Australasian Faculty of Public Health Medicine (AFPHM)

Oral Examination

2013 Sample Questions

Question 2: Chemical spill

You are a public health physician in your state health department and have just been informed of a motor vehicle accident that occurred a short time ago. A truck involved was carrying several large drums, one of which ruptured, releasing around 50 Litres of its liquid contents. The driver is confused, but thinks the drums contained some type of poisonous chemical.

The media is already reporting that the community has been put at significant risk, resulting in agitation in the Minister's office.
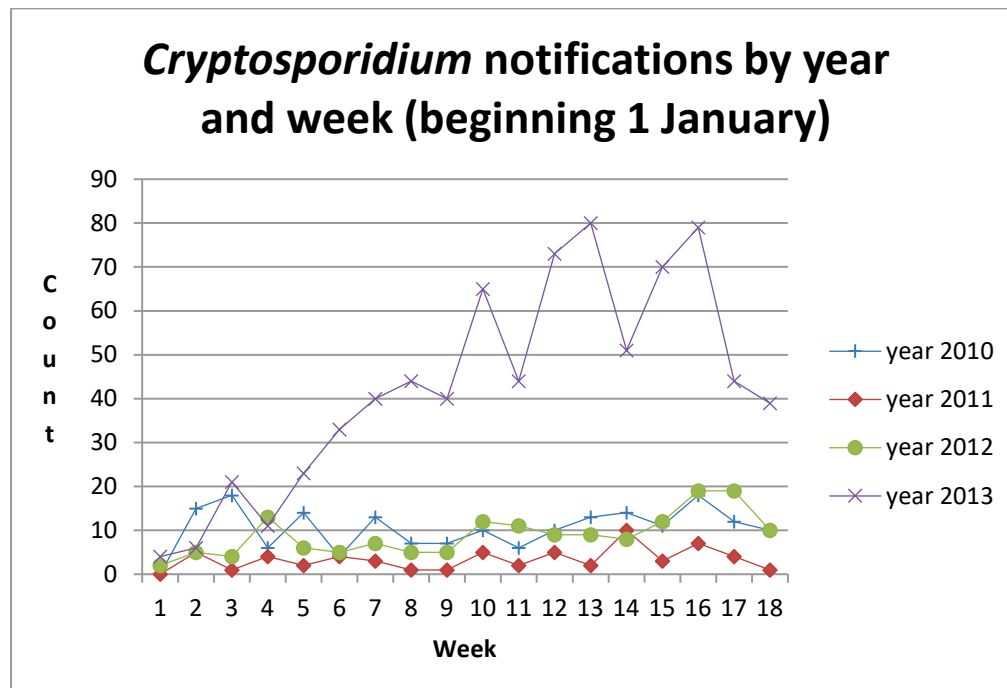
Outline how you would manage the public health response to this incident.

Notes:

This is an environmental health scenario describing an acute incident. The answer should include details of who you would consult with, what your tasks would be and who you would be working with. You would be expected to have knowledge of the emergency management system in your state. You would then be expected to discuss the potential hazard, the risk to the public and the management of this risk (hazard assessment, risk characterisation and risk management). The importance of communication (with details of with whom and why) should be conveyed in the answer. The urgency of this particular scenario should also be appreciated.

Question 3: Cryptosporidium gastroenteritis

You are a public health physician working in a state health department and have been asked to take over the management of an outbreak of *Cryptosporidium* gastroenteritis thought to be linked to public swimming pools. The graph below describes *Cryptosporidium* notifications to date in your jurisdiction (first 18 weeks of 2013) and notifications for the equivalent periods in 2010–2012, by week of onset.

It is now week 19. Outline your approach including steps you will take in managing this outbreak?

Notes:

This is a good example of a question that uses a set of real data that require some interpretation in delivery of the answer. It is wise to start by clarifying your role in this scenario. Then offer a description and interpretation of the data presented. One would then usually ask what further information was required in your approach (e.g. getting an understanding of the epidemiology of notifications and existing measures in place to manage *Cryptosporidium*). It would be usual in real life to move to conducting a thorough risk assessment based on the notifications and other considerations such as laboratory analyses and analytic studies. As the question asks how you would manage the outbreak, a description of risk management and communication strategies would be relevant.

Question 4: Meningococcal disease cases

You are a public health physician in a public health unit. In the last month, there have been three reported cases of invasive meningococcal disease in your community, population 100,000. **Your public health unit has appropriately followed up and managed the individual cases and contacts.**

The investigations identify that the three cases are not closely connected; however, two of the cases are teenagers who attend different but adjacent (next suburb) high schools.

Laboratory investigations confirm all three cases are serogroup W135.

> **(a) What is your interpretation of the situation?**
> **(b) Outline your proposed response.**

Notes:

This question is typical of a communicable diseases outbreak question where the issue relates to a common notifiable communicable disease. **Bolding** was used in this question to describe completed activities that do not need to be repeated/further described in the answer.

It would be useful to seek clarification of your role and responsibilities. The first question requires you to offer an objective **interpretation of the situation**, 'could this be an outbreak', and if yes, why is this so, and why is it of concern? What do you know from the scenario and what do you need to establish?

The proposed response to this scenario would likely be an outbreak investigation. Try to convey your practical knowledge and experience in order to work through the investigation steps. You may decide to use a framework but this needs to be clearly related back to the actual scenario. Start at the beginning for example with a case definition and work through an appropriate response; e.g. discuss the epidemiology; analyse risks (individuals/community) and risk mitigation strategies. What tools might you discuss to assist in determining the course of the outbreak? What are the communication issues? Try to be as specific as possible in discussing these.

Question 5: Designing a healthy lifestyle telephone program

You are a public health physician working in a state health department. You have been asked to design a healthy lifestyle program for individuals, to be delivered by telephone and internet to support healthy eating, an active lifestyle and achievement of a healthy weight.

How would you, as the project lead, go about designing this program?

Notes:

To answer this question, you would need to seek further information about time frames and funding for the program. You would also need to clarify exactly who the program was for and set aims and objectives. You could then describe how you would determine the content of the program – this might be by using a program-logic approach or similar. Engagement of stakeholders and potential end-users of the program should be discussed. You would need to consider how to evaluate the program, including process, impact and outcome measures.

Question 6: Statewide obesity prevention strategy

You are a public health physician working in your state/regional Department of Health. You have been asked to develop a strategy for obesity prevention in children in your jurisdiction.

Please outline how you would develop this strategy.

Notes:

This question is framed in terms of developing a strategy for obesity prevention rather than designing a specific program (as in the previous question). You have not been provided with very much information in the question stem, so it would be good to clarify first why and from whom the request has come. To plan a strategy, you would need to seek information/data about childhood obesity, risk factors and population distribution in your state. Identifying and engaging with relevant stakeholders would be helpful. You may wish to use a framework such as the Ottawa Charter (or other) to map out possible elements to your proposed strategy. Giving realistic examples of types of programs or elements to include in the strategy would be useful. You would need to consider how the strategy would be implemented and evaluated.

Question 7: Medically supervised injecting rooms

You are a public health physician working in a state health department. You have been requested by the Director of Public Health to develop a policy for the introduction of medically supervised injecting rooms in your jurisdiction.

> **(c) Outline the steps you would take in developing this policy.**
> **(d) What potential difficulties do you foresee in implementing the policy?**

Notes:

(a) Developing a policy

In developing a policy, it is usual to start by ensuring you are clear on the context and scope and understand the level of commitment to the idea. You would normally gain a strong understanding of the evidence behind a new policy and the stakeholders who are driving the policy as well as those likely to be impacted by it. Think of community, individuals and agencies – and give specific examples that you know about or have worked with. Remember when you are working in government (as in this scenario), you need to ensure appropriate briefings up the line on progress/issues. An analysis of the context of such a policy (especially given the potentially controversial nature of this) would be wise. How would you go about this?

(b) Potential difficulties

In responding to the second part of the question, you would need to think very practically about the issues that could potentially disrupt such a policy. It may help to draw on your own experiences. It would be useful to also discuss the different perspectives and perceptions (individuals/community/agencies). There will be practical considerations as well such as government commitment and the practicalities of law enforcement.

Question 8: Evaluating a smoking cessation program

You are a public health physician working in a state government health department. You have been asked to perform an evaluation of a state-wide program to reduce smoking during pregnancy.

Describe the steps you would take in performing this evaluation.

Notes:

You would need an understanding of the project aims and objectives, the intended target population, settings and time frames. You would need to clarify the scope of the evaluation. A literature review may be helpful to understand what has been found in similar evaluations. Generally, there is a need to include process, impact and outcome measures and you could discuss the types of data and data sources for each of these. You will need to make a decision about study design; for example, use of control group or pre-post design. Consideration should be made of sample size and timeframe to collect sufficient data. You will likely need approval from a research ethics committee prior to commencement.

Once the data is collected, analysed and interpreted, you would write a comprehensive report. Generally, such a report is required to be provided to the program sponsor (not indicated in this question but it could be the Commonwealth government, for example).

Question 9: Prostate cancer screening

The Prostate Specific Antigen (PSA) blood test is commonly used in Australia to detect possible cases of prostate cancer. You are a senior medical advisor to the Federal Minister of Health and have been asked to prepare a brief and recommendations on whether there should be a screening program for prostate cancer using the PSA test in Australia.

Outline the points you would make in this brief and your recommendation to the Minister.

Notes:

This scenario requires knowledge of the key principles for screening and early disease detection and the ability to discuss these as they apply to prostate cancer. The question asks you to focus on providing information to the Minister – in these situations, it may be reasonable to assume that the Minister knows little about prostate cancer – or may have misinformation about the disease. You should discuss relevant attributes of the condition (why is it important); the PSA test (usual statistical parameters in considering value of a test); clinical assessment systems in place; safety of treatment for prostate cancer; and who to treat.

You should work through a well organised discussion of potential benefits and harms from screening. The question requires you to make a recommendation to the Minister, so you should conclude your response with this.

Question 10: Rheumatic heart disease in Aboriginal and Torres Strait Islander populations

Rheumatic heart disease (RHD) is a major issue among Aboriginal and Torres Strait Islander people in rural and remote regions of Australia. The cornerstone of management and control is secondary prophylaxis – the delivery of 4-weekly injections of benzathine penicillin G for a minimum of 10 years to people with RHD or a history of acute rheumatic fever. Currently, in the most-affected jurisdictions, fewer than one-third of ARF/RHD clients receive the recommended 80% or more of their scheduled injections each year, and many receive less than half.

   (a) Discuss the various factors that may be responsible for these low delivery rates.

   (b) What strategies and mechanisms could be adopted to improve the delivery of secondary prophylaxis?
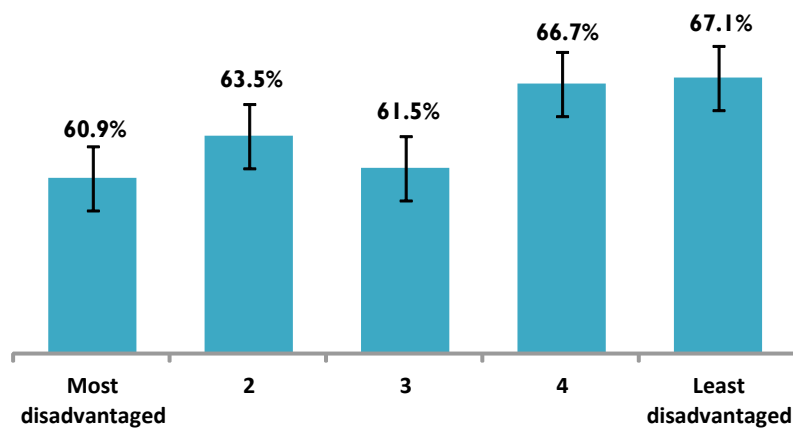
Notes:

This question deals with a very specific clinical issue for Aboriginal people. It provides an opportunity for you to demonstrate your level of cultural competency and understanding of the determinants of health for Aboriginal people. In terms of discussing the various factors that may be responsible for low delivery rates, an understanding of the impact of colonisation, disempowerment, poverty and ongoing racism is required. The question stem has not provided geographic placement; however, many Aboriginal communities are situated in remote locations. The concept of prophylaxis may not be consistent with a cultural understanding of health and wellbeing.

From this understanding, a description of factors responsible for low delivery rates can be provided. In terms of strategies/mechanisms to improve prophylaxis, this should include a clear description of working appropriately with Aboriginal people to lead change.

Question 11: Differences in cancer survival rates

The graph below shows the five-year survival rate for Tasmanians diagnosed with cancer in 2003–7 according to SEIFA index at the time of diagnosis.

Figure: Five-year age-adjusted cancer survival rates according to SEIFA Index, Tasmania 2003–2007

(a) **What does this graph show?**

(b) **What are the possible causes of this pattern?**

(c) **What health system responses could be used to address the situation?**

Notes:

There are three questions so each needs to be answered.

(a) What does the graph show?

You should explain what the SEIFA index is and then describe exactly what the graph shows in detail and the relationship Life Expectancy and SES.

(b) Possible causes of the pattern

Discuss likely factors associated with differences in SES.

(c) Addressing the situation

Provide practical ways of addressing the possible causes you have discussed in subpart (b).

Question 12: New oral treatment for weight loss

You are a public health physician. Your director has asked you to review the evidence from an intervention study of a new oral treatment for weight loss.

You obtain the following information:

	Incidence of 'good outcome'* per 1000 patients
Treatment group	40
Control group	20

Relative risk 2.0, (95% CI 1.2–3.5)

*A 'good outcome is defined as maintaining a weight loss of 5% of initial body weight at 90-day follow-up.

    (a) Is the treatment effective based on the information provided above?

    (b) How many people would need to be treated in order for one person to achieve a good outcome?

    (c) What factors would you take into account before recommending this therapy?

Notes:

You could start by commenting on making an assessment of the quality of the study.

(a) Is the treatment effective?

You would need to explain what the relative risk means and include an understanding of the 95% confidence interval. A conclusion needs to be made about whether the result is statistically significant as it is in this case.

(b) Population impact of the new treatment?

The question clearly asks for you to work out the number needed to treat to obtain a benefit.

(c) What factors would you take into account before recommending this therapy?

Some things to include may be costs of treatment and cost-effectiveness, side-effects of treatment, sustainability of weight loss effect, absolute risk/benefit as well as relative risk/benefit, external and internal validity of the study.

Question 13: Health concerns regarding 'smart meters'

Smart meters are wireless electronic devices used by electricity retailers for monitoring of domestic electricity consumption. Smart meters emit pulsed radiofrequency radiation to send information back to the retailer. They are replacing traditional power meters and are currently being installed at residential properties across Australia. A group called Stop Smart Meters Australia warns of health risks including behavioural issues and autism resulting from long term exposure of children to wireless radiofrequency emissions, such as from WiFi and smart meters.

You have been asked to produce a report for the Minister for Health within the next month on the possible risks of behavioural problems and autism associated with the roll-out of smart meters.

(a) **Describe the types of evidence that you would search for.**
(b) **Describe how you would go about assessing the possible association from the available evidence.**

Notes:

The question stem is quite long and so you need to focus on issues/information that matter in your response to the two questions.

(a) Types of evidence

You may consider looking for evidence in relation to other EMF exposures. In this part of the question you would ideally work through the various classes of evidence and describe them and briefly discuss their potential application or not to this issue. e.g. RCTs; systematic reviews; cohort studies; case control studies; cluster analyses; anecdotes; grey literature; industry reports vs independent reports.

(b) Approaches to the task of assessing the possible association

Some of the things you could discuss for this aspect of the question include analysing evidence and rating it in quality, finding empirical data on potential health problems, reviewing available policy documents and considering the biological plausibility. Evidence could be assessed against a causal framework (e.g. the Bradford Hill Criteria). You may also consider the feasibility/requirement to conduct a new study.