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

January 2017 Part A MFPH Examination

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.

These questions and key points also include mark schemes. Prior to this exam sitting (January 2017), examiners marked to key points with a pass mark set at 50%. Typically the majority of key points were required to achieve a pass score (of e.g. 5/10). For this exam sitting, examiners marked using the mark schemes provided unaware of the pass mark for each question which had been set by our examiner standard setting group last April.*

Candidates should be aware that mark schemes will always be used with discretion by examiners, such that answers that do not fully fit the model answer/or mark schemes are judged in terms of their relevance and overall fit with the question asked. Our double-blind marking (i.e. two examiners marking independently) allows such answers to continue to be marked as fairly as possible. Equally, it is worth being aware that as more questions are written with both key points and mark schemes, so we anticipate our mark schemes may at times be more specific than some of those used in this exam.

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/uploads/Sept%202013%20Part%20A%20Syllabus.pdf

*For further details on this standard setting process – please see the information available on the FPH website here: http://www.fph.org.uk/part_a_development.

Descriptors for Paper I

Each question for **Paper I** is of equal value and is marked out of 10. As pass marks vary now the following is only a guide.

Mark awarded in relation to pass mark	Category
+3-4	Excellent pass
+2	Good pass
+1	Clear pass
0	Borderline pass
-1	Borderline fail
-2	Clear fail
-3	Bad fail

Paper IIA is marked out of 50.

Mark awarded above pass mark	Category
+15	Excellent pass
+5-10	Good pass
+1-4	Clear pass
0	Borderline pass
-1	Borderline fail
-2 to -4	Clear Fail
-5 to -20	Bad fail

Summary statistics for the sitting are included on the FPH website

Section A – Research Methods

Question 1

A recent systematic review found that reducing saturated fat intake by reducing and/or modifying dietary fat reduced the risk of cardiovascular events by 14% (RR 0.86, 95%CI 0.77 to 0.96; 65,508 participants of whom 7% had a cardiovascular event, I^2 50%).

There were no clear effects of dietary fat changes on total mortality (RR 0.98, 95% CI 0.93 to 1.04; 71,790 participants) or cardiovascular mortality (RR 0.94, 95% CI 0.85 to 1.04; 65,978 participants).

a) Describe the key stages of a systematic review.

(5 marks)

b) Interpret the finding of I^2 50%.

(1 mark)

c) The authors stated that: "There were no clear effects of dietary fat changes on total mortality or cardiovascular mortality". Explain the possible reasons for this.

(4 marks)

Key points

Systematic reviews

Key stages:
- Involve a detailed and comprehensive plan (protocol) containing a <u>search strategy</u> derived a priori
- <u>Combine and interpret data</u> this may include undertaking a meta-analysis which involves using statistical techniques to synthesize the data from several studies into a single quantitative estimate or summary effect size
- <u>Assess/appraise study quality</u>

Good/excellent answers will also state:

- Identify a clear question with a population defined within it and a treatment/exposure defined within it
- May specify that the population and intervention/exposure may be defined with clear inclusion/exclusion criteria
- Select studies often through a three stage process of:
  - o Title review
  - o Abstract review
  - o Full paper review
- Extract data from identified/selected studies (primary research)
- Refer to the Cochrane collaboration

Excellent answers will also describe:

- that they understand not all SRs relate to interventions
- that systematic reviews are designed to reduce bias and provide the 'best evidence' in the hierarchy of evidence

Marking guidance:

- All three key stages mentioning search strategy, synthesising data, and appraising the evidence = 2 marks
- All three key stages plus 2 or more additional points generally well described = 3 marks
- All three key stages plus 3 or more additional points which are well described = 4 marks
- All or almost all of the additional points plus the three key stages with very good clear explanation = 5 marks

I^2 50%

I^2 is the measure of heterogeneity of the included studies – heterogeneity is inevitable to some degree given studies are likely to differ in some way – participants, interventions, etc. **I^2** 50% represents moderate heterogeneity

Excellent answer may state where heterogeneity is detected meta-analysis should be undertaken cautiously, and reasons for the heterogeneity should be explored. Also, a random effects approach to meta-analysis would be favoured.

Marking guidance:

- 0.5 mark = basic explanation
- 1 mark = thorough explanation

Possible reasons

Candidate should make reference to the data provided in the question in relation to the following possible explanations:

- Real effect – there is no difference. Reducing saturated fat by reducing and/or modifying dietary fat does not reduce the risk of death overall or by cardiovascular disease.
- Chance - there is a real effect but the systematic review did not detect this due to lack of power or the effect size is too small to be detected. Reducing saturated fat by reducing and/or modifying dietary fat does reduce the risk of death overall or by cardiovascular disease. For example, cardiovascular mortality the relative risk is RR 0.94, 95% CI 0.85 to 1.04. CI includes one therefore the result is not statistically significant. If confidence interval was narrower (future review updates with more patients and more events) then the confidence interval might not include 1 and the result would then be statistically significant.
- Bias - reduced in a systematic review by including all the available evidence and risk of bias is assessed including publication bias; other sources of bias should also be made explicit

- Confounding – included studies are likely to be RCTs which, if randomised appropriately will minimise the effects of confounding because the known and unknown confounders should be distributed 'evenly' between groups/arms of study if the study is large enough. Quality criteria for inclusion and exclusion of studies should be rigorously implemented.

Marking guidance:

- 4 points with minimal explanation and no clear link to diet = 1 mark
- 4 points with minimal explanation but clearly rooted in diet = 2 mark
- 4 points with good explanation = 3 marks
- 4 points excellent explanation = 4 marks

[Note: 3 points but with good explanation can score 2 marks]

Syllabus sections being examined:
1.a. Epidemiology: systematic reviews, methods for combining data from several studies, and meta-analysis

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Examiner comments

Candidates knew the key features of a systematic review fairly well and many were able to pass easily. Nevertheless, few demonstrated a very good to excellent understanding in their response. The third section of question 1 was answered relatively less well – most knew the possible explanations but stated them without applying to the specific context, in this case diet.

Chair comment:

Candidates are always advised to try to base their answers in a public health context with application relevant to any specific scenario included in the question.

Section A – Research Methods

Question 2

Recent governmental guidance has emphasised the need for a local multi-agency, cross-sectoral approach to end Female Genital Mutilation (FGM). You work in a local public health organisation which is leading the multi-agency strategy group on FGM prevention. The group has decided that it is important to learn more about the local communities who may be affected and to understand their beliefs, thoughts and attitudes towards FGM. The group have decided to conduct a piece of qualitative research to do this.

    a) What are the key features of qualitative research?

(4 marks)

    b) In a named relevant group in the community, describe and justify one specific qualitative method of data collection that would be appropriate.

(6 marks)

Key points

Qualitative research

- A method of enquiry, a systematic subjective approach to exploring phenomena
- Used to gain insight; explore the depth, richness, and complexity the phenomenon(a) of interest
- Not numerical - depends on conceptual analysis
- Used where it is important to understand the meaning and interpretation of human social arrangements

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Marking guidance:

- 2 out of 4 elements discussed = 1 marks
- 3 out of 4 elements discussed = 2 marks
- 4 out of 4 elements discussed = 3 marks
- More than 4 elements and very well described = 4 marks

Good answers may describe the range of potential study techniques including focus groups, interviews, and case studies.

Good/excellent answers may describe the range of analysis techniques such as grounded theory, framework analysis, and conversational analysis.

Appropriate qualitative method of data collection

Candidates should identify and justify their choice of relevant individuals in the population for the study, e.g. faith leaders, older women, community leaders, etc.

Data collection methods in this situation would either be focus group or individual interviews

Focus Group – justification
- Can explore participants' beliefs, thoughts and attitudes towards FGM
- Good in exploratory situations where little known as is the case here

- Generates a great deal of data rapidly
- Shift in power from researcher to participants (useful as groups involved likely to be marginalised and more likely to speak out if balance shifts)

Interview – justification
- Can explore participants' beliefs, thoughts and attitudes towards FGM
- Good for detail – able to explore topics in depth
- Allow interviewer to explain or clarify questions, increasing the likelihood of useful responses
- Good for exploring sensitive subject areas (FGM)

Marking guidance:

- To achieve 3 marks – must define a group and a method and 2 out of 4 justifications
- Good or excellent answers may mention
  - Mention of constructivist v positivist paradigms
  - Mention of likely funding limits – focus groups likely to be more efficient (cheaper) way of gathering substantial amounts of data.

Syllabus sections being examined:
1.d. The principles of qualitative methods: semi-structured , narrative and in-depth interviewing, focus groups, action research, participant observation

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Examiner comments

Candidates generally scored well on this question with reasonable responses on qualitative studies. Almost all candidates were able to identify a good group for studying FGM and to suggest the method (interview or focus group). Very few justified the choice but instead provided lengthy explanations on how to undertake such a study.

There were some extremely lengthy answers to the question on qualitative research – candidates often appeared to write all they knew rather than focusing their answer on the specific question asked, this is poor use of time and often prevents a candidate from scoring as highly as they might otherwise.

Section B – Disease causation and the diagnostic process in relation to public health; prevention and health promotion

Question 3

Describe and discuss the challenges that may arise in the recognition and management of outbreaks of sexually transmitted infections.

(10 marks)

Key points

Acknowledgment of similarities and differences in outbreaks of STIs in characteristics, context, identification, organisation of services, confidentiality/data sharing/ notifiable nature of disease (or not).

- <u>Principles of outbreak investigation and management are the same as for any outbreak</u> and specific aspects of control will depend on the infection. However, certain characteristics of these infections, the context in which transmission occurs, and the organisation of specialist services may be different for STIs compared with other conditions.
- <u>STIs are associated with social stigma</u>, and some outbreaks have been associated with other (sometimes illegal) behaviours, so that confidentiality concerns may restrict willingness to present to services and subsequent access to service (clinic) data. Treatment of the index patient and case-finding through identification and treatment of sexual contacts is important to interrupt transmission; this process can be limited by willingness to disclose and multiple (potentially anonymous) sexual partners. Sustained behavioural change may be required to reduce infection rates in vulnerable sexual networks. Thus, managing an outbreak may depend on the specifics of the sexual network involved.
- Outbreaks of STIs may evolve <u>over long periods of time</u> due to the nature of certain infections (e.g. syphilis has a long incubation period, long period of infectivity and relatively limited and unusual initial symptoms) and the complexity of sexual networks make these difficult for individual clinicians to recognise. Outbreaks are frequently identified via laboratory reporting (exceedance or unusual antibiotic resistance pattern), which may not be apparent until transmission is well established.
- In most countries, <u>specialist services for the diagnosis and management of STIs are provided by confidential, open-access and free clinics that may function separately from other health services.</u> Confidentiality is extremely important to encourage attendance and trust in services, and typically, only anonymised activity data are routinely available, which may be difficult to link to other data sources. However, in the UK legislation allows sharing of information with other health professionals in the interests of controlling spread.
- <u>As for other conditions, the response to outbreaks of STIs requires a multidisciplinary and multiagency approach</u> – this should include specialist clinicians and sexual health advisors with experience of delivering relevant interventions (e.g. partner notification). The evidence base for individual interventions is often lacking and given marked differences in affected sexual networks, the response will need to be carefully tailored and include elements of primary prevention (behaviour change) and secondary prevention (encouraging self-referral to services and case finding). In general however, effective interventions require knowledge of the vulnerable sexual network and approaches targeted at specific sub-populations.

- STI may lead to vertical transmission to transplacentally, or during childbirth

Marking guidance:

Candidates describing only one area above, or simply describing generic aspects of an outbreak investigation with no specific reference to STIs would score 0-2 depending on the level of detail and relevance provided in their answer.

To attain 3 marks candidates will describe 2 areas above with some detail

To attain 4 marks candidates will describe three areas above with some detail

To attain 5 marks candidates will either:
- Describe 3 areas above in good detail
- Or describe 2 areas above in good detail and two or more areas also mentioned but with insufficient detail

To attain 6 marks candidates will:
- Describe 4 areas above in good detail, or
- Describe 3 areas above in good detail, and one other appropriate area not mentioned above

To attain more than 6 marks candidates will achieve the level described for 6 marks and will also be very well-structured answer, drawing on specific and relevant examples of real-world practice (e.g. outbreaks of syphilis or antimicrobial resistant gonorrhoea reported from the UK).

To attain 8 or more marks candidates would do all the above and demonstrate a detailed knowledge of the organisation of specialist services and surveillance systems in a named country (and how this pertains to outbreak control) and relevant legislation relating to confidentiality [e.g. in the UK, NHS (Venereal Diseases) Regulations 1974, NHS Trusts and Primary Care Trusts (Sexually Transmitted Diseases) Directions 2000].

Syllabus sections being examined:
2.g. Health protection and communicable diseases: the steps in an outbreak investigation

Examiner comments:

Most candidates had a good grasp of the epidemiology and control of STIs and better candidates were able to combine this with the principles of outbreak control.

Some candidates took this as an opportunity to demonstrate their knowledge of STIs and outbreak investigation principles individually but did not combine the two in the context of recognising and managing outbreaks of STIs, these scored poorly as a result.

Section B – Disease causation and the diagnostic process in relation to public health; prevention and health promotion

Question 4

   a) Describe the main epidemiological features of lung cancer in a named country of your choice.

(5 marks)

   b) Describe how healthcare services contribute to the primary prevention of lung cancer.

(5 marks)

Key points

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

Epidemiology of lung cancer

(Note: the model answer below gives data for the UK. Providing data on an alternative named country was perfectly acceptable).

An important public health problem
- Carcinoma of the lung is an important, and largely preventable, cause of premature death world-wide. Lung cancer was the most common cancer in the UK (excluding skin cancer) until 1997, when it was overtaken by breast cancer. Lung cancer is the second most common cancer in the UK for both men and women (excluding skin cancer).

Lung cancer trends
- Overall, the incidence of lung cancer in Great Britain has declined slightly since the late 1970s due to the 45% decrease in the male European age-standardised incidence rate from 176.2 / 100,000 in 1979 to 95.5 / 100,000 in 2012 offset by the 64% increase in female lung cancer incidence from 38.0 / 100,000 in 1979 to 66.5 / 100,000 in 2012.
- Trends in lung cancer incidence rates reflect past trends in cigarette smoking prevalence. Smoking rates peaked earlier in males than in females in the UK, so lung cancer rates in mend have been decreasing for some decades but this decrease is yet to start in women. In 1979, the male: female ratio for lung cancer incidence was 33:10 in 1979 falling to 12:10 in 2012.

Risk factors for lung cancer
- An estimated 86% of lung cancers in the UK are linked to tobacco smoking; 83% due to active smoking and 3% due to environmental tobacco smoke exposure in non-smokers (passive smoking). Lung cancer risk is 26 times higher in men who smoke 15-24 cigarettes / day than never smokers. The risk increases from x5 higher in smokers of 1-4 cigarettes / day to x39 in smokers of 42+ cigarettes / day.
- Occupational exposure is linked to an estimated 21% of lung cancers in men and 4-5% of lung cancers in women in the UK, of which an estimated 6-8% of lung cancer deaths in the UK each year are linked to asbestos exposure. A small proportion of lung cancer cases are related to other occupational exposures: glass manufacture (silica exposure); brick laying (silica exposure); professional drivers (diesel exhaust exposure); painters; welders.
- An estimated 8% of lung cancers each year in the UK are attributable to exposure to outdoor air pollution and the particulate matter within it.

- About 0.5% of lung cancers in the UK are linked to exposure to radon in the home alone, and 3% to exposure to radon and smoking in combination. The effect of radon exposure

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Marking guidance:

- Candidates describing only one area above would score 0.5-1 depending on the level of detail and relevance provided in their answer.
- To attain 1.5 marks candidates will describe 2 areas above with some detail, and would list risk factors with little or no elaboration
- To attain 2 marks candidates will describe 3 areas above with some detail and would list risk factors with some detail only.
- To attain 2.5 marks candidates will mention all 3 areas above, i.e.: importance of the disease, some detail on incidence and trends, and will describe a minimum of three risk factors with reasonable detail.
- To attain 3 marks candidates will: mention all 3 areas above with good detail, and include description of four or more risk factors with good detail (e.g. mention of passive smoking)
- To attain 4-5 marks candidates will achieve the level described for 3 marks and will also be very well-structured answer, drawing on specific and relevant examples. Highest marks will be given to particularly well-structured, detailed answer with relevant data for a named country.

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on lung cancer risk does not differ between smokers and non-smokers.

How health services contribute to the primary prevention of lung cancer

Health services have a significant role to play in the primary prevention of lung cancer through supporting smokers to quit smoking. Lung cancer risk increases with both the duration and amount of smoking, but duration has the biggest effect on risk. Giving up smoking in middle age avoids most of the subsequent risk of lung cancer.

- *Opportunistic brief advice and brief intervention about smoking*
  Routine questioning of patients about their smoking habits by all healthcare staff: Ask about smoking, Assess readiness to quit, Advise on where to get help to quit; Make Every Contact Count
- *Providing access to smoking cessation services*
  Health services can support people to stop smoking by providing behaviour change support and therapeutic aids to quitting. The range of smoking cessation services available should address barriers to accessing services for different population groups, particularly those with high smoking prevalence. Service planning informed by analysis of smoking prevalence by age, sex, socio-economic group, ethnic group
- *Social marketing campaigns to promote stopping smoking*
  Healthcare services can fund social marketing campaigns to encourage people to quit smoking to prevent lung cancer: Who are the target audience? E.g. young smokers; how can they be reached? E.g. via social media; what is the message? E.g. quit now and your risk of cancer is low; what do they need to do? E.g. access help to quit on line, phone a helpline number
- *Smoke free environment on healthcare premises*
  UK law bans smoking in enclosed and substantially enclosed work and public places. Healthcare premises can take a societal lead in extending the ban on smoking to outdoor areas by adopting an organisational policy that smoking is not permitted anywhere on the premises. A 'smoke free' policy is only effective if introduced in conjunction with

education of staff and patients, access to smoking cessation services for staff and patients while in hospital and enforcement of the policy.

- *Social norm is people do not smoke*
Social norms of peers, friends and family are a big influence on whether or not people start smoking and successfully quit smoking. Healthcare organisations and staff can take a societal lead by promoting a culture for staff and patients that the social norm is not to smoke

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Additional points that might improve the answer from "good" to "excellent"

- Reducing the number of cigarettes smoked per day does not seem to reduce risk of lung cancer in heavy smokers as lung cancer risk is similar in heavy smokers who halve their daily intake to those who sustain a high intake
- 16% of men who smoke all their lives die of lung cancer by age 75, 10% who stop smoking by age 60, 6% who stop by age 50, 3% who stop by age 40, 2% who stop by age 30.
- 10% of women who smoke all their lives die of lung cancer by age 75, 55 who stop by age 60, 2% who stop by age 50

Marking guidance:

- Candidates describing less than 3 strategies with minimal detail or only one strategy with good detail will receive 0.5-1 mark depending on level of detail and relevance.
- To attain 2 marks candidates will describe 3 strategies above with some detail, or two strategies but good detail.
- To attain 2.5 marks candidates will mention a minimum of 3 of the above strategies with reasonable detail
- To attain 3 marks candidates will: mention 4 areas above with good detail
- To attain 4-5 marks candidates will achieve the level described for 3 marks and will also be very well-structured answer, drawing on specific and relevant examples. Highest marks will be given to particularly well-structured, detailed answer with relevant data for a named country.

Examiner comments

Answers ranged from some very high standard answers to some much less good answers, with most falling in between. Some candidates disadvantaged themselves by spending a disproportionate amount of time on section (a), leaving themselves too little time for section (b).

Better candidates wrote a well-structured answer on lung cancer epidemiology, addressing time/place/person with in-depth description of the full range of risk factors for lung cancer (smoking/occupation/environment). Poor answers appeared 'journalistic' in style, lacking use of basic epidemiological principles, with few facts or figures to support statements made about disease causation, incidence or time trends.

Whilst for (b) better candidates were able to successfully contextualise health promotion theories/frameworks to the healthcare setting; poor answers were often limited to simply mentioning smoking cessation services, or gave a well-structured but broad tobacco control strategy answer without adequate depth on the specific contribution of health services (as specified in the question).

Syllabus sections being examined:
2.b. Epidemiology of specific diseases (and their risk factors) of public health significance: Knowledge of the defining clinical features, distribution, causes, behavioural features and determinants of diseases which currently make a significant impact on the health of local populations; with particular reference to those diseases/conditions that are: potentially preventable; require the planned provision of health services at individual, community and structural level.

Section C – Health information

Question 5

   a) List the key features of a population–based disease register.

<div align="right">(3 marks)</div>

   b) Discuss the challenges associated with establishing and maintaining a reliable population-based disease register.

<div align="right">(4 marks)</div>

   c) With reference to a specific disease, outline how information from population-based disease registers may inform the planning of healthcare services.

<div align="right">(3 marks)</div>

Key points

Key features of a population-based disease register

- Defined population base – usually geographical but may also be by age or type of organisation, e.g. general practice, industry
- Clear case definition, and agreed definitions of other information recorded, (e.g. risk factors, outcomes)
- Usually only worthwhile for long term conditions (e.g. diabetes)
- Needs to have a purpose (e.g. the improvement/optimisation of care)
- High 'registration' rate with processes to ensure that all eligible cases are included on the register

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Marking guidance:

- Candidates mentioning one feature with some detail, or two features with no detail would score 0.5 marks
- To score 1 mark candidates need to describe two features with some detail, or more features with little detail
- To achieve 1.5 marks candidates need to describe 3 out of 5 feature above with some detail.
- More feature with good detail – score 2-2.5
- All features with good detail – score 3

Challenges of establishing and maintaining a reliable population-based disease register

- Accuracy can be compromised by lack of
    - Accuracy of the diagnosis
    - Completeness of case ascertainment,
    - Completeness of the records for each case

- o Accuracy of the records for each case
- Expensive
- Takes time and effort to establish and maintain high quality register
- Can be difficult to identify and remove individuals that have died/moved away

Marking guidance:

- Candidates mentioning one challenge with some detail, or two challenges with no detail would score 0.5 marks
- To score 1 mark candidates need to describe two challenges with some detail, or more challenges with little detail (note accuracy is only one challenge)
- To achieve 2 marks candidates need to describe 3 out of 4 challenges above with some detail. (note accuracy is only one challenge)
- More challenges with good detail – score 3-3.5
- All challenges with good detail – score 4

Use of data from a disease register for healthcare service planning

State the specific disease
- Reports past episodes of disease, may not have very current information and past may not predict future
- May provide data on both incidence and prevalence (and mortality if includes follow up)
- May contain information on severity of the condition which may inform the need for specific additional services e.g. in a diabetes register the register may contain information about morbidities associated with diabetes such as renal disease, eye disease and peripheral vascular disease.
- Example include cancer register, congenital anomaly register, Disease register within General practice
- Can be used for planning services for new treatments or assessing the impact of new models of care, auditing standards of care and identifying changes in outcomes e.g. recovery, complications, survival
- Data protection issues: Security of data, consent, linkage of data

Marking guidance:

- Candidates mentioning one use with some detail, or two uses with little detail would score 0.5 marks
- To score 1 mark candidates need to describe two uses with some detail, or more uses with little detail
- To achieve 1.5 marks candidates MUST state a specific disease and mention use for incidence/prevalence monitoring, and inform treatment planning in some detail
- Four or more uses with good detail – score 2-2.5, higher scores for more uses and better structure.
- Six or more appropriate uses (not necessarily as described above) with good detail and good structure – score 3

Syllabus sections being examined:
3.b. Sickness and health: registration systems for specific diseases including morbidity registers ; use of information for health service planning and evaluation

Examiner Comments

This was a relatively straightforward question and the answers were generally very good. The marks could have been even higher if more candidates had provided comprehensive answers for the easier section (a) question.

Some candidates did not seem to be aware that disease registers are mainly used for long-term conditions. A small number listed an infectious disease or a cancer screening programme as their example, and went on to describe screening measures such as sensitivity and specificity.

In section (b) of the question (establishing a disease register), many candidates gave too much detail about information governance. Many candidates did not consider possible reasons for difficulties capturing accurate information from different sources. Few candidates mentioned the need to have processes in place to remove people from the register.

Section C – Health information

Question 6

The table below shows the number of deaths and the direct age-standardised death rate (deaths per 100,000) from accidents in men aged 65 and over for the years 1995-97, in eight regions making up a country of 45 million people.

Regions	Number of deaths	Age-standardised death rate per 100,000 men
A	807	67.99
B	639	64.37
C	625	61.88
D	669	55.27
E	676	48.69
F	822	54.77
G	668	68.16
H	728	59.75
Country	5634	59.43

a)   Outline how the direct age-standardised death rates were calculated.

(3 marks)

b)   What are the limitations of these age-standardised death rates in giving a picture of accidents in older people?

(4 marks)

c)   How would you, as a public health practitioner, monitor this aspect of the health of older people?

(3 marks)

Key points

Outline how the direct age-standardised death rates were calculated

Candidates are expected to have a clear understanding of the mechanics of age-standardised rates. These are 65+ men and so the process would be:
- Select suitable age bands, say 65-69 … 80-84 … 85+
- Calculate the age-specific death rates for each of the age bands
- Apply these stratum specific rates to a standard population. This could be the national population, or more conventionally a 'made-up' standard population such as the European standard population.
- The calculated number of deaths in the standard population is then divided by the population size to give the standardised death rate.

Marking guidance:

- One element omitted = 1 mark
- All elements described = 2 marks
- All described clearly = 3 marks

Limitations of approach

- The exact figure arrived at depends to some extent on the standard population chosen. Hence it may be best to stick to an accepted standard such as the European standard reference population.
- If the true age distribution of any one region is markedly different from the standard then the results may be misleading.
- Standardised rates do not have intuitive meaning for lay people. Their main use is to allow a fair comparison across areas or over time intervals.
- These are death rates, and the basis for such data is the death certificate. Certification practices tend to vary a great deal and whether or not a death is ascribed to an accident depends upon the accuracy and completeness of the information provided in the certificate.
- Many more accidents occur in the elderly than result in deaths attributable to them. Hence death rates provide only a limited picture of the burden of morbidity due to accidents in the elderly
- These data are for men only. Women make up an ever increasing proportion of the population as it ages.
- Note: excellent candidates may be aware that the European Standard population has recently changed

Marking guidance:

- To achieve 1 mark must include at least 2 points from above (or other reasonable points) with some detail
- To achieve 2 marks must include at least 3 of the points above (or other reasonable points) in reasonable detail
- To achieve 3 marks must include 4-5 of the points above all in good detail (or other reasonable points)
- To achieve 4 marks must include all the points above, or a total of six relevant points, all in good detail, with a well-structured and clear answer.

Monitoring this aspect of the health of older people

- Carry out the same direct standardisation exercise (including calculation of confidence intervals) retrospectively, in both males and females, to establish trends over time at both regional and national level.
- For monitoring purposes data should be collected prospectively (this may include prospective measurement of age standardised death rates or other data sources).
- Formally compare age-standardised death rates from accidents in a comparable elderly population (e.g., a neighbouring country).
- Analyse relevant, routinely-collected data from other sources (e.g., hospital in-patient datasets, A&E department records, and nursing home reports) include morbidity as well as mortality with appropriate detail in terms of type of injury: (e.g. fracture, burns, head

injury), cause (e.g. fall, road traffic accident etc.) and place of accident (home, residential /nursing home, hospital etc.)
- Where appropriate, commission special surveys of the local elderly population.

Marking guidance:

- For 0.5 mark should mention one area above in some detail
- For 1 mark should mention prospective monitoring <u>and</u> one other area above in some detail
- For 1.5 marks must mention <u>calculation both prospectively and retrospectively</u> and should make mention of including other data (not mortality) with reasonable detail
- For 2-3 marks would include 3 or more elements described above, including mention of data for women. Higher scoring answers are more detailed with good clear structure.

Syllabus sections being examined:
3.a. Sickness and health: rates and ratios used to measure health status;
3.c. Applications: indices of need for services;
Also relates to core data handling skills and the ability to perform core statistical techniques: direct age-standardisation

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Examiner comments

This was a straightforward question and many candidates answered it well, without difficulty. Those candidates who performed particularly well often illustrated their previous experience of calculating and using age-standardised rates within their answers.

Several candidates did not know how to calculate a direct age-standardised death rate and therefore scored poorly on the first part of the question. The third part of the question was also not generally well answered, with many candidates simply listing a number of routine data sources and describing how these could be used to build up a profile of accidents and injuries in the elderly. Few candidates considered actively monitoring the DSR itself – for example, by looking at time trends and variations by gender and age and between populations. Very few candidates mentioned carrying out local surveys and a high proportion of candidates did not mention the limitation around data being provided for men only, when accidents affect both sexes.

Chair comments: this question highlighted the need to practise/gain experience interpreting and dealing with common public health data such as standardised rates/ratios.

Section D – Medical sociology, social policy and health economics

Question 7

Discuss the impact of migration on:

    a)   The health of migrants

                      (5 marks)

    b)   The impact on society in the country to which they migrate

                      (5 marks)

Key points

Impact on the health of migrants

- People who are healthy or wealthy are more likely to move. People who are older or less healthy are more likely to stay behind.
- Issues of unaccompanied children need to be considered
- Many women may have faced sexual assaults/rape if from an area of conflict
- Stress of moving/leaving family etc. behind. Impact on mental health.
- Mental health effects and trauma of fleeing conflict/war situations, e.g. post-traumatic stress disorder (PTSD)
- Over time, migrants tend to adopt the lifestyle of the country they move to which can have implication for their health e.g. obesity for migrants to USA.
- Culture/language can present barriers to the use of health and social services

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Marking guidance:

- For 1 mark candidates would include 2 points from the list above with reasonable detail (or other well-formed points) or more points but little detail included.
- For 2 marks candidates should include 3 points either from the list above with reasonable detail/explanation or other well-formed points
- For 2.5 marks candidates must include 4 points – either from the list above with reasonable detail and explanation, or other well-formed points
- For 3-4 marks candidates should include 5-6 points either from the list above with good detail/explanation, or other well-formed points
- For 5 marks the answer should include a minimum of six points, be well structured, clear and detailed

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Impact on society

- As migrants tend to be younger and healthier than the indigenous population they tend to make less use of health services than expected for their age.
- Migrants often take jobs for which they are overqualified
- Change in the epidemiology of some conditions e.g. blood borne viruses are more common in some parts of the world, and some conditions vary by ethnicity.
- "Inappropriate" use of health services, due to differences in service provision e.g. may make more use of emergency department services as not familiar with primary care services.

- As migrants tend to be younger the impact tends to be greater in health services that primarily relate to younger people (e.g. maternity, paediatrics, obstetrics) than on health services that primarily meet the needs of older people (e.g. internal medicine)
- Services need to be tailored to meet the needs of migrants e.g. provision of interpreters, and services to be culturally sensitive
- May increase overall demand for health and social services, leading to increasing waiting lists/times.

Additionally may comment on:
- Community cohesion and the impact on residential and institutional segregation
- Differences between different groups of migrants, e.g. migrants from Eastern Europe have, a very different impact to, for example, longer established migrant groups, such as those from South Asia or the Caribbean. Or in Hong Kong, recent migrants from Mainland China.

Note on either part (a) or (b) candidates might improve their answer by clarifying definitions – distinctions between migrants, refugees, and asylum seekers

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Marking guidance:

- For 1 mark candidates would include 2 points from the list above with reasonable detail (or other well-formed points) or include more points but little detail included.
- For 2 marks candidates should include 3 points either from the list above with reasonable detail or other well-formed points
- For 2.5 marks candidates must include 4 points – either from the list above with reasonable detail, or other well-formed points
- For 3-4 marks candidates should include 5-6 points either from the list above with good detail, or other well-formed points
- For 5 marks the answer should include a minimum of seven points, be well structured, clear and detailed

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Syllabus sections being examined:
4.a. concepts of health, wellbeing and illness, and the aetiology of illness: explanations for the various social patterns and experiences of illness; the role of social and cultural factors in the aetiology of illness and disease.

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Examiner comments

Whilst this question appeared to be well understood by candidates many had difficulty providing complete/thorough answers.

Answers tended to be better when the essay was structured around the question being posed. Good answers were clearly written, well organised and showed that they had been at least briefly checked through. Better candidates mentioned differing health status and the use of services, e.g. vaccination and screening, prior to migration.

Candidates generally answered section 'a' better than section 'b'.

Some candidates repeated points in both sections, which did not result in extra points. Equally, some candidates presented an issue without providing sufficient explanation or

detail. Very few candidates presented any relevant sociological theory, though Goffman was mentioned by a few candidates.

Chair comments: for this form of question, candidates tend to do better if they reflect on the question and write a brief plan to help structure their subsequent answer.

Section D – Medical sociology, social policy and health economics

Question 8

Your health organisation wishes to increase patient and public involvement in planning and policy development.

a) From a sociological perspective, discuss the challenges and barriers which need to be overcome to enable patient and public involvement to occur.

(5 marks)

b) Using an example of a patient and public involvement group, describe benefits that can accrue from their involvement?

(2 marks)

c) What measures could be taken to ensure that patients and members of the public are enabled to participate in the group fully?

(3 marks)

Key points

Addressing inequalities but ensuring patient participation

- <u>Differing levels of knowledge</u> between group members
- <u>Concepts of power, interest and ideology</u>
- <u>Ensuring representative user & carer</u> involvement in service planning
- Role of health professionals in society
- Using a co-production approach at all levels, so that planning and policy development are done collaboratively
- Use of peoples' commissions / citizens' panel

Marking guidance:

- For 1 mark candidates would include comment on 2 elements in some detail but make no reference to a sociological approach
- For 2 marks candidates should include all 3 elements (underlined above) in some detail but may not make any reference to a sociological theory or approach; or: would include less than 3 of those elements but make reference to a sociological theory/approach
- For 2.5 marks candidates should include all 3 elements underlined above with reasonable detail to their description drawing briefly on one sociological theory/approach
- For 3-4 marks candidates will include all 3 mandatory elements (underlined) plus other elements mentioned above (or appropriate alternatives) and will draw more thoroughly on one or more sociological theories/approaches. Better answers will be more clearly structured and more detailed.
- For 5 marks six or more elements described above (or well-formed alternatives) will be included and will draw thoroughly on sociological theories and approaches

Example of PPI and its benefits

- Must give an example
- Some benefits explained for the patient/carer and (if possible) wider society

Marking guidance:

- 1 mark: Example given with benefits explained
- 2 marks: Detailed public health-related example given with benefits explained with clarity, well-structured answer

Measures to improve participation

- Selection with clear job description and person specification
- Training appropriate to role
- Mentorship which is ongoing
- Empowering and ensuring PPI member is given chance to be heard 'safely' (this may include pre-meetings and de-briefing)
- Seeking views through existing fora (e.g. voluntary organisations), patient reference groups
- Use of social media to elicit views and develop networks of interested people
- Terms of Reference for the group
- Payment of reasonable expenses including loss of earning and child care

Marking guidance:

- For 0.5 mark should include 1-3 elements with either less detail (and more elements) or less elements and some appropriate detail
- For 1 mark should include 2-3 elements from list above (or alternative appropriate suggestions) with appropriate description
- For 1.5 marks should include 4 elements from list above (or alternative appropriate suggestions) with appropriate description
- For 2 marks should include five elements from above (or appropriate alternatives), be well structured, clear and appropriate description of elements.
- For 2.5 - 3 marks should include 6 or more elements from above (or appropriate alternatives), be well structured, clear and appropriate description of elements

Syllabus sections being examined:
4.c. equality, equity and policy: user and carer involvement in service planning; appreciation of concepts of power, interests and ideology

Examiner Comments

Candidates who performed well had prepared a well-structured essay and correctly framed the answer that demonstrated their thoughtful understanding of the question being posed.

However, several answers given were often too brief and did not demonstrate sufficient consideration of the topic.

The most common sociological concepts used were Parsons' sick role, professionalism, deviancy / stigma, and conflict theory. These were acceptable if the candidate provided a correct definition and linked the theory to the question posed. However, many candidates did not cite any sociological concept / theory when answering this question.

Some answers tended to be given in bullet format and therefore failed to provide sufficient discussion or explanation of the concept(s) or plans described.

Chair's comments: candidates are advised to take note of marks allocated to sub-sections within any one question. This question awarded 5 marks to part (a) – and therefore that part of the question deserved as much time to be devoted to it, as the latter two sections: (b) and (c) together; and thus required a considerably more detailed answer than was required for either section (b) or (c) individually.

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

Question 9

You have been asked to lead a new multidisciplinary group that has been brought together to tackle an ongoing public health concern in your local area. None of the group members have worked together. The problem involved is a complex one that may require innovative solutions.

Write brief notes, with reference to relevant theory where appropriate, on:

(a) What action you would take to help you understand the (individual and collective) capacities of the group members.

(3 marks)

(b) Describe and apply one well known theory of group evolution or team development

(3 marks)

(c) Using a leadership theory of your choice explain how you would develop this group

(4 marks)

Key points

Actions to help understand group's capacities

In (a) candidates are being asked to demonstrate an understanding of the tools and theories that could be used to provide information and insight into the characters and capacities of a group of people who will work on a project and to discuss how these might be used to bring the group together.

This could be addressed through approaches such as the Myers-Briggs Type Indicator (which aims to give insight into psychological preferences and how people prefer to act – this would be relevant to understanding the individuals in the team) or the Belbin Team Inventory or (which aims to give insight into how a person will perform in a team environment – this would be relevant to understanding how the different people present might work as part of a team), or the People-Performance-Potential Model.

Marking guidance:

- To gain 0.5 mark would describe a method (unnamed) with insufficient clarity or detail
- To gain 1 mark would either name an indicator but the description would be weak, or would describe a method that makes sense and seems appropriate but is not otherwise named.
- To gain 1.5 marks would need to name one appropriate indicator and describe it and explain how useful it would be in reasonable detail.
- To gain 2-3 marks would need to name either more than one potential indicator and describe in reasonable detail its use, or describe one with excellent and appropriate detail how it could be used to good effect in the situation described

Description of group evolution

An example model that would be useful here would be Tuckman's Forming-Storming-Norming-Performing model, though other approaches are also pertinent, such as Adair's Action-Centred Leadership Model etc.

Marking guidance:

- To gain 0.5 mark would describe a model (unnamed) with insufficient clarity or detail
- To gain 1 mark would either name a model but the description would be weak, or would describe a model that makes sense and seems appropriate but is not otherwise named.
- To gain 1.5 marks would need to name one appropriate model and describe it and explain how useful it would be in reasonable detail.
- To gain 2-3 marks would need to name one model and describe it clearly showing how it could be applied in a clear and well-structured way.

Helping the group to develop

In response to (c) the final part of the question is important – it asks not just how the group could be helped to work but how it could be helped to develop. A leadership theory must also be named and described. There are a range of acceptable answers to this question and these might include reference to one or more of: brainstorming, identifying solutions based on play or art, away days, use of icebreakers, role-playing, playing games, and so on. A good answer describes pertinent activities and how they would bring creativity group.

An excellent answer to (c) would go beyond a listing of methods and would show an understanding of why creative approaches can be important (e.g. to help people think "outside of the box", to come up with innovative solutions to problems, to see beyond immediate constraints) as well as the fact that such approaches might be hard to implement (e.g. people don't like to go outside their psychological comfort change, are resistant to change, are fearful of negative consequences for suggesting or taking non-standard approaches).

Note: if Adair's action-centred leadership model is used in (b) and (c), answer (b) must focus on the elements of the model concerned with describing group behaviour, whilst (c) must focus on elements concerned with leading the group.

Marking guidance:

- To gain 0.5 mark would describe a method (unnamed) with insufficient clarity or detail
- To gain 1-1.5 marks would either name a leadership theory but the description would be weak and it would be poorly linked to the question posed, or would describe a method that makes sense and seems appropriate but is not otherwise named.
- To gain 2 marks would need to name one appropriate leadership model and describe it and explain how useful it would be in reasonable detail with clear linkage to developing the group in some way.
- To gain 3-4 marks would need to name one model and describe it clearly showing how it could be applied answering the question posed (i.e. leading to develop the group), answering in a clear and well-structured way.

Syllabus sections being examined:
5.a. Individuals, teams/groups and their development: barriers to, and stimulation of, creativity and innovation

Examiner comments

The question was open to a variety of approaches in that candidates could select a theory or tool rather than having to know a specific one. Candidates who went beyond reiterating the main points of a theory or tool by describing how they would use it in practice tended to do better.

In both question 9 and question 10, stronger candidates made clearer links between theory and practice, through which they were able to demonstrate their detailed understanding of the theories (and not just their ability to remember and reiterate a theory).

Stronger answers focused on one appropriate theory or tool in detail. Mentioning others for comparison was useful but trying to go into detail about more than one theory often led to less focused, and less well-structured answers and increased the risk of the candidate running out of time.

(a) The question asked about the "action you would take to understand the... capacities". Elements of answers that strayed from this and described means of helping the team to bond or work productively together gained no marks (but were not penalised).

(b) The question asked candidates to "describe and apply" a theory. The vast majority of candidates referred to Tuckman's "forming-storming-norming-performing" model or a variation on it. Candidates who described the theory but did not go into how it would be applied were awarded a maximum of 1.5 out of 3 marks for this part.

(c) Candidates were asked about using leadership 'to develop' the group and not just about how they would lead the group in more general terms. There was no right or wrong theory to use here and several different ones were used - no one approach was associated with better (or poorer) marks.

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

Question 10

You are responsible for delivery of a new public health strategy in your local area.

a)   For a named strategy write short notes on a management tool of your choice to help you understand the current situation. Your answer should consider why it is an appropriate and useful tool to apply in this context, and the tool's strengths and weaknesses.

(5 marks)

b)   Write short notes on one theory of change management to help you implement the strategy. Again, please consider why this is an appropriate theory to apply in this context, and the theory's strengths and weaknesses.

(5 marks)

Key points

(a) Management tool to determine current position

A strategy and setting must be named – without this it is hard to make sense of the rest of the answer.

One management tool or technique

- Name and set out a relevant tool or technique, of which there are many (such as Mckinseys 7S, Stakeholder analysis, SWOT or PEST analysis, Deming's Plan-Do-Check-Act, etc.) Candidates are expected to be able to identify a tool or technique that is relevant to the situation (strategy and setting) being addressed.
- Marks will be given for being able to name and describe such a tool or technique but also for being able to relate why this was appropriate to the situation, how it would contribute to implementation, and the strengths and drawbacks of this approach. In other words the specific tool or technique chosen is of less importance, in terms of answering the question, than being able to justify the use of that tool or technique in the context described.

Marking guidance:

- To gain 0.5-1.5 mark would describe a tool (unnamed) with insufficient clarity or detail and link poorly to a public health strategy
- To gain 2 marks would either name a tool but the description would be rather weak and it would be reasonably poorly linked to the current position, or they would describe a method of assessing the current position that makes sense and seems appropriate but is not otherwise named.
- To gain 2.5 marks would need to name one appropriate tool and an appropriate strategy. They need to describe the tool, its use in this context and how useful it would be in reasonable detail for assessing the current position.
- To gain 3-4 marks as for 2.5 but the description would be more detailed and the linkage between the tool and the assessment of the current position would be clearer with good structure to the answer.
- To gain 5 marks would need to do as for 4 marks, but include good critique of the tool in context of the assessment of the current position and its relevance to the strategy.

(b) Change management

One theory of change management and application:

Possible change management theories include Lewin's Three-Stage Model of Change, Gleicher's Formula or Roger's innovation adoption curve, Kotter's Eight-Step Model, the Change Curve (Kübler-Ross), Nudge theory and choice architecture (as applied to change management).

Critique this change management theory in the context of the chosen strategy and setting – that is, to apply the change management theory to this context, recognising potential advantages, disadvantages, and so on. Central to answering this question is not only being able to name and describe an appropriate theory but being able to relate this to the chosen context in a way that demonstrates knowledge and understanding of theory as well as an awareness of how to turn theory into practical change.

Marking guidance:

- To gain 0.5-1 mark would describe a theory (unnamed) with insufficient clarity or detail and link poorly to a public health strategy
- To gain 1.5-2 marks would either name a theory but the description would be weak and it would be poorly linked to the question posed, or would describe a method that makes sense and seems appropriate but is not otherwise named.
- To gain 2.5 marks would need to name one appropriate theory and describe it and explain how useful it would be in reasonable detail with clear linkage to a relevant public health strategy.
- To gain 3-4 marks would need to name one appropriate theory and describe it and explain how useful it would be in good detail with clear linkage to a relevant public health strategy.
- To gain 5 marks would need to do as for 4 marks, but include good critique of the change theory in context of the strategy described.

Examiner Comments

(see general comments under question 9)

In section (a), a maximum of 2.5 marks was given for answers that described a tool and how the elements of it fitted the named strategy (e.g. spelling out the elements of DEPESTELI) but not justifying the use of that particular tool.

Candidates who did not name a strategy were not penalised directly but were likely to score more poorly because they were not able to answer the question fully. For example, it is not possible to specify why the tool is "appropriate and useful... in this context" if no context is named. Some candidates did not name a strategy but related the tool to public health strategies in general. This approach was marked on merit but tended to score less well than those in which a strategy was specified. Some candidates gave generic justifications for the use of a specific tool, such as "X is an appropriate tool here because it is suited to use in complicated situations" or "...because it has been extensively used to assess the current situation in many organisations" or "...because it has been designed for use in health organisations". None of these justifications were sufficient to answer the question - for this it was necessary to relate the tool to specific aspects of the strategy and context, e.g. "because a strategy to reduce domestic violence involves partners from across organisations and sectors and X allows us to take their widely varying perspectives into account".

In (b) a wide range of approaches was taken, but candidates who used a theory that did not relate to change management (e.g. that related simply to analysing and not to changing a situation) received lower marks.

Paper IIA - January 2017

Following concerns about **high rates of smoking** in pregnant women in your health district, the paper below is brought to your attention:

Tappin D et al. Financial incentives for smoking cessation in pregnancy: randomised controlled trial. BMJ 2015;350:h134

Note to candidates: This paper has been reduced in length by removing:
- The abstract
- Sections of the discussion including the strengths, limitations and the conclusions
- Box entitled "What is already known on this subject"
- Box entitled "What this study adds"

1. In approximately 600 words, summarize the study's findings and its strengths and limitations.

(40% of marks)

2. Describe the elements required to calculate a sample size for a trial such as this. What is the effect on the power of this study of having a higher than expected quit rate in the control group (8.6% rather than 4%)?

(10% of marks)

3. You are asked to set up a group to consider the implementation of a similar incentives scheme in your public health locality and undertake an evaluation to assess its impact. Describe who you would invite as group members and what areas of discussion you would intend to cover in the first meeting.

(25% of marks)

4. A politician on the local health committee hears about the study findings and writes to you to question the possible use of public funds as financial incentives to persuade pregnant women to stop smoking. Draft an appropriate reply.

(25% of marks)

Key points

1. In approximately 600 words, summarize the study's findings and its strengths and limitations.

<div align="right">(40% of marks)</div>

Findings:
- Significantly more smokers in the incentives group than control group stopped smoking: primary outcome 69 (22.5%) versus 26 (8.6%).
- This appeared to be sustained to 6 months post-natal (12 months from quit date) 15% versus 4%.
- The relative risk of not smoking at the end of pregnancy was 2.63 (95% CI 1.73 to 4.01) P<0.001.
- The absolute risk difference was 14.0% (95% CI 8.2% to 19.7%).
- The number needed to treat was 7.2 (95% CI 5.1 to 12.2).
- The mean birth weight (a secondary outcome) was 3140 g (SD 600 g) in the incentives group and 3120 (SD 590) g in the control group (P=0.67).
- The short term incremental cost per quitter at 34-38 weeks' gestation was £1127, and longer term cost per quality adjusted life year gained was £482.14, well below the UK NHS threshold of £30,000.

Strengths:
- The study was conducted as a phase II randomised controlled trial with analysis by intention to treat.
- The sample size was relative large for a phase II trial although it was not clear whether the sample size calculation was done post-hoc given that it equalled the number of available women and because of the phrasing of the description (this could be listed under the weakness section).
- The groups were balanced with respect to most variables, except nicotine dependency, although adjustment for this in the analysis made no material difference.
- Objective measures of smoking were used (measures of carbon monoxide and cotinine) not just self-report.
- Objective measures of smoking status were obtained before the incentive was given
- Attrition in the intervention group and control group was similar.
- Measures of smoking independent of participation were obtained for a sample of women by measuring cotinine in residual blood samples at the end of pregnancy. The results gave support for the assumption that those lost to follow up in both groups were smokers.
- Effects of 'gaming' controlled for by visit from research nurse and use of routinely collected blood samples in late pregnancy.

Limitations:
- There is a question as to how representative of the local population the study participants were as a large proportion in both groups were from most deprived quintile, however, this is not that surprising since smoking is strongly associated with social deprivation.
- As this was a single centre trial it is not clear that the findings are generalizable, however, since this is a phase II trial this is a relative limitation. A full phase III multi-centre trial would need to be conducted before there is sufficient evidence to roll this out fully.
- The control group appeared to be more nicotine dependant/heavier smokers and more likely to have a partner who smoked therefore may have had greater difficulty in giving up. This is a little surprising since randomisation should result in balanced groups, although this may be a consequence of the fact that there were only 306 in each arm which is because it was a phase II not a phase III trial – so although large for a phase II trial it is not a large phase III trial. In fact adjustment for nicotine dependency did not affect the results.

- Of the potentially eligible group of smokers only 20% were recruited into the trial.
- High loss to follow up in both groups.

Marking guidance:

Question 1: (out of 20 marks)

1-6 marks: few findings or too many less relevant findings with few appropriate strengths or limitations identified

7-9 marks: 3 findings, 2-4 strengths and at least one well delineated limitation and one or more poorly described limitations. May have more findings, more strengths or more limitations but totality is generally insufficiently clear, and insufficiently succinct.

10 marks: Structured as Findings, Strengths, and Limitations (in any order) with 4+ findings (generally well described), 4 clear strengths identified within list or suitable alternatives and 2 limitations well delineated (or 3 more briefly described).

11-13 marks: More findings, strengths and limitations (11-15 in total) than stated for 10 marks, well described

14-16 marks: Most key points (16+) key points identified (or suitable alternatives), succinctly and clearly described

17-20 marks: 17-20 key points (or suitable alternatives), succinctly and clearly described

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2. Describe the elements required to calculate a sample size for a trial such as this. What is the effect on the power of this study of having a higher than expected quit rate in the control group (8.6% rather than 4%)?

(10% of marks)

Elements required:

- Expected effect size
- Significance level (usually set at 0.05) also referred to as *Alpha*
- Power (also referred to as 1-Beta) generally set at 90%
- If the control group event rate is higher than expected, this would have been expected to decrease the power

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Marking guidance:

Question 2: (out of 5 marks)

1 mark: reasonably detailed

2 marks: 2 out of 4 bullets reasonably described

2.5 marks: 3 out of 4 bullets reasonably described

3-4 marks: 3-4 bullets well described (clear)

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3. You are asked to set up a group to consider the implementation of a similar incentives scheme in your public health locality and undertake an evaluation to assess its impact. Describe who you would invite as group members and what areas of discussion would intend to cover in the first meeting?

(25% of marks)

Group members:
- In addition to public health specialist, invite representatives from:
- Maternity services
- Public health information/intelligence
- Health promotion
- Finance
- Media liaison
- A health economist
- The specialist NHS stop smoking service
- Maternity services commissioners

Topics for discussion
- Health effects of smoking in pregnancy
- Summary of the Tappin et al. paper
- Evidence from other papers on this subject
- Socio-economic composition of locality population and its comparison, or otherwise, with the paper's subject population.
- Prevalence of smoking in pregnancy in locality population
- Pregnancy stop smoking services available
- Locality public perceptions of use of financial incentives
- Potential sources of funding
- Feasibility of the study in the locality
- An evaluation framework
- To proceed or otherwis

Marking guidance:

Question 3: (out of 12.5 marks)

1-2 marks: may list group some group members but topic list very poorly formulated and described

3-5 marks: four or more group members and four topics with insufficient detail (or more group members, and fewer topics with insufficient detail)

6 marks: majority of group members and 5 topics with reasonable clarity/detail

7 marks: majority of group members and six topics with reasonable clarity/detail

8-10 marks: most or all appropriate members and 7-9 topics with reasonable clarity/detail, or fewer topics but very good clarity

11-12.5 marks: all appropriate members and 10+ topics clearly described

4. A politician on the local health committee hears about the study findings and writes to you to question the possible use of public funds as financial incentives to persuade pregnant women to stop smoking. Draft an appropriate reply.

(25% of marks)

Non patronising response to intelligent lay person covering:
- Health effects of smoking in pregnancy and the importance of reducing smoking in general and specifically in pregnancy
- The prevalence of smoking in pregnancy in your public health locality area
- Summary of the findings in Tappin et al. paper
- Socio-economic gradient in smoking therefore financial incentives may be more effective in areas with raised smoking prevalence
- In addition to being effective (in this study) incentives also cost effective in terms of QALYs gained, with explanation of this.
- Further studies needed to confirm or otherwise findings of Tappin et al. paper and if undertaken locally, would not necessarily lead to permanent funding of incentive scheme.
- Other short term sources of funding are being investigated.
- Willing to keep the politician informed of further developments

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Marking guidance:

Question 4: (out of 12.5 marks)

1-2 marks: either far too much information or far too little relevant information, not clearly described

3-5 marks: 3-4 items of relevant information but poor clarity for the specified audience

6 marks: 5+ items of relevant information but poor clarity for the specified audience

7 marks: generally clear response, somewhat over-detailed in places, with 5+ bullets (or other relevant points)

8-10 marks: good clear response with 6-7 bullets (or other relevant points), appropriately tailored message

11-12.5 marks: excellent response with all bullets, appropriately tailored message

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Examiner Comments

There were neither outstanding candidates, nor any really bad fails. Most were around the pass mark. Most answered question 2 well.

Many candidates in answering Q1 described the study, but not the findings and often rewrote what was in the paper rather than their interpretation of the paper, failing to summarise the key findings.

A significant proportion of candidates went over the 600 word limit (at least one candidate appeared to use over 2000 words). Examiners did not penalise this at this sitting, but from June examiners in this section will do so.

Candidates also often gave generalised statements without giving a reason why, or interpreting statements – e.g. "a sample size calculation was done" rather than including mention of whether appropriate factors were used for its calculation etc.

As with previous sittings candidates are advised to summarise, and can use clear, concise bullet points where appropriate. They are advised to interpret study methods and findings rather than simply describing them.

Paper IIB – Examiner Comments

The performance of the majority of candidates was good. Handwriting of most candidates was generally easy to read (but not all).

Short questions which required only brief (one sentence) answers, and/or brief calculations were answered particularly well. Questions needing more detailed calculations or more detailed discussion were not done as well, in general.

Candidates are advised to spend time taking care to understand the question asked, then to plan their answer where a more detailed response is required, showing all relevant steps in their calculations. Candidates who did not provide any calculation steps/workings risked losing all marks available for that part of a question if their answer was incorrect.

Wherever possible candidates should try to be specific, write clearly in a structured fashion, and write to the point.