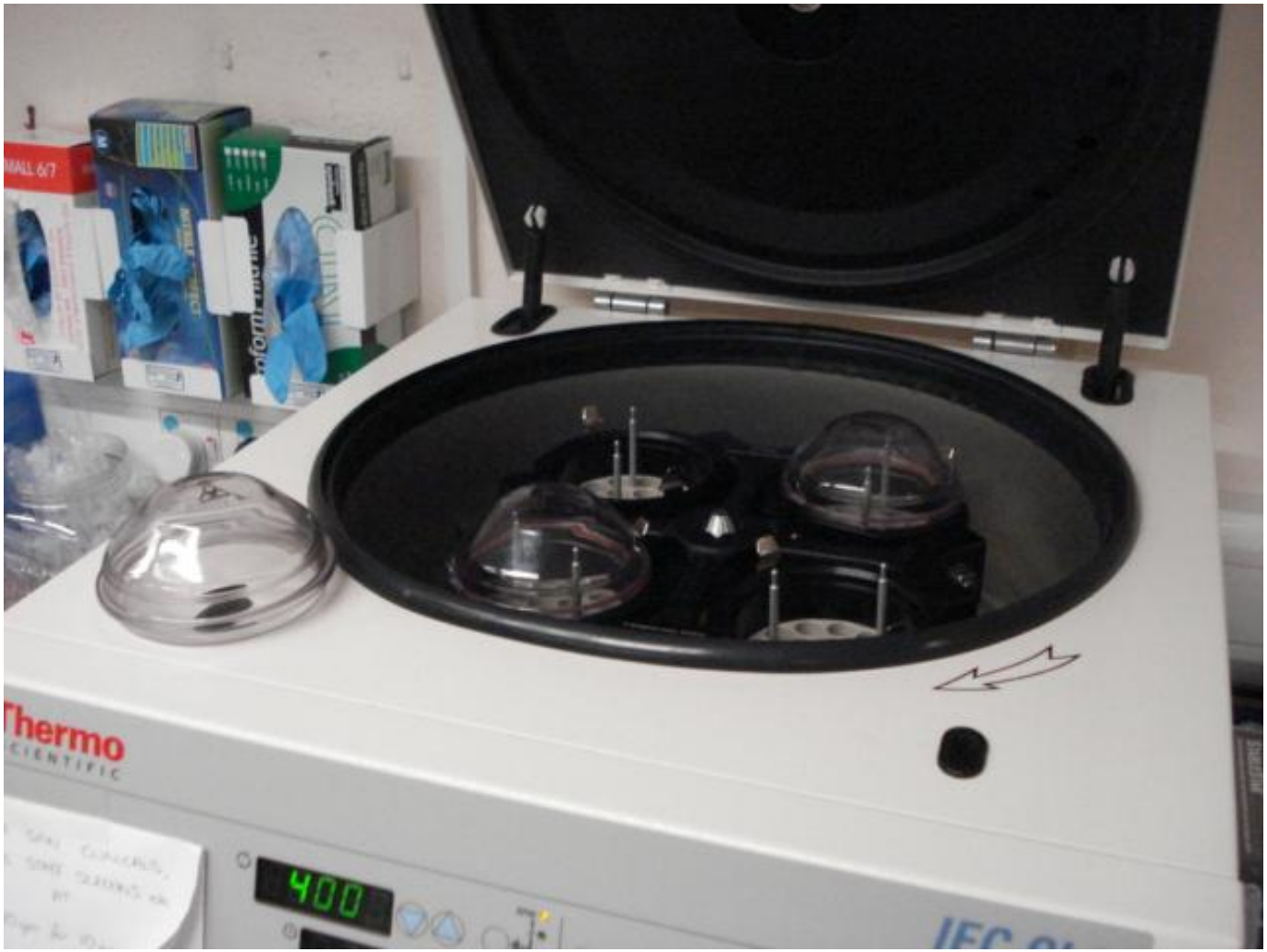

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Clinical Pathology Specimens

Food, Water and Environmental Samples

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Reception: Triage

Source of biological hazard:

- clinical pathology specimens
- food and water environmental samples

Determine risk level:

- patient specimen clinical information (eg: travel history)
  - key words to look out for
- outbreak information (current)
- knowledge and Experience
- available data and evidence base

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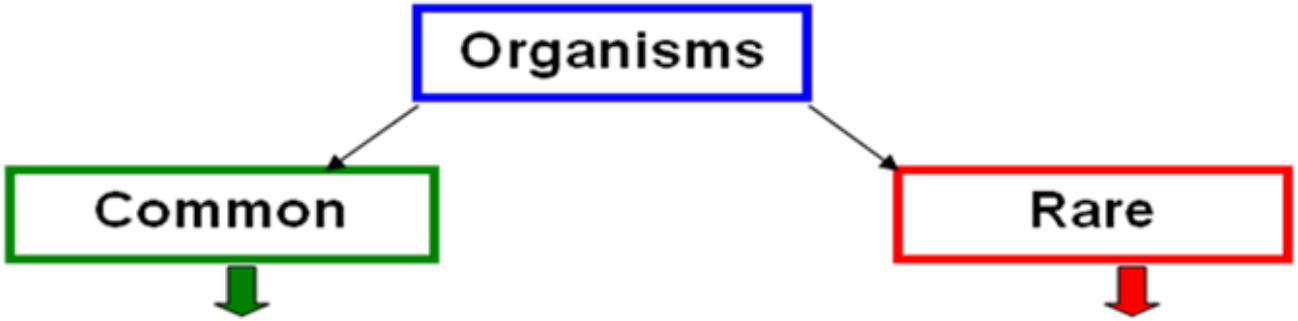
'Clinical' Alerts for Containment Level 3 Specimens



Mycobacteria tuberculosis	**Consumption** **TB** **Haematemesis** (vomiting blood) **Psoas Abscess** **Blood streaked sputum** **Night sweats**
Salmonella typhi ***S. paratyphi***	**Foreign travel** Asia, Africa, S. America **Flu like symptoms** **Enteric fever** **FUO** **Bradycardia**

Brucella	**Flu like symptoms** **Undulant fever** **Malta fever** **Mediterranean fever**
Francisella tularensis	**Return travel from USA** **Hunter / Rabbit skinner** **Swollen lymph Nodes** **PUO** **Tularaemia** **Rabbit fever** **Deer fly fever**
Burkholderia pseudomallei	**Foreign travel** South East Asia, Northern Australia **Melioidosis** **Pneumoenteritis** (inflammation

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Examination of Food, Water & Environmental samples for VTEC O157

Introduction **Assessment date** 14/02/2014 **Revision No** 2

Site MSD Specialist Microbiology Services (SMS) , H & S Generic Risk Assessments, MSD LN Generics, MSD LN Generic **Reference** RA/00197 -

Description/Operations/Activities covered by this assessment Reference

Examination of Food, Water and Environmental samples for Verocytotoxin producing Escherichia. coli serotype O157 (

Each sample that is submitted for examination is assessed to determine how likely it is that VTEC O157 will be isolated assessed as low, medium or high risk based on Guidance "Note A" below.

The sample assessment is made by a senior member of staff and can be changed under the direction of the Laboratory Head or Director. All samples submitted are assessed for potential risk based on their source and the reason for submi information will have been discussed in advance with the submitting officer to help establish aetiology. This assessme accompanied by the appropriate local Risk Assessments/ COSHH and operational procedures including RA/00146 (Wor Level 3 (CL3)).

Containment levels specified in this risk assessment are minimums. If spare CL3 capacity is available - local managem use this for work specified at CL2. All CL3 work would be at elevated CL3 methods of working ie: as per CL3 LCOP.

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Medium Risk of isolation of VTEC O157

>>>For these samples tasks 1-4 are performed at CL2 and tasks 5-10 are performed

- Samples from the same batch of food eaten by a case of food poisoning or associat

actually consumed by the case or cases.

- FW&E samples submitted as part of a survey that have not been associated with an

VTEC O157 (eg: raw meat and swabs from raw preparation area of a butchers shop, I

meats, 4 isolations from 4635 raw prep area swabs) and has historically been associa

- Sample submitted during an investigation of an outbreak of unknown aetiology whe
- Sample from a petting farm environment that has not been linked to an outbreak of

High Risk of isolation of VTEC O157

>>>For these samples task 1-2 is performed at CL2 and task 3-10 are performed at

- Samples known to be contaminated with VTEC O157. • FW&E samples submitted as

submitted is a remnant of the food eaten by the case or cases.

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Inactivate sample

Inactivation of biological material eg:

- heat block
  - (eg: heat inactivation and sonication prior to molecular testing)

- chemical
  - (eg: chaotropic buffer enabling nucleic acid extraction)

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Risk·Alert···FOR·AC

Inactivation·of·HG3·samples¶

¶

Incident·details¶

A·recent·HSE·intervention·visit·at·a·HPA·Laboratory·identified·a·potential·risk·with·an·i
HG3·samples·are·inactivated·by·heat·treating·in·a·hot·block·at·87-90ºC·for·20·minutes·
before·being·sent·for·molecular·testing.·Although·this·is·a·published·procedure,·systen
i.e.·the·heating·block·was·not·being·checked·from·time·to·time·to·ensure·that·the·corre

¶

Potential·risks·and·hazards¤

- → Potential·for·viable·material·being·sent·to·other·laboratories·¶
- → Potential·for·laboratory·acquired·infection·through·handling·of·viable·material·thoug

¶

!·Immediate·action¤

- → Review·all·local·CL3·inactivation·procedures·to·ensure·they·are·properly·validated·

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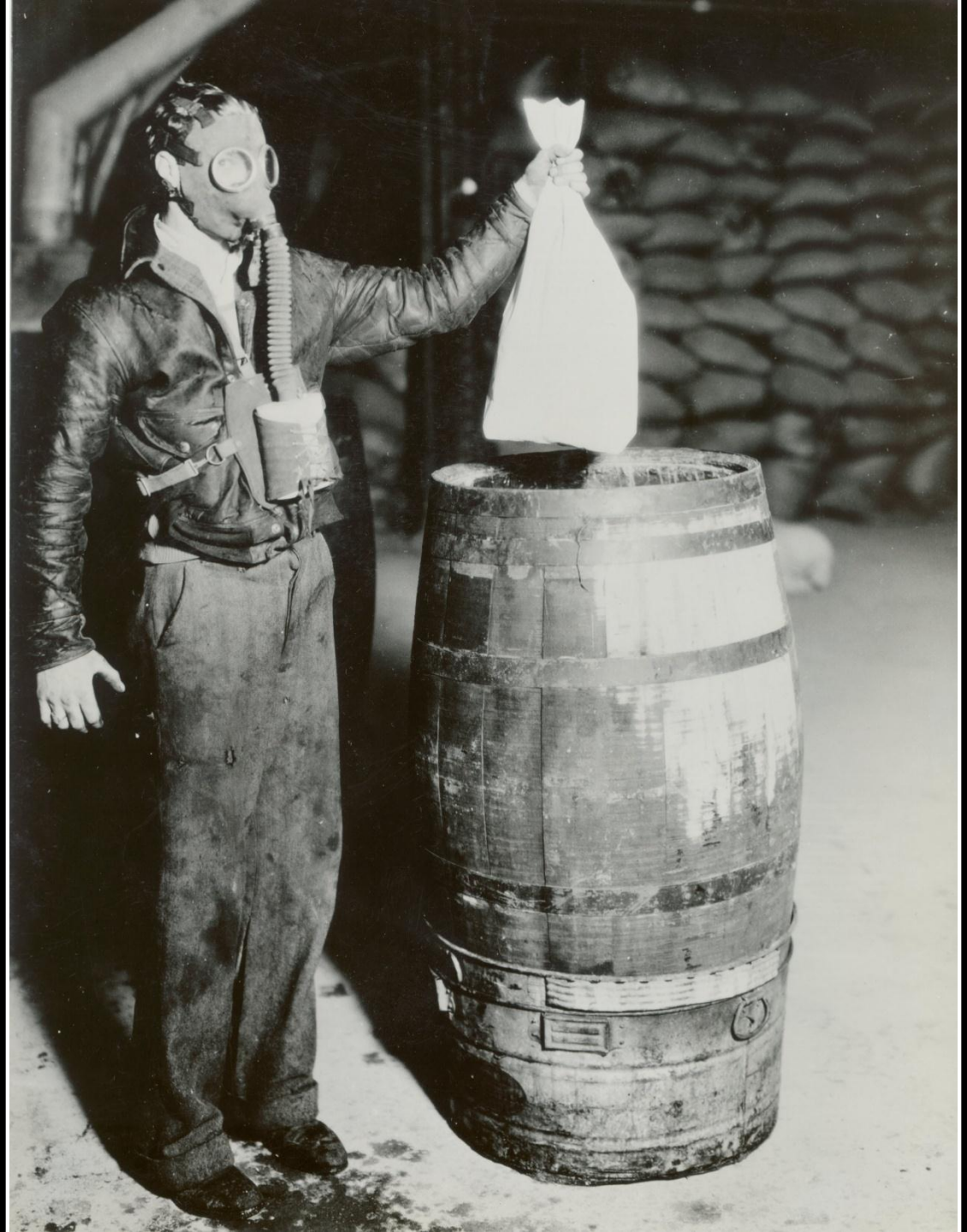
Spillage: sealable for fumigation?

- key aspect of containment level 3 and 4
- risk assess the spillage
- generate spillage procedure and train against it
- clear the room of infectious aerosol (titre, volume, air change rate)
- Fumigate (in house / contracted service)
- see “The Management, design and operation of microbiological containment laboratories appendix 3 (slide 3: bullet 1)



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Research Material

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Research material

- could include clinical specimens and food samples - likely to be a known demographic group or environmental source
- range of samples, for example: bloods, bone, faeces, urines and so on
- each sample has particular risks – consult experts on your assessments to ensure appropriate risk are considered
- determine containment approach at start of project – valid for 5 years?

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Risk level, Hazard Grp. and Cont. Level

Is anything changing?

- samples used – is risk data still valid?
- research approach – mission creep
- project review – do procedures still match the process?
- staff turnover – training needs
- staff health
- current outbreaks of emerging disease

8 April 2014 Last updated at 17:54

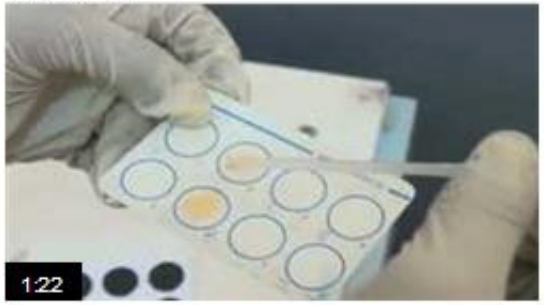
Ebola outbreak 'most challenging' as Guinea deaths pass 100

Related video / audio

WHO concern over Ebola outbreak
1 April 2014

Ebola outbreak 'unprecedented'
31 March 2014

West Africa on Ebola high alert
25 March 2014



Ebola blamed for fever outbreak
23 March 2014

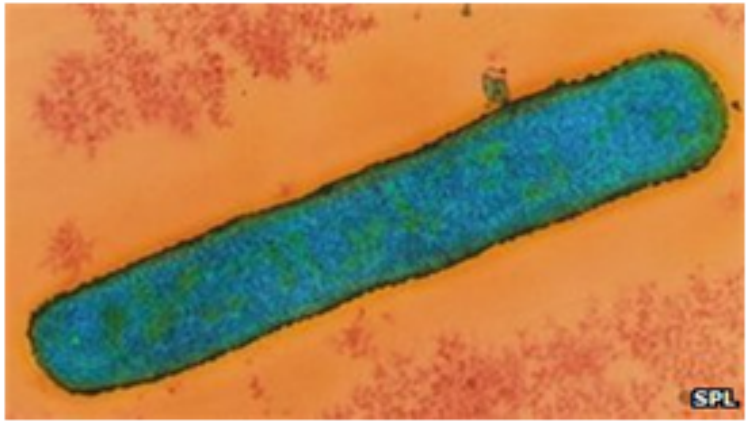
14 March 2013 Last updated at 12:18

Dead injecting drug user in Glasgow had anthrax

An injecting drug user who died in Glasgow has tested positive for anthrax, health officials have said.

NHS Greater Glasgow and Clyde (GGC) said the incident was an "isolated case" and may be down to contaminated heroin or cutting agent

Health officials and police are working to identify the source.



Anthrax cannot be passed from person to person

The worst UK outbreak of anthrax in 50 years occurred among drug users in Scotland between 2009 and 2010. There were 119 recorded cases and 14 deaths.

Related Stories

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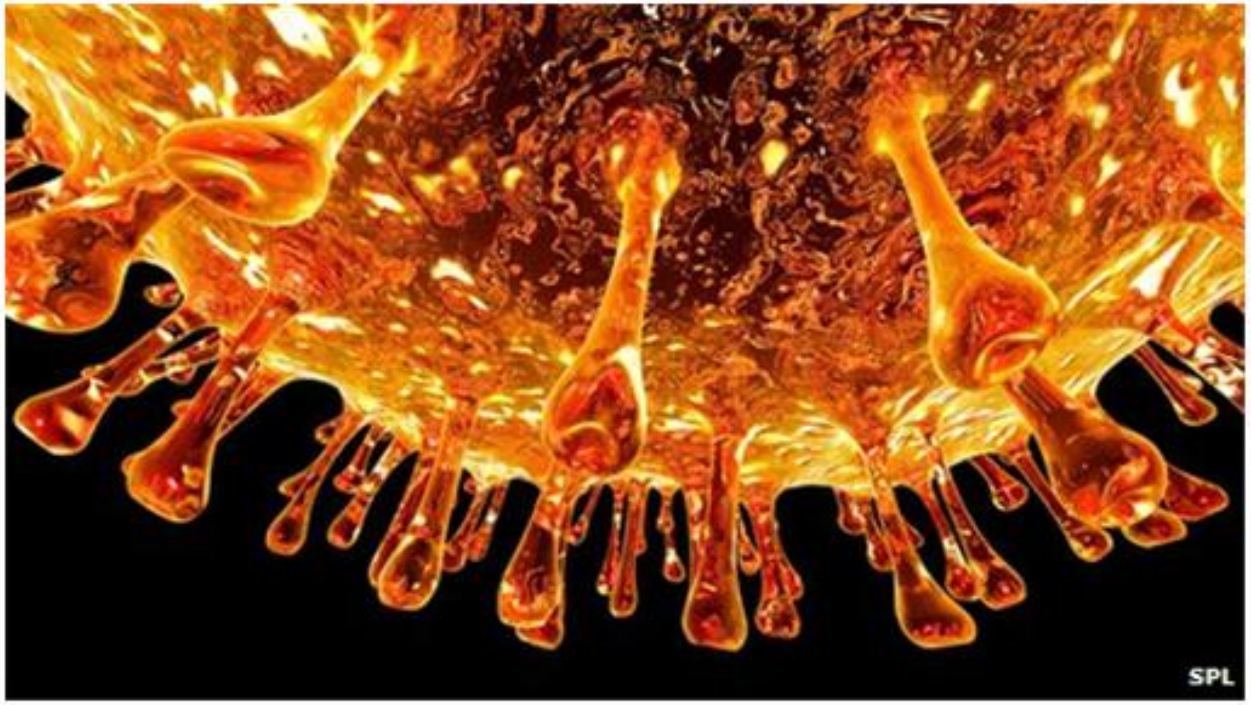
Swine flu infected 'fifth of people'

By James Gallagher
Health and Science reporter, BBC News



At least 20% of people, including half of schoolchildren, were infected with swine flu during the first year of the pandemic in 2009, according to data from 19 countries.

It is thought the virus killed 200,000 people around the world.

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CL3 Training and Competence

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https://www.gov.uk/government/publications/phe-products-and-services-overview/phe-products-and-services-overview#training-capabilities

PHE Safety and microbiology training

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Performance Criteria	Level required Awareness (A), Basic (B), Intermediate (I), Advanced (Ad), Expert (E)	Assessment State: Fully meets (FM), Mostly (MM), Par			
		Self	Date	Manager	Date
1. Follows the relevant policies, procedures (including SoP's), guidance and practices (see note 1)					
2. Reacts and responds to an emergency (fire, spillage, accident etc.) in accordance with emergency procedures					
3. Effectively communicates with co-workers and others on matters of health and safety					
4. Maintains appropriate records and documents relating to and impacting on health and safety					
5. Demonstrates dexterity and co-ordination in the use and manipulation of equipment, materials and substances					
6. Uses and wears PPE in accordance with any CoP, SOP and risk assessment control measures					
7. Reports any deviation, error, near miss or other adverse condition/situation in accordance with procedures					

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Questions?