



# Faculty of Public Health

of the Royal Colleges of Physicians of the United Kingdom

Working to improve the public's health

## Examiners' comments and Key Points

FEEDBACK to Candidates

June 2015 Part A Examination

### **New for June 2015**

This set of key points refers candidates to the marking descriptors used by examiners to assess and score answers. Feedback has been received that key points are of variable length and so the word count of key points has been provided – the majority for Papers I and II range from 300-500. Paper IIA question 1 word count is also provided to illustrate an answer can be provided in less than 600 words.

Please note these are key points and not model answers. Comments from the Chair of Examiners are included, indicating general points to support candidates preparing for each section for future sittings. They are intended to be helpful rather than prescriptive.

Please note that comments from feedback on the current sitting may also be included in the chairs comments.

Sections of the syllabus being tested are included and indicate the **main** part of the syllabus being tested. Because questions in Paper IIB are from a limited pool of questions syllabus mapping is not provided. However all questions contain material included within the syllabus.

Candidates are encouraged to review the Frequently Asked Questions (FAQ) (section 12 on - preparing for the Part A examination) and also the Part A syllabus. Both are on FPH website:

[http://www.fph.org.uk/frequently\\_asked\\_questions\\_about\\_the\\_part\\_a\\_exam](http://www.fph.org.uk/frequently_asked_questions_about_the_part_a_exam)

<http://www.fph.org.uk/uploads/Sept%202013%20Part%20A%20Syllabus.pdf>

Descriptors for Paper I (from [www.fph.org.uk/part\\_a\\_examiners](http://www.fph.org.uk/part_a_examiners))

Dimension	Criteria	Suggested mark allocation
<b>Knowledge base</b>	All or most key points mentioned	+6 to +8
	50% key points mentioned	+4 to +5
	Fewer than 50% key points mentioned	+2 to +3
	None or almost no key points	0 to +1
(Errors of fact)	(Errors of fact, interpretation or significant amounts of irrelevant material).	(-1 to -2)
		<b>Max 8</b>
<b>Structure</b>	Outstanding structure with well organised material.	+1
	Good structure	0
	Poor or absent structure, with little coherence of information.	(-1)
		<b>Max. 1</b>
<b>Application</b>	Excellent use of material or evidence to answer specific question asked and demonstrate excellent critical understanding of the topic.	+1
	Good use of material or evidence to demonstrate a clear understanding of the topic.	0
	Candidate does not answer the question posed. Evidence is poorly focused and demonstrates inadequate understanding of the topic.	(-1)
		<b>Max. 1</b>
<b>Total mark</b>		

attainable		10
------------	--	----

Paper IIA Marking Descriptors		
Mark	Category	Descriptors
41-50	Excellent pass	<ul style="list-style-type: none"> <li>• All of the essential key points mentioned <b>and</b></li> <li>• Most of all of the additional key points mentioned <b>and</b></li> <li>• Very well- to excellently constructed answer</li> </ul>
31-40	Good pass	<ul style="list-style-type: none"> <li>• Most of the essential key points mentioned <b>and</b></li> <li>• Some of the additional key points mentioned <b>and</b></li> <li>• Well- to very well-constructed answer</li> </ul>
26-30	Clear pass	<ul style="list-style-type: none"> <li>• Clear majority of the essential key points mentioned <b>and</b></li> <li>• Averagely- to well-constructed answer</li> </ul>
25	Borderline pass	<ul style="list-style-type: none"> <li>• Half of the essential key points mentioned</li> </ul>
24	Borderline fail	<ul style="list-style-type: none"> <li>• Almost half of the essential key points mentioned</li> </ul>
21-23	Clear fail	<ul style="list-style-type: none"> <li>• Clear minority of the essential key points mentioned</li> </ul>
0-20	Bad fail	<ul style="list-style-type: none"> <li>• Small minority, almost none or none of the essential key points mentioned <b>or</b></li> <li>• Answer illegible <b>or</b></li> <li>• No answer submitted</li> </ul>

Summary statistics for the sitting are included on the [FPH website](#)

## Section A - Research Methods

### Question 1

You have been asked to carry out a systematic review.

- a) Define 'systematic review' and give one strength and one limitation of this approach.  
(30% of marks)
- b) Describe what is meant by 'heterogeneity' and discuss how you would assess it?  
(40% of marks)
- c) When would you use a funnel plot and how would you interpret it?  
(30% of marks)

### KEY POINTS

*Most or all of the following would be required for a pass:*

- a) Definition: A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question  
  
Strengths and limitations: One strength and limitation from below  
Strength –e.g. use of explicit method to minimise bias to produce reliable findings to inform decision making, means a larger confirmatory study may not be necessary, with heterogeneity can provide a more global solution to research question  
Limitation:e.g time consuming and therefore may not be complete or inform decisions where a prompt decision required. Electronic databases may have limitations in identifying eligible studies, older studies may limit amount of analysis in raw data and analysis may be confined to summary results, SR only as good as research question, methodology and analysis .
- b) Heterogeneity. Studies brought together and considered in a systematic review will differ in method and approach. This variability may be termed heterogeneity. Heterogeneity can be in participants, interventions and outcomes “clinical heterogeneity”, study design and risk of bias (methodological heterogeneity) and statistical heterogeneity.  
  
Assessment of heterogeneity: qualitative assessment before quantitative. First assess whether it is possible to combine evidence statistically. If interventions or outcome measures are different then the results should be described narratively and not combined statistically. If evidence is similar enough to be combined statistically, then meta-analyses should investigate statistical heterogeneity between study results that they are merging. The chi-squared test for heterogeneity is commonly reported, but lacks statistical power (i.e. whilst statistical heterogeneity may be present when  $p < 0.05$ , results where  $p > 0.05$  do not preclude heterogeneity).

Where heterogeneity is identified this needs to be explained and if severe, statistical pooling across studies is potentially inappropriate.

c) Funnel plot: this is plotted to investigate publication bias. The plot compares the summary measure of effect against sample size. The expectation is that the plot should look like an inverted funnel, with a wider diversity of effects observed with smaller sample sizes. If there is no bias, the plot resembles an inverted funnel. Where funnel plots appear unbalanced with few small trials observed with e.g. negative results, this may imply that there has been publication bias – with possibly such studies having been conducted, but not reaching publication.

*The following are additional points which might improve the answer to “good” or “excellent”:*

- A) Excellent candidates may mention specific measures of heterogeneity. These include Cochran’s Q (the weighted sum of squared differences between individual study effects and the pooled effect across studies) The  $I^2$  statistic describes the percentage of variation across studies that is due to heterogeneity rather than chance.
- B) Increasingly, the  $I^2$  test is used. Values below 20 imply minimal heterogeneity, values from 30-50 imply moderate heterogeneity, and values  $>70$  imply severe heterogeneity. Pooling by random effects model may be used instead of fixed effect models where moderate heterogeneity is found. Alternatively, it can be explored by stratifying by variables that may affect heterogeneity.
- C) Techniques exist to modify summary estimates based on funnel plots using statistical estimation of missing data e.g. “trim and fill”.

*Word count of key points 502*

**Area of syllabus being assessed:**

Demonstrates an understanding of 1a “Appropriate use of statistical methods in the analysis and interpretation of epidemiological studies including: systematic reviews, methods for combining data from several studies and meta analysis”. In addition related elements of “electronic bibliographical databases and their limitations, publication bias”

**Examiners’ comments**

There was a good range of marks and the question discerned between the excellent candidates and the poor candidates. Most candidates answered the question well. However, many of the weaker candidates had difficulties with describing a systematic review, heterogeneity, and funnel plots, which was disappointing. There was a general sense that there was adequate time for candidates to complete the question and there did not appear to be any ambiguity in the question or its interpretation.

Most of the candidates were able to describe and define each of the 3 subsections. The excellent candidates were able to demonstrate a wider knowledge of the 3 subsections, including good examples and the use of figures -this is to be commended.

Many candidates described process rather than answering the question, and some ended up duplicating heterogeneity and publication bias in response to question 1a. The weaker candidates were poor in all 3 sections from not being able to define the 3 components through to not answering the question. Poor answers showed a lack of detail and clarity when describing systematic review, heterogeneity and funnel plot. In many cases candidates had a disorganised structure and appeared not to adequately plan of their answer to ensure that the question was addressed correctly.

### **Chair's comments**

The use of figures may have helped demonstrate the answers, especially for question 1c. Candidates are encouraged to read the question properly rather than write what they know about the subject area. As a practical note coloured pens should not be used in the examination as scripts are photocopied for forwarding to marking examiners.

## Question 2

A major health promotion campaign to improve physical activity among children in your local area was launched a year ago. Interim evaluation of the campaign suggests that the programme may not have achieved the intended impact. You are asked to conduct qualitative research to understand further why the campaign may not have been as successful as expected.

- a) Outline possible study methods to undertake qualitative research in this scenario (50% of marks)
- b) Outline the strengths and weaknesses of using qualitative research in this situation (50% marks)

### Key points:

*Most or all of the following would be required for a pass:*

- a) Study methods with an indication of who and how participants might be recruited/involved.
  - a. Focus groups
  - b. Interviews (informal, semi-structured, structured)
  - c. Observations (hidden, participant, unobtrusive)
  - d. Case studies

Candidates should also comment that the method needs to include and be appropriate for the population e.g. children possibly with parents/teachers depending on the setting and focus of the campaign. Candidates may also mention involving those delivering the programme to see if for example there were any barriers to carrying out the interventions/providing materials in the campaign.
- b) Strengths
  - a. Complement quantitative evaluation
  - b. Provide answers as to 'how' and 'why' a programme worked or didn't work, i.e study issues not usually measured in quantitative methods
  - c. Identify 'gap' between evidence based approaches and issues in implementation
  - d. Provide information to replicate programmes elsewhere or identify why it didn't work in a particular setting

Weaknesses

  - e. Generalisability usually limited to the defined population from which samples are derived
  - f. Use may be limited e.g. cannot use to inform cost effectiveness, but may be used to supplement or inform further research.

Strength or weakness

  - g. As with all qualitative research needs to be analysed using correct methods.

*The following are additional points which might improve the answer to "good" or "excellent":*

- Sample size is usually small and therefore sample recruitment method within the defined population is critical
- Findings may be biased by researcher's own opinions
- Qualitative research can be used to develop hypothesis/ questions to use in quantitative studies

- Discussion on sampling methods and any limitations
  - Skills of interviewers critical in ensuring reliability and validity
- Word count 278*

**Area of syllabus being assessed:**

Demonstrates an understanding of 1d The principles of qualitative methods

**Examiners' comments**

This was generally answered well, with a good range of answers. It was disappointing that some candidates failed to read the question correctly, resulting in no marks being able to be given due to them describing quantitative rather than qualitative research methods. In relation to whether there was ample time for candidates to complete the question: some candidates answered question 2a better than 2b. It would appear that some candidates spent far too long on question 2a, leaving little time to answer 2b, which was detrimental as they carried equal marks. Examiners reported there was no ambiguity in interpretation of the question (However as below some candidates described quantitative rather than qualitative methods)

Many candidates showed good to excellent knowledge of qualitative research methods that were appropriate for the context. Most candidates knew the strengths and limitations behind the various approaches.

Weaker answers were often exemplified by the following:

- Reporting quantitative methods therefore gaining no marks.
- Spending too much time on question 2a and therefore marks were lost on 2b.
- Not considering all of the strengths and weaknesses of the study design.
- Not putting the context into their answers.

**Chair's comments**

Read the question and then read it again. For Papers IA and IB time management is important i.e. equal marks = equal time. Better understanding of qualitative methods. Ensuring answers are context specific rather than generic.

## Section B - Disease Causation, health protection, prevention and health promotion

### Question 3

Members of a local environmental pressure group are seeking your support, as a public health practitioner, to prevent the siting of a clinical waste incinerator near to their village on the grounds of the perceived risk to their children's health.

Describe the steps you would take to carry out a health impact assessment.

### Key points

*Most or all of the following would be required for a pass:*

#### **Ascertain the facts of the situation:**

- Is an incinerator to be built near to the village and if so exactly what, where, when and by whom?
- What is the membership, nature and influence of the pressure group, and what are their concerns?
- Are there likely to be other agendas?
- Who is/are the responsible authority/ies and to what extent have they been or should they be involved?
- Results of any impact assessments undertaken so far, as part of the regulatory process
- Mechanisms/processes available for obtaining the facts

#### **Decide on whether there is a need for the involvement of a public health practitioner and if so the nature and extent of that involvement:**

- Personal/professional
- Any likely conflict of interest, if incinerator is for clinical waste?
- Independent advice to the pressure group/advice to the responsible authority/ies
- Expertise/resources available
- Mechanisms/processes available for deciding on the involvement
- Scoping of the problem before embarking on full health impact assessment
- Make clear to the enquirer that you can advise from a public health perspective but would need to assess evidence before deciding whether or not you would support the group in its opposition to the incinerator.

#### **Assuming a professional involvement, obtain and interpret the relevant and available data and information, make recommendations and facilitate their implementation. Answers may include need to identify:**

- Emissions eg atmosphere, soil, water and relevant exposure pathways
- Past and current health risk and health data of the population in question
- Known health risks and health effects of exposure/proximity to clinical waste incinerator

- Likely health risks to and health effects in the population in question of exposure/proximity to the proposed clinical waste incinerator, including any sub-groups at risk
- Mitigation measures to address particular risks (eg filtration systems)
- Potential effects of operation outside of licence/agreed operating parameters (eg handling different types of waste)
- Emergency planning considerations, eg potential effects of floods, fires etc
- Mechanisms for consultation/involvement
- Sources of data and expertise
- Mechanisms/processes available for implementation of findings/recommendations

*The following are additional points which might improve the answer to “good” or “excellent”:*

A clear and logically ordered approach (such as that described above).

- Wider health impacts, such as traffic generated during construction phase and from normal operation
- Demonstrates understanding of the practical and political aspects of such situations.
- Demonstrates understanding of the organisational and legislative frameworks within which such situations are dealt with in candidate’s area
- Explores possible conflict between health service role in relation to clinical waste incinerator, and public health role – issues of trust involved and possible ways round.
- Recognition of the likelihood of political involvement in any debate.
- Considers input needed for monitoring of health impact if incinerator built
- Probability that situation will not be resolved to everyone’s satisfaction.
- Possible conflicts on types of evidence used by different interest groups.
- Demonstrates understanding of the issue of communication of risk
- Comparison with other technologies e.g. landfill other waste disposal
- Importance of documentation and reports (potential future inquiry)
- Wash-up and learning as with an incident might be appropriate
- Managing self (and team) – likely to be a stressful and difficult period

Word count of key points, 505

**Area of syllabus being assessed:**

Demonstrates understanding of areas included in 2f namely “health impact assessment for environmental pollution” “risk and hazard”

**Examiners’ comments**

Performance was generally adequate or good for this question. The majority had a basic understanding of the role of health impact assessment, the need to engage all stakeholders, and could provide an overall structure to their answer. However, many answers were very generic and not tailored to the specific question. There was a sense from marking the scripts that candidates had ample time to complete each questions.

Good answers were well structured, and included the need to initially establish basic facts before going further, considered the composition and agenda of the local pressure group, the political dimension to planning decisions, and the implications of undertaking a full health impact assessment (balancing priorities and resource implications that such an exercise would entail). Excellent answers also included discussion of possible mitigation strategies and considered the possible conflicts of interest for a public health specialist.

Where candidates performed poorly, generic answers were frequently given, offering a general introduction to health impact assessment, but not tailoring this to the question asked and providing little if any detail on how it would actually be undertaken (even to the level of failing to establish basic facts about the planned incinerator). In addition, some generic answers considered assessment of the health impact of an existing facility rather than HIA for a proposed development.

Some candidates failed to tailor the answer to the specific scenario in the question and failing to provide any detail on the actual conduct of a health impact assessment.

### **Chair's comments**

Where a question asks for stages e.g. of health impact assessment (but this could equally apply to outbreak management if that was the question), use a structured approach to ensure all stages of the process are considered. This is necessary but not sufficient- so what is also required is to adapt your general knowledge of health impact assessment to the specific scenario in the question. In order to do this try to "get inside" the scenario or question.

## Question 4

a) Describe the epidemiology of genital chlamydia infection in a named country.

(30% of marks)

b) Discuss population strategies to reduce the disease burden of genital chlamydia infection.

(70% of marks)

### Key points

*Most or all of the following would be required for a pass:*

a) Epidemiology of genital chlamydia (UK)

- Sexually transmitted infection caused by *Chlamydia trachomatis* – can result in pelvic inflammatory disease in women (leading to tubal factor infertility, ectopic pregnancy, chronic pain), epididymitis in men, and neonatal infection.
- Commonly mildly symptomatic or asymptomatic (50% men and 75% women).
- Most commonly diagnosed bacterial STI in the UK (>203,000 diagnoses in England, 390 per 100,000), but true prevalence difficult to establish and time trends may represent changed testing approaches, screening and awareness. Numbers of diagnoses have risen dramatically since 2000, but have plateaued in recent years.
- Highest risk in sexually active young adults of both sexes (incl. heterosexual and same sex activity) – 69% diagnoses in under 25s, but rates increasing faster in middle aged/older adults. Increased risk associated with unprotected sex, multiple partners, early onset of first sexual activity.

b) Population strategies

- Most population strategies are not specific to an individual STI – except chlamydia screening – but should be based on an understanding of the epidemiology and key risk groups, e.g. through surveillance based on service activity, diagnoses, and population surveys of sexual practice.
- Sexual health education – including school based, targeted at specific risk groups (including young people), out-reach campaigns, multi-media approaches, and population wide campaigns. Include awareness of risk/risk perception, safer sex practices, motivation/behaviour change, sign-posting to services.
- Easy access to condoms – subsidised/free provision in suitable locations.
- Rapid, easy access to appropriate and confidential sexual health services – for advice, information, diagnosis, treatment - using a variety of routes (e.g. wide availability in primary care, community/school/college outreach, telephone/online services as well as traditional clinics).
- Institute appropriate partner notification programmes.
- Encourage those in high-risk groups to attend for periodic sexual health screening.
- Screening programmes – (*but may not be relevant to all countries*) National Chlamydia Screening Programme in England. Offers testing and treatment in a variety of community settings outside traditional sexual health clinics tied to more centralised treatment and partner notification services.
- Awareness that the national screening programme is not really a population screening programme as generally understood (no defined sampling frame/ denominator/invitation and multiple samples could be submitted from the same individuals).

*The following are additional points which might improve the answer to “good” or “excellent”:*

Excellent candidates would provide a clear structure for their answers, would incorporate a wide range of population based strategies that involve a range of activities/services from outside of traditional healthcare/sexual healthcare services, and may also suggest coordination of efforts through a multiagency group/approach. In addition, an excellent candidate may briefly critique the approaches described.

*Word count key points =415*

**Area of syllabus being assessed:**

Demonstrates an understanding of 2b “Epidemiology of specific diseases” 2g knowledge of natural history, clinical presentation, methods of diagnosis and control of infections of Public Health importance..” Aspects of 2h Principles and practice of health promotion”

**Examiners’ comments**

This question was generally adequately answered, with a few good, well-structured responses. It appeared from answers, that candidates had sufficient time to answer the question.

Good answers were well structured, combining a succinct summary of relevant key points about the epidemiology of chlamydia with a comprehensive overview of population approaches to reducing sexually transmitted infections, identifying which were most relevant and appropriate for chlamydia. Excellent answers also considered the setting and delivery of specific population programmes that were based on an understanding of the evidence and the epidemiology of chlamydia.

Some candidates included a great deal of irrelevant material in section a, giving detailed descriptions of the methods of diagnosis and treatment options when this section only accounts for 30% of the marks. In addition, there was frequently a lack of structure to section b – with candidates reciting all they know about the prevention and treatment of sexually transmitted infections without tailoring this to chlamydia. In addition, candidates frequently omitted any real specific detail on how suggested population programmes would be delivered (e.g. by whom, to which target population, and in what setting). A few candidates also incorrectly identified the causative agent for genital chlamydia.

Imbalanced answers – frequently providing considerably more detail to section a than section b, without recognising the split in available marks. Lack of structure to section b, meaning that some key approaches were omitted completely.

**Chair’s comments**

Ensure the length and detail of answers are appropriate to the division of marks between sections, adopt a structured approach to ensure all relevant population approaches are considered, and tailor this specifically to ,in this case, chlamydia infection.

## Section C - Health Information

### Question 5

a) Discuss the main causes of population expansion

(40% of marks)

b) Describe three policy approaches that could be taken at a national level to reduce the rate of population growth. Briefly outline the public health impact of each.

(60% of marks)

### Key Points

*Most or all of the following would be required for a pass:*

a) These would include:

- Increase in birth rate. This may be as a consequence of perceived incentives for increasing family size.
- Reduced mortality rates. Particularly reduced infant mortality rates which may result from improved vaccination or other interventions.
- Increasing net inward migration. May be a particular issue when conflict results in large displacements of populations.

b) Could include three from the following with public health impacts included for each :

- Provide access to safe and effective contraception. Safe termination of pregnancy. This could take a universal approach and be aimed at both genders. Considerations include how the policy is funded and how all parts of the population are reached.
- Improving level of secondary care education, especially for women. Evidence that educational attainment is linked to early pregnancy and number of pregnancies. Education may provide an alternative set of options for individuals.
- Eradicate gender bias in all areas of society. If women have equal status and opportunity to be employed, own property, obtain credit, participate in political life etc. they are likely to postpone child bearing.
- Provide age appropriate sex and relationships education to children and young people.
- End policies that offer financial incentives linked to the number of children that they have. Such policies could be linked to parenthood rather than the number of children.
- Adjust existing policies to allow for an ageing society. This may reduce the perceived need to ensure that there are sufficient children to care for elderly parents.
- Policies that address reduction in net inward migration e.g. point system for entry, border control
- Note other reasonably argued and acceptable policies would be considered.

*The following are additional points which might improve the answer to "good" or "excellent":*

- Answers that take a broad public health perspective and consider relevant global issues rather than being restricted to policies/examples that are only relevant to a single country
- Answers that are well structured and include some critique of chosen policies
- in a) recognising synergism between the 3 main causes for the population explosion e.g. net migration of those of childbearing age

- In the overall approach to the question demonstrates an understanding of the significance of population expansion of the health of the population and on the need for health and related services.

Word count of Key points=372

**Area of syllabus being assessed:**

Demonstrates an understanding of 3a Populations: demography and “policies to address population growth nationally and globally”

**Examiners’ comments**

This should have been a straightforward question. Most candidates identified the key points, although the level of discussion varied. In part b, candidates were generally poor at outlining the public health impact. A surprising number of candidates did not mention policies based on improving educational attainment, reducing gender bias or broader factors that lead to people feeling the need to have large families, focussing more on contraception and control of migration. There was a sense that candidates had ample time to complete the question.

The best answers took a broad public health perspective and made reference to the impacts of factors such as changes in infant mortality rates and population level interventions such as vaccination. Good answers offered a broad public health perspective on the impact of proposed policies making the link between different determinants of health and also considering possible unintended consequences.

Poorer performing candidates tended to be too limited in their discussion of population expansion considering it solely in the context of one country. Some candidates tended not to identify **policy approaches** to reducing population growth, but described more general strategies. Many candidates discussed the general impact of these policies rather than focusing on the **public health** impact. A few candidates appeared to believe that policies that were intended to increase mortality (e.g. euthanasia) were appropriate public health policies for reducing population expansion.

In summary pitfalls included:

- Failing to discuss the impact of reduced mortality rates.
- Discussing migration/immigration rather than **net** immigration.
- Many candidates talked about increasing life expectancy in the context of developed countries and made no mention at all of the impact of mortality in younger people and children.
- Discussing fertility rates but not the concept of replacement fertility rate.
- Describing a policy without really considering the wider public health impacts

**Chair’s comments**

Please read the question very carefully and then read it again. If a question asks about **policy approaches** and **public health impact** make sure your answer addresses this.

A demonstration of understanding of a global perspective is important for answering this type of question.

## Question 6

a) Define the following and for a named country give a brief description of the data sources used in the calculation of :

- i. Crude mortality rate
- ii. Neonatal mortality rate

(50% of marks)

b) Discuss the differences between directly standardised mortality rates and Standardised Mortality Ratios .Describe when you would use each of these measures.

(50% of marks)

## Key Points

*Most or all of the following would be required for a pass:*

a)

- Crude mortality rate = number of deaths in year/mid-year population x 1,000
- Neonatal mortality rate = number of deaths in year **under 28 days of age**/number of **live births** in year x 1,000 (Can be broken down further into early neonatal (0-7 days) and late (8-27 days) neonatal deaths.

- Data sources for UK and Hong Kong:
- Deaths data from statutory deaths registration system (legal requirement to register death within a specified time period)
- Births data from statutory births registration system (legal requirement to register birth within a specified time period)
- Mid-year population estimates derived from decennial census (note these are estimates not census counts)
- In UK the above are collected by ONS in HK they are collected by the Census and Statistics Department

b)

Crude mortality rates misleading and standardisation allows comparison between populations by controlling e.g. for age.

- **Directly standardised mortality rates** require age specific mortality rates in the study population and the age specific composition of the standard population. Study rates are applied to a standard population (in UK and for international comparison often the European Standard Population). The resulting measure is a **rate**.
- **Standardised mortality ratio (SMR)** .The indirect method of standardisation used when age-specific rates are not known. Calculation requires age specific composition and the total number of deaths in the study population and age-sex specific rates in the reference population. Standard rates are applied to the study population. The ratio of the observed number of deaths to expected number gives a **ratio** (SMR).
- Both methods are used to adjust for the age-sex structure of the population
- Standardised rates allow comparison of two or more populations – a weighted average of age specific rates taken from a standard population and so are not actual rates.
- The choice of method is usually determined by the availability of data.

- Indirect standardisation (SMR) does not strictly allow comparison between rates – it compares against the standard used
- Indirect standardisation can be used for small numbers or if rates unstable.
- The choice of standard population should be stated as can affect rates.

*The following are additional points which might improve the answer to “good” or “excellent”:*

- The European Standard Population has recently been updated for the first time since the 1970s to allow for the ageing in Western populations – need to be aware of any changes in standard population when interpreting trends
- Small area epidemiology often uses SMRs because of the lack of suitable data for DSR calculation
- SMRs are a more precise measure and have narrower confidence intervals
- May include reference to other measures such as Comparative Mortality Fraction (CMF) = expected deaths (if study rates applied) in standard population/observed deaths in standard population

*Word count of key points = 444*

**Area of syllabus being assessed:**

Demonstrates an understanding of 2b rates and ratios to measure health status.

**Examiners’ comments**

This should have been a straightforward question as it asked about core concepts in public health. Although the majority of candidates got the key points, few did well. There appeared to be sufficient time for candidates to answer the question.

Candidates who performed well demonstrated the following:

Using accurate formulae which contained all the relevant information for the mortality rates. Some candidates were able to give very clear (often succinct) explanations of the differences between the two standardisation techniques leaving no doubt that they fully understood both what was involved in the calculation and the key reasons for using the two different approaches.

The most poorly performing candidates failed to answer parts of the question or failed to demonstrate adequate understanding of the key public health terms. Some failed to provide a description of the data sources used or a description of when you would use direct and indirect standardisation.

The quality of definitions of rates varied; some candidates did not mention a time period in their definition and many candidates did not identify the denominator for the crude mortality rate as the mid-year population.

Neonatal mortality rate was less well understood than crude mortality rate with confusion about the meaning of the term ‘neonatal’ (the period until 28 days) and also some confusion about whether the denominator (and in some cases the numerator) included stillbirths (neither terms include still births).

A few candidates were muddled about the differences between standardised and indirectly standardised mortality rates. A number of candidates were imprecise in their use of the terms rate and ratio. They are not the same and should not be used interchangeably.

### **Chair's comments**

Use clear definitions of rates which include all dimensions (numerator, denominator, time period, unit of expression). Ensure that you understand the systems in place in your named country for collecting vital statistics. Practise defining common concepts such as directly and indirectly standardised rates. Practise by writing out the definitions. Ensure that you understand when to use each approach.

## Section D - Medical Sociology, Social Policy and Health Economics

### Question 7

The impact of alcohol on health and disease in individual patients is well understood.

With reference to sociological theory or construct, outline the wider sociological, economic and political impacts of alcohol.

*Marks will not be awarded for describing the epidemiology of alcohol related disease.*

### Key points

Answer must include appropriate use of at least one sociological theory or construct, correctly defined.

Marks will not be awarded for describing the epidemiology of alcohol-related disease.

*Most or all of the following would be required for a pass:*

#### Sociology

- A sociological theory is a set of ideas that provides an explanation for human society.
- Theories of social control, social interaction and social norms, criminology and social deviance, age and gender roles.
- Structuralism, functionalism, consensus and conformity may help explain but may be seen as outmoded explanations.
- Social constructionist analysis argues that designations e.g. deviant are socially defined by people who reach those conclusions via shared and contested views of the world, society and their own lived experience.
- Consumption of alcohol in moderation is seen as pleasurable and acceptable to the large majority of the population in western countries.
- Alcohol can promote social interaction.
- Can be a major contributing factor to violent crime and domestic abuse
- Major cause of/contributor to family breakdown
- Major risk factor for accidents, including drink driving
- Association with unemployment and homelessness
- Alcohol associated A&E attendances and unplanned admissions – comment but not epidemiological detail

#### Economics

- Alcohol related industry and employment can be a major source of employment and tax revenue.
- Demand is relatively resistant to price rises
- Association with unemployment and homelessness – which can affect or be associated with local economy

## Politics

- Binge drinkers/street drinkers and antisocial behaviour are perceived to be a greater political problem than the impact on disease
- “Nanny state” versus libertarian view of the world
- Consideration e.g. of pros and cons of interventions such as minimum pricing and the impact on neighbourhoods on growth in number of licensed premises
- Many of issues described in economic and sociology sections above can be considered from political perspective.

*The following are additional points which might improve the answer to “good” or “excellent”:*

- A good or excellent answer concisely discuss a wide range of issues and correctly incorporate and demonstrate good understanding of sociological theory – for example
  - Social control
  - Criminology and social deviance
  - Age and gender roles

Word count = 317

**Area of syllabus being assessed:** Demonstrates an understanding of 4a Concepts of health, wellbeing and illness... including “theoretical perspectives and methods of enquiry of the sciences concerned with human behaviour” and “explanations for various social patterns and experience of illness”

## Examiners’ comments

There were satisfactory answers but very few who provided excellent answers on question 7. Candidates appeared to have ample time to complete the question, with few very brief answers.

Candidates who scored well clearly identified sociological theories and provided examples to explain this. Most talked about social norms and some talked about the nanny state vs libertarian view. Those who did poorly failed to identify any sociological theory and several identified psychological theories instead. Poorer answers also talked very generally about alcohol and spent too much time talking about the physical effects of alcohol on an individual. The question clearly indicated that consideration to sociological, economic and political aspects was required. Some candidates failed to provide an answer including all three aspects. There appeared to be no ambiguity in understanding of the question.

## Chair’s comments

Some comments were received after the examination from registrars about the wording of the question –ie whether the aspects were equally weighted. This could have been made clearer in the question. However the wording was to enable the candidate to consider all three aspects of the question. If the question had expected equal consideration this would have been included in there being a third of marks allocated to each section. Candidates appeared to perform better in this section than in recent sittings with a reasonable proportion of candidates providing good or excellent answers and only a small number candidates scoring 3/10 or less. Being aware and able to both discuss and summarise aspects of current social and economic policy by following current affairs is a good way of preparing for the exam. Candidates should review the syllabus section and be able to provide examples which relate to theory and apply theory to practice.

## Question 8

*In a fee-per-case (tariff based) payment system, healthcare providers are paid a defined sum of money for each episode of treatment.*

*In a capitation-based payment system, healthcare providers are paid a fixed sum to provide care for a specific patient population, regardless of how much care each individual patient receives.*

In a named country of your choice, compare and contrast the impact on the behaviour of organisations providing health care when health care is funded via fee-per-case versus a capitation-based payment system.

### Key points

Must briefly describe a named country, and relate their answer to this country's health care system.

*Most or all of the following would be required for a pass:*

- In a fee per case based system providers have a financial incentive to maximise the number of episodes of care, and thus may treat too many patients. In a capitation based system, providers may deny care to those who would benefit.
- In a capitation system, the budget is predictable, allowing for financial control. Capitation based systems tend to be better at constraining growth in health care costs.
- Fee per case based payment systems tend to allow for greater patient choice and competition.
- Transaction costs tend to be greater in a fee per case based system.
- Moral hazard concept
- Prevention/health promotion. In a capitation based system, healthcare providers will benefit long term if they can improve the health of their registered population and thus have an incentive to invest in health promotion. There is no incentive for the provider to invest in health promotion in a tariff based payment system.
- Patient outcomes. In a capitation based system, providers may under treat if there are cost/activity pressures, impacting on quality of care. In a tariff based payment system, there is an incentive to increase activity without explicit consideration of outcomes for patients.
- Selection bias. In a capitation based system, providers/insurers will benefit if their registered population is healthier than that of their competitors. May therefore try to game the system by discouraging unhealthy patients from registering with them.
- Balancing equity and efficiency

*The following are additional points which might improve the answer to "good" or "excellent":*

- Answer demonstrates an understanding of how payment mechanisms links to incentivising organisations to achieve desired end points or particular outcomes
- Discusses the impact on health inequalities in both these systems
- Describes the impact on the total population of an area of each system.

- Explicit recognition that neither system is perfect, and that there are advantages and disadvantages to both.

Word count 331

**Area of syllabus being assessed:** An understanding of 4d: Health economics “financial resource allocation” and “the role of incentives to achieve desired end points”

### **Examiners’ comments**

There were satisfactory answers but very few who provided excellent answers on question 8. From the examination scripts, candidates appear to have sufficient time to answer the question.

Candidates who performed well clearly explained the difference between the models and related it to their own healthcare system. The better students identified moral hazard and the impact on prevention and health improvement. Candidates who scored poorly were unable to provide examples of how the different systems worked in practice and did not consider how the different systems impact on public health priorities and prevention. Some confused the impact of the two systems.

Some candidates did not name the country and therefore application to the country of choice was not clear.

The question was clearly understood by candidates.

### **Chair’s comments**

Candidates appeared to perform better in this section (both question 7 and 8) than in recent sittings with a reasonable proportion of candidates providing good or excellent answers and only a small number candidates scoring 3/10 or less. Understanding different health care payment systems and implications as well as knowing key health economic evaluation definitions are good ways of preparing for this part of the exam. Candidates should be able to apply theory to practice.

## Section E – Organisation and management of health care and health care programmes

### Question 9

Organisational change occurs frequently in public health organisations.

Drawing on management theory, suggest an organisational strategy for dealing with such change in a public health setting of your choice. Illustrate your answer with an example of organisational change.

### Key points

*Most or all of the following would be required for a pass:*

Note although many examples of management theories are given as examples in the key points, candidates would be expected to provide two or three relevant theories clearly applied to the change described.

Candidates should identify an appropriate change

**1. Description of the current state of affairs in the chosen setting;** the strategy for change should reflect whether a large organisation or a small one is selected.

**2. Describe why there is a need to change, including the drivers for change.** Management theories/models include use of SWOT analysis.

**3. Describe how complexity, interdependence and fragmentation in the chosen setting can be understood.** This should cover power relationships, identification of key players, stakeholder analysis, the interaction between work structures and systems, procedures and people, and influencing skills for achieving change.

Management theories/models include Weisbord's Six-Box Organisational Model, 7S Model, PESTELI, Five Whys, Content, Context and Process Model, Soft Systems Methodology, Process modelling, Process flow, Influence diagram, and Theory of Constraints.

**4. Describe who and what can change.**

Management theories/models include use of Force field analysis, Sources and potency of forces, Readiness and capability, Commitment, enrolment and compliance, Organisation-level change interventions, Total Quality Management, Business Process Reengineering, Group-level change interventions, Parallel learning structures, Self-managed teams, Individual-level change interventions, Innovation research, and securing individual behaviour change.

**5. The strategy needs to involve all people and their representatives involved in the change.**

**6. Formulate a vision of what the new world could look like** as early as possible and promote this. There needs to be frequent, timely, repeated, and accurate communication

with all stakeholders during the change process about all significant change proposals and actions.

7. **Describe how change can happen.** Blocking, stress and conflict need to be identified and managed. Management theories/models include use of organisational development, organisational learning and the learning organisation, action research, and project management.

8. **Create task forces** for tackling particular problems and securing specific projects.

9. **Explain and consult** about the proposals to enable them to prepare to change.

10. **Monitor and evaluate** its effects.

*The following are additional points which might improve the answer to “good” or “excellent”:*

Logical approach to developing the strategy including well applied management theory.

Acknowledgment of cycle of change

Potential loss of organisational memory following change.

Word count 373

**Area of syllabus being assessed:** Demonstrates an understanding and can apply syllabus area 5c Management models and theories associated with change management

### **Examiners' comments**

Most of the candidates answered this question well and provided good examples of “Change management” – for example - the re-organisation and the transfer of the public health from PCTs to Local Authority. Most of the candidates managed to achieve a pass grade. The vast majority of candidates appeared to have sufficient time to answer the question. Most of the candidates managed to mention at least one or two Change Management theories. Those who followed the strategy framework (the 4 steps) managed to have a good structure and applying the change management theories.

Candidates performed poorly in the following ways:

Those who did not manage to get good marks / failed this question did not manage to give good examples and found it difficult to demonstrate the change management theories on their poor examples. The candidates had some problems in the application of the theory and the change management theories into a strategy framework.

### **Chair's comments**

When planning the answer for a question such as this there are probably two main elements to think about. One is the change example to be given and the second is management theory or theories. Before writing consider can the two work together to illustrate the change management theory and the elements of change. Some questions will ask for one named management theory, others (as in this question) will not specify a number of theories. The important aspect will be demonstrating a good understanding and application of any theory used. One or two theories used appropriately will score better marks than listing but not applying a series of many theories.

## Question 10

- a) Define risk in the context of healthcare (10%)
- b) Outline a framework you would use to measure the level/scale of risk (10%)
- c) Describe how healthcare organisations can minimise risk (80%)

### Key points

*Most or all of the following would be required for a pass:*

- a) Risk is the chance of an adverse outcome resulting from investigation, treatment or care
  
  - b) Analyse range of potential consequences and likelihood of risks using a standard classification 5x5 likelihood vs impact matrix. Recognition of spectrum of risk: low-moderate-high-very high. Note if candidates use another appropriate example, credit will be given.
  
  - c) How healthcare organisations can minimise risks:
    - 1.-Use of a systematic and structured risk management framework;
      - Action Plans to manage / minimise significant levels of risk (high or very high)
      - Root cause analysis to identify system factors, and human factors to manage risks
  
    - 2.-Collation of risk information in a consistent format
      - use of risk registers within the organisation
      - appropriate reporting mechanisms to provide assurance of effective management of risk
  
    - 3.-Developing cultural factors within organisation:
      - open and transparent practices
      - clear policies
      - ‘no blame’ culture
      - accurate, timely data which is actively used by staff and management (scrutiny culture)
      - clear accountabilities
      - upwards reporting systems are clear
      - audit and feedback with demonstrable success in reducing risk
- Additional framework to use could include Risk Assessment, Risk Management & Risk Communication

*The following are additional points which might improve the answer to “good” or “excellent”:*

- Candidates could mention of national litigation mitigation schemes (eg NHSLA) and how this links to, for example good governance and overall reputation of a the health care system;
- The importance of links clearly made to overall governance (corporate, information and clinical) within the organisation
- Explicitly demonstrates understanding of links with patient safety by mentioning this within the answer.

#### Note for Hong Kong

- Example of risk reporting in HK: under the Advance Incident Reporting System (AIRS), Hospital Authority staff can make timely reports of medical incident through HA’s internal electronic system. There are also some electronic risk registers between some hospital clusters to monitor and review the complaints systems.

Word count 314

**Area of syllabus being assessed:** 5e Health and social service quality : risk management

#### **Examiners’ comments**

In general this question was answered well. The majority of candidates managed to give a good definition of risk and gave good examples of “Risk minimisation”. Candidates appeared to have ample time to complete the question. Most of the candidates managed to give a good definition of risk and used good examples. The risk minimisation section was answered well by most of the candidates.

Many candidates did not outline a framework to measure the level/scale of risk using systematic and structured risk management framework.

Those who got poor marks did not demonstrate knowledge of risk minimisation and linking it to governance (corporate, information and clinical).

#### **Chair’s comments**

Candidates may find it useful to think of a structure upon which to organise their answer. Time management is important – ie spend the majority of time on the part of the question with most marks – part of this question carried 80% of marks. With the subject of risk – think how different types of risk (corporate, financial, patient safety) can support or at times compete against each other.

## Paper IIA

### Suicide in adults released from prison in Queensland, Australia: a cohort study

You are a public health specialist working in a local public health department that has two large prisons in its catchment area. You have been asked to lead a project looking at the mental health of recently released prisoners and a colleague from the prison service has forwarded you this paper.

### Spittal MJ, Forsyth S, Pirkis J, et al. *J Epidemiol Community Health* 2014;68:993–998. Suicide in adults released from prison in Queensland, Australia: a cohort study

Note to candidates: This paper has been reduced in length by removing:

- The Abstract
- Strength and Limitations
- Summary
- Box entitled 'What is already known on this subject'
- Box entitled 'What this study adds'

1. Using a critical appraisal approach, **in approximately 600 words**, draft a summary of the key findings and the strengths and limitations of this study. (40% marks)

#### Summary of key findings:

Rate of suicide similar to drug related deaths post release from prison  
Being married reduce and number of previous incarcerations increased risk of suicide

Women were 14.2 and men 4.8 times more likely to die from suicide than would be expected in the general population.

#### Strengths

- Retrospective cohort study with long follow-up (14 years)
- Large sample size (>42 000)
- Ability to match death records from national system, so able to follow-up people who have moved away from the area where they were imprisoned
- Were able to compare with general population over the same time period
- Used person-years for calculating rates
- Took account of changes in risk factor 'values' over time – e.g. reflect the changing personal circumstances of the prisoners after release
- Identified important risk and protective factors – which could be used in practical way to support prisoners prior to their release
- Adds to the understanding of prisoners health – risk of suicide is similar to that of drug-related deaths, especially after the critical 2 week period after release has passed.
- Highlights that in comparison to the general population, women released from prison are at very high risk of suicide – reflecting the high levels of mental health problems in women prisoners

- Identifies system-level approaches that have been shown to reduce suicide in other populations that could be developed in support to prisoners

### **Weaknesses**

- Analysis of risk factors was restricted to those that were collected in standard dataset. There may have been other factors (which could be locally-specific) that had as or more important impact on risk of suicide
- Small number of female suicides in general population – so difficult to interpret for the youngest and oldest age groups
- General issue about under-reporting of suicides (common in all countries, not unique to Australia) – difficulties in ascribing suicidal intent in some cases
- Possible misclassification of some drug-related suicides as accidental
- Change of ICD version (from ICD-9 to ICD-10) during the study period, although less than 5% were coded using ICD-9 so effect are likely to be minimal

(word count=335) Note the strengths and limitations in the Key Points are not necessarily the same as those in the published article.

2. In the study, researchers used survival analysis to examine predictors of suicide among people released from prison. They present their results as hazard ratios. Explain what is meant by hazard ratios and how to interpret the values. (10% marks)
  - *Hazard ratios – the ratio of the hazard of an event in one group of observations divided by the hazard in another.*  
*Measure the strength of the relationship between a predictor variable and outcome (in this study suicide)*
  - *HR = 1 – the risk is the same in both group (i.e. no difference in risk)*
  - *HR >1 – adverse effect / risk of outcome is increased*
  - *HR <1 – protective effect / risk of outcome decreased*
  - *Assumes that the hazard is constant over time*
  - *Factors / predictor variables that can be used can be binary, categorical or continuous*
3. You have been asked to present the findings to the prison healthcare steering group (with representatives from clinical services, public health and the prison / judicial system). Outline the four key points you want to raise with this group based on the findings from the paper. (20% marks)

### Key points

- Suicide rates are similar to drug-related deaths, but there is a different 'timescale of risk'
- There are some factors which seem to protect against suicide
- Identifying who is at risk prior to release – and starting to address potential risks – needs to happen well in advance of release

- Mental health problems in prisoners are much higher than general population – system level approaches to managing these risks to prevent suicide should be developed
  - The risk of suicide in released women is very high compared with women in the general population
4. The prison healthcare steering group have asked you to draft a proposal for a local initiative to reduce the suicide rate in recently released prisoners. Based on your reading of this paper, what are the key steps you would need to identify in your project proposal? (30% marks)
- Agreeing the proposed approach – system level approaches including single point of contact for released prisoners in crisis; dual-diagnosis policy recognising the strong associations between substance misuse and suicide risk; multi-disciplinary review following suicide- linking prisoner information sets with death registers to ensure that previous imprisonment is flagged for consideration as a risk factor in suicides.
  - Data collection and matching databases for the various risk factor groups – clarifying what is available
  - Qualitative work with prisoners / ex-prisoners to identify any locally-specific risk factors or protective factors
  - Mapping current services – both prison-related and general population and capacity to take on extra work / pilot project
  - Mapping current resources to resource need
  - Approvals mechanism - Caldicott Guardian, ethics
  - Follow up – how to measure outcomes and success

**Area of syllabus being assessed:** Paper IIA assesses syllabus area 6

### **Examiners' comments**

This was the first sitting of candidates undertaking the new style IIA paper when a limit of 600 words was stipulated in answering question 1, although in this first sitting, the examiners did not penalise the many candidates who exceeded this limit. However, they are likely to do so in future sittings. **(NB This will be made very clear to candidates in advance of the sitting)**

On the whole, the answers to this paper were disappointing and in many cases quite inadequate. Many candidates would have done better if they had read the questions properly and limited themselves to answering the questions asked.

There was still too much unnecessary information included, as was seen in previous sittings in the old style question, one example of this being a statement of the authors' objectives in answer to question 1. The question asked for the key findings and not the objectives; these were clearly stated in the paper and did not require repeating.

Some candidates answered question 1 as they might have done in previous sittings, ignoring the changes that have taken place in how the examiners now expect this critical appraisal question to be answered.

Question 2 was badly answered and indicates a generally poor understanding of basic statistics with many candidates fishing for marks by writing down the few facts they did know, whether they had any relevance to the question or otherwise.

Some of the answers to question 3 and more of the answers to question 4, as in previous sittings, indicate a lack of public health experience. It seems possible that some candidates may be taking the Part A exam before they are ready to do so.

There was a lot of information provided in the paper by Spittal et al. which too many candidates failed to make use of, question 4 often being answered as generic project management which could have been applied to anything rather than specifically answering the question. There was a sense that candidates had sufficient time, in that few showed evidence of not being able to complete all questions as far as they were able to.

There were some fair attempts at questions 1 and 3.

For Q1, those candidates who took time to assimilate their thoughts from the critical appraisal and think about how they were writing the 'Strengths and weaknesses' (rather than merely follow-up a critical appraisal framework squashed into fewer words) scored well.

In Q3, candidates who provided rationale for the key points they would cover and pulled together linked pieces of information from the paper into a single key point, scored well.

Examples of where candidates performed poorly include the following:

In Q2, many candidates failed to take advantage of points available in a straightforward 'technical' question, demonstrating poor basic statistical knowledge. As noted in previous papers, candidates should be able to give basic statistical definitions with some degree of accuracy.

Many also demonstrated limited practical public health experience in their answers to question 4.

### **Chair's comments**

Practice précising papers to describe key points, strengths and weaknesses etc.; this new style of question is testing the ability to present the findings of a critical appraisal in a coherent, succinct manner and also to describe the 'so what' of the findings and how they could be applied (or not) in real life public health practice.

Spend as much time as possible doing practical work in public health departments.

There were some comments received that the wording of question 1 (ie inclusion of summarising key findings) was different from the new IIA specimen questions provided on the FPH website. Please note that the specimen questions are illustrative of questions – wording may change. The overall intention is to move away from candidates feeling rushed and writing out a very detailed critical appraisal. The new format was successful in reducing the amount candidates wrote overall, although some candidates were still providing too much extraneous information.

## **Paper IIB**

Overall most candidates performed well. As in previous sittings, while most candidates gave reasonable answers to data interpretation questions, a number struggled with carrying out simple calculations and describing key concepts. Candidates need to ensure that they have read the syllabus for Part A and are able to conduct calculations appropriately.

A number of candidates failed to address the questions asked and gave extraneous information. It is very important to refer back to the question asked and provide a focused answer rather than writing all that is known on a topic which attracts no marks. For example if a question asked the candidate to use the data provided then this is what was required and not a general answer on the topic in question. Also when asked for two points candidates who provided just one point and could not get all of the marks.

A few candidates seemed to run out of time. Candidates should ensure that they allocate sufficient time to each question but this was not common.

## **Chair's comments**

Questions from Paper IIB are not released on the FPH website, however specimen questions exist on FPH website. Candidates should prepare by knowing key definitions and being able to critically analyse and succinctly summarise tables of data (e.g. from journal article study results sections). Candidates are advised to review pages 3 and 5 of the syllabus to review statistical requirements.