Chapter 10 Health protection and communicable disease control – questions

Self assessment

Question 1 of 8

The term 'health protection' includes all of the following except:

- A) Infectious disease
- B) Hazards due to chemical and radiological release
- C) The management of ambulance services
- D) Workplace smoking bans
- E) Threats from terrorism

Question 2 of 8

In the UK, which of the following diseases have been on the increase over the last decade?

- A) HIV
- B) Chlamydia
- C) Syphilis
- D) Gonorrhoea
- E) All of the above

Question 3 of 8

Which of the following statements about the global epidemiology of infectious diseases is incorrect?

A) 51% of the years of life lost globally are due to communicable diseases

B) In some regions the burden of disease from infections is four times that for non-infectious causes

C) Infectious diseases are more common in low income countries compared to high income countries

D) Low-cost therapeutic interventions are constantly produced and are available

E) Some infectious disease once thought to be under control are re-emerging as major public health issues

Question 4 of 8

Drug resistance is a major issue in which of the following infectious diseases?

- A) Malaria
- B) Tuberculosis
- C) Salmonella typhi
- D) MRSA
- E) All of the above

Question 5 of 8

Possible control measures for blood-borne infections include all of the following except:

- A) Needle exchange programmes
- B) Isolation of cases
- C) Screening blood products
- D) Sterilisation of products/instruments
- E) Safe operating practices

Question 6 of 8

For which of the following diseases does a reservoir not exist outside the human host?

- A) Rabies
- B) Salmonella
- C) Cryptosporidium
- D) Smallpox
- E) Legionella

Question 7 of 8

Which of the following has a live vaccine?

- A) Cholera
- B) Whooping cough
- C) Tetanus
- D) Oral polio
- E) None of the above

Question 8 of 8

Which of the following vaccines is not part of the childhood immunisation schedule in the UK?

- A) Measles
- b) Polio
- C) Diphtheria
- D) Hepatitis B
- E) Tetanus

Short answer questions

Question 1 of 10

Name the control measures that are employed to prevent food and water-borne infections.

Question 2 of 10

What measures can be deployed to prevent hospital-acquired infections?

Question 3 of 10

Give examples of diseases which are ideal candidates for eradication, elimination and containment.

Question 4 of 10

What is 'herd immunity'?

Question 5 of 10

What are the features of a good surveillance system?

Question 6 of 10

Name some of the uses of surveillance for infectious diseases.

Question 7 of 10

List the various steps in an outbreak investigation.

Question 8 of 10

Name some of the measures undertaken by occupational health specialists in the UK to mitigate the effects of environmental hazards encountered in occupational settings.

Question 9 of 10

What is the definition of an 'emergency' according to the UK Civil Contingencies Act?

Question 10 of 10

What are the four phases of a disaster cycle?

Exercises (you may need to look up additional material to complete these exercises)

Exercise 1 of 3

An outbreak of food poisoning – an interactive learning exercise Based on: Badrinath *et al.* BMC Public Health 2004, 4:40. <u>http://www.ncbi.nlm.nih.gov/pmc/articles/PMC516780/?tool=pubmed</u>

This scenario could be used as the basis of a group discussion.

On a Wednesday 30th you (a member of the health protection team) are notified by the local microbiologist of the isolation of Salmonella enteritidis from the stool samples of five patients, all of whom had recently eaten at a local Chinese restaurant.

a) What would be your first actions?

It becomes clear that there are more potential cases who had eaten at the restaurant on Sunday 27th. The presenting symptoms are diarrhoea, headache, abdominal pain and fever. You decide to call together a group of people to investigate this. This is called an outbreak control team (OCT). You establish a case definition so that you can identify further cases. The case definition is determined to be: "Symptoms of acute gastroenteritis including one of the following: diarrhoea, vomiting or abdominal pain up to 96 hours after having a meal from the said restaurant including takeaway between 22 and 30 July and/or individuals who have positive stool sample for S. enteritidis up to 96 hours after having a meal from the restaurant including a takeaway between 22 and 30 July".

b) Who would be on the outbreak control team (OCT) and what would be its actions?

The OCT decides to carry out an epidemiological study to confirm the hypothesis that food eaten at the restaurant (or as takeaway) is the source of infection and determine the food type associated.

c) What type of study is suitable?

On investigation of the restaurant it seems most likely that dishes containing eggs or an egg/rice mixture were the most likely vehicles for infection.

Food	Eaten		Not eaten					
	III	Not ill	Attack	III	Not ill	Attack	p value	Relative
			rate			rate	for	risk
			(%)			(%)	difference	
Egg fried rice	31	5	86.1	7	9	43.8	0.0002	1.97
Chicken	20	15	57.1	7	10	41	0.16	1.39
masala								
Naan bread	7	16	30.4	9	20	31	0.34	0.98
Special fried	13	0	100	25	14	64	0.0009	1.56
rice								
Lamb korma	12	25	48	5	10	50	0.26	0.96
Chicken fried	9	0	100	29	14	67.4	0.4	1.48
rice								

d) Is this confirmed by the data shown below?

The attack rates are calculated from the number who became ill divided by the number who either ate or did not eat the dish. The ratio of the two attack rates is the relative risk. For the suspicion to be confirmed we would look for a significant difference between the attack rates

(i.e. a p value less than 0.05) and a relative risk above 1 showing that those who ate the dish were more likely to fall ill.

e) What actions would you now take?

Exercise 2 of 3

Exercise on using the disaster cycle

Look at the disaster cycle – what might the health sector involvement be at each stage if the disaster was:

a) A lack of access to fuel (rising tide)?

b) A hurricane (big bang)?

Disaster	Prevention measures in place to limit impact	Preparedness risk assessment and planning	Response – immediate	Recovery – return to normality
Fuel crisis				
Hurricane				

Exercise 3 of 3

What diseases are notifiable in the UK?

UK Health Protection Agency	http://www.hpa.org.uk/		
US Centre for Disease Control	http://www.cdc.gov/		
World Health Organization infectious	http://www.who.int/topics/infectious_diseases		
diseases topic	<u>/en/</u>		
Textbook covering communicable disease	Hawker J, Begg N, Blair I, Reintjes R,		
control	Weinberg J. Communicable Disease Control		
	Handbook, 2nd ed. Oxford: Blackwell		
	Science, 2005.		
Programme for monitoring emerging	http://www.promedmail.org/aboutus/		
diseases			
Example of an food poisoning outbreak			
report	E conde o Haral		
	report.pdf		
World Health Organization immunisation	http://www.who.int/topics/immunization/en/		
topic			
Information on adverse responses to	http://www.immune.org.nz/?t=720		
vaccination			
Information on preparing for emergencies in	http://www.cabinetoffice.gov.uk/ukresilience		
the UK	http://www.hpa.org.uk/Topics/EmergencyRes		

	ponse/
Information on preparing for emergencies in	http://www.bt.cdc.gov/
the US	
International Strategy for Disaster Reduction	http://www.unisdr.org/
World Health Organization on emergency	http://www.who.int/hac/techguidance/prepare
preparedness	dness/en/index.html
A guide to producing a HACCP plan (Hazard	http://www.food.gov.uk/multimedia/pdfs/guid
Analysis Critical Control Point)	ehaccpplan.pdf
Occupational health agency covering	http://www.safeworkaustralia.gov.au/Pages/d
Australia	efault.aspx
More information on assessing hazards and	http://scholar.google.co.uk/scholar url?hl=en
vulnerabilities	&q=http://www.ehs.unu.edu/elearning/pluginf
	ile.php/572/mod_data/content/3864/Concept
	ual_frameworks_and_Definitions.pdf&sa=X&
	scisig=AAGBfm1RtLiGr3Ktn0C rp4dBgrEhy
	Wz3A&oi=scholarr&ei=eL43T6zjIYrP0QW4tL
	2PAg&ved=0CCcQgAMoATAA
	http://weadapt.org/initiative/31
	http://www.unisdr.org/