

FPH Part A Examination

January 2015 Key Points and Examiners' Comments

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 chair's comments. Sections of the syllabus being tested are included and indicate the **main** part of the syllabus being tested.

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>

Summary statistics for the sitting are included on the FPH website.

Paper IA

Section A - Research methods

Question 1

Explain the following terms used in randomised controlled trials and illustrate your answer with one practical example for each term.

- a) Cluster randomisation (40% of marks)
- b) Crossover design (30% marks)
- c) Intention to treat (30% of marks)

KEY POINTS

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

(a)

Explanation:

- Involves randomisation of clusters (groups) of participants as opposed to individuals
- Used to reduce contamination between control and intervention participants
- Some interventions may only be delivered at population rather than individual level (e.g. health promotion campaigns)

One practical example:

- One possible example might be randomising schools in a trial of an intervention to reduce childhood obesity that was administered at school level and would be hard to deliver to individual pupils with contamination of controls.

(b)

Explanation:

- Crossover design is a method of comparing two or more interventions, in which treatment and control groups are switched partway through the trial.
- This enables each patient to be their own control, ensuring that treatment and control groups are identical.
- There may need to be a wash out period before starting the second phase of treatment.

One practical example e.g use of topical skin cream and placebo for a skin condition and monitoring symptoms and appearance

(c)

Explanation:

- Intention to treat (ITT) describes an approach to analysis in which subjects in a randomised controlled trial have been analysed in the group they were originally randomised to, irrespective of the actual treatment that they subsequently received.
- This is important because should patients actually receive a different treatment and be analysed as such, or not be compliant with the treatment and excluded from the analysis, this essentially breaks randomisation introducing potential for selection bias and/or confounding.

One practical example e.g. comparison of chemotherapy regimes on advanced ovarian cancer and measuring e.g. 1 year survival by ITT.

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

(a) Clusters would need to be allowed for in the analysis and that the sample size would need to be larger, as the cluster rather than the individual participant is the unit of analysis.

(b) Crossover design is only suitable for interventions where the therapeutic effect is fairly rapid in onset and disappears rapidly after cessation. Sample size can be smaller due to reduced variation between participants as participants are acting as their own control. Half the subjects are randomly allocated to receive the intervention and control in one order, and half to receive them in the other order.

(c) ITT would be the usual approach to analysis in an effectiveness study as in practice, patients may not comply with treatment or be given a different treatment and it is felt that an ITT analysis provides a better reflection of the magnitude of effect of the intervention in real-life. Per protocol analysis is the alternative approach, where participants are analysed according to the treatment they actually received.

Area of syllabus being assessed includes: 1a RCT design, intention to treat analysis, clustered data

Examiners' comments

This question was generally well answered. Good candidates stated that cluster randomisation trials and cross-over trials may be the only/best possible methods for some research questions. Although most cited relevant examples, a significant proportion did not fully understand the strengths and weaknesses of both methods. Almost all candidates knew about 'Intention to Treat' and its relevance but only a few noted that 'per protocol' results provide the best estimate of the efficacy of the intervention and could be presented in addition with ITT results.

The commonest shortcoming was that several candidates did not understand cross-over study designs.

Chair's comment

When preparing for questions on study design and research methods, it is useful to practice giving succinct definitions and be able to demonstrate application of theoretical knowledge with practical examples.

Question 2

Your local council plans to survey the local population to investigate the use of its park facilities.

- a) Describe possible strategies for sampling the population and their strengths and weaknesses. (50% of marks)
- b) Describe the types of questions to include in the questionnaire. (40% of marks)
- c) When designing a questionnaire, what considerations should be taken into account regarding the number and order of questions? (10% of marks)

KEY POINTS

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

- a) Possible sampling strategies include:
- Population random sampling: this requires an accurate population register with addresses, or phone numbers for a phone survey. Phone records are frequently incomplete due to ex-directory numbers and mobile phone use. A random sample is then drawn from this register. Advantages include that such a sample should be representative of the population. For postal or phone surveys this is suitable. For face-to-face surveys this may involve significant travelling, as the sample will be distributed across the district sampled, and a cluster sampling approach may be preferable. Online electronic surveys may miss the populations without internet access.
 - Cluster sampling: this technique chooses specific areas and samples randomly within those areas. This is efficient for travel purposes, but the clustering needs to be adjusted for in analyses and the sample may over-represent certain groups.
 - Systematic / consecutive sampling: this is not random, but is convenient and cheap. It may involve visiting all houses in a given street etc. It should be avoided if a representative population view is sought, but it is appropriate if a purposive sample is required, for example to ask adjacent residents about noise from a park, or to survey early morning dog walkers about facilities for dogs.
- b) Questions can be closed or open. Closed questions refer to questions where all answers are provided in the answer choices given. For closed questions these must be clear and straight-forward, and not ambiguous or biased and have a full range of responses provided for the participants. Questions should be short in length and should consider only one topic. For instance:

“Do you like walking or running in the park? – yes/no”: – this combines two questions, and a participant who likes walking but not running may be confused. This question would be better divided in to two questions:

- “Do you like walking in the park? – yes/no”
- “Do you like running in the park? – yes/no”

Answer choices should cover all possible options, for instance:
“How often do you use the park? - daily / weekly / monthly”

is incomplete, as some respondents may use the park less frequently than monthly, or never use the park.

For certain answers, scaled responses such as a Likert Scale can be provided, for example:

“Do you consider the park’s facilities to be? -

Very poor --- Poor --- Adequate --- Good --- Very good”

- c) Questionnaires should start with simple questions, and move to harder topics as they progress. The questionnaire should be appropriately ordered (i.e. group topics together). Wherever possible potentially difficult, or embarrassing questions should be placed at the end of a questionnaire. Demographic questions are usually asked at the end. Questionnaires should be kept as brief as possible to maximise response rate. Closed questions should be asked before open ended (free text) questions. Core questions to achieve the survey objectives should be asked before other questions capturing additional/optional data (or after respondents asked to confirm they are happy to answer them at same time or later date).

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

- a) Stratified sampling: this divides the population in to certain categories and can ensure that your sample is representative of these different categories, for example older people. This is only possible if the category that you stratify is well characterised/recorded.

Sampling of addresses from electoral register or similar would exclude homeless people who may be regular park users. Electoral register is no longer a complete record as residents may opt to not have their address included in the published register.

- b) Questions could be based on data provided from a small qualitative study (either interviews or focus groups) to identify key issues in park use.

(b/c) Piloting the final draft questionnaire on a small sample of users is very important to identify gaps, problematic questions.

Self-administered, anonymous questionnaires (post or electronic) may be cheaper to administer than interviewer based surveys (post or in person).

Area of syllabus being assessed includes: 1a method of sampling from a population, construction of valid questionnaires.

Examiners’ comments

This was well answered by most candidates. Some candidates wrote proportionately too much on section a, worth 50% of the marks and hence scored poorly on sections b and c. Most candidates wrote well-structured answers and provided a good overview of various sampling strategies from a theoretical point of view. However, only a few candidates applied the methods to the context of the question.

Chair’s comment

Candidates should demonstrate their understanding of the concepts by applying their theoretical knowledge in the context of the question. Perhaps a good question to ask yourself when answering questions such as this is: “how can my answer demonstrate a good balance of both theoretical knowledge (*in this case questionnaire design sampling and question type principles*) and application?” (*in this case the use of park facilities by a local population provided by a local council*)

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

Question 3

You are responsible for public health in an rural area with a population of 250,000. The local "Accident Prevention Task Force" has asked for your advice in developing an accident reduction programme targeted at children under 16 years old. For a named country, outline what advice you would give to the Task Force on the development and implementation of the programme. Illustrate your answer with examples.

KEY POINTS

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

Development and implementation of the programme

Discussion of which agencies to involve in the needs assessment and implementation

Discussion of public participation approaches and importance of lobbying.

Discussion of the necessary elements of effective implementation including ideally, evaluation.

Providing context of e.g. national/local priorities and standards, political environment

Development and implementation should be informed by:

Needs assessment. Discussion of epidemiology (time, place, person). In younger people, traffic accidents, fires, choking and falls are important causes of death as well as specific rural hazards, such as agricultural accidents caused by the fact that children may well live close to hazardous equipment and facilities. The association between childhood accidents and deprivation.

Models of health promotion. Use of a recognised health promotion framework to discuss the importance of community action, the importance of recognising the source of danger and creating safer environments, the role of policy to encourage alternative safer choices eg public transport, as well as the action individual children and families can take themselves.

Discussion of the evidence to justify interventions

Educational measures alone do not have a significantly measurable impact upon accidental injury rates. Engineering measures that create safer environments can be effective (eg traffic calming measures, providing window locks to those living in high rise housing). Separating children from farm hazards as far as possible (eg separate play areas to discourage contact with dangerous machinery, animals, facilities such as slurry tanks). Legislation requiring safety protection (e.g. restraints in vehicles, child resistant packaging of harmful products). Enforcement of existing regulations is also important (eg. Speeding near school areas, drunk driving, fire safety checks and drills)

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

Reference to sources of information and needs assessment eg home accident surveillance, special surveys.

Evidence based advice. International studies indicate that community wide initiatives that embrace a range of initiatives and multi-agency community involvement can have an impact upon accident rates.

Include description of at least one type of accident.

Include advice on evaluation of effectiveness of interventions

Area of syllabus being assessed includes: 2h with some reference to 2b (disease epidemiology- in this case accidents)

Examiners' comments

Many candidates did not do well on this question. The answers were too general. Relevance to the rural setting and in a particular country was lacking.

Most candidates included checking the national priorities and standards, checking the political environment.

Candidates who performed well described the epidemiology of accidents in a population of children under 16 in a rural area to underpin their answer. Good candidates used a recognised health promotion framework to identify specific interventions known to reduce mortality and morbidity from accidents in children under 16 years. The road safety framework 'Education, Enforcement, Engineering' was used effectively by some candidates to discuss interventions to reduce Road Traffic Accidents. Good answers recognised that a multi-agency, multi-faceted approach is necessary to reduce accident rates including active community involvement.

As mentioned above, some candidates produced answers that were too generic. Only a minority discussed the health promotion models/framework. Many did not use examples to illustrate the answer.

A number of candidates gave a well-structured description of needs assessment methodology and / or the development and implementation of a strategic plan but did not relate it to reducing accidents in children under 16 years.

There is a tendency for candidates to just state the key words without defining what they mean and giving adequate elaboration on how they are relevant to the question. It seems that time management might be a problem as many candidates gave poorly structured sentences towards the end of the answer. Some candidates included a lot of application of health information in their question (section 3c of the syllabus) and /or a lot of the theory and process of strategy development (section 5d of the syllabus)

Chair's comment

Candidates should plan the framework of the answer and suitably allocate time to writing it up. The section heading of the syllabus being assessed is included at the top of each page of the examination question paper e.g. questions 3 and 4 are from the "disease causation, prevention and health promotion" section of the syllabus. This indicates the perspective within which the answer should be predominantly framed.

Question 4

In a named country, describe the rationale for and limitations of having a national cervical cancer screening programme.

KEY POINTS

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

Features relevant to screening (reference to Wilson and Jungner criteria or National Screening Committee criteria):

The condition (disease)

Cancer of the cervix is a disease of older women, common in developing countries but less common in developed countries. Rates in northern Europe, including UK, are higher than in southern Europe.

In most western countries rates have declined in recent decades, even in countries without systematic screening programmes.

Important health problem. Although the prevalence in western countries is not high, the disease, if diagnosed late, is associated with exceptional morbidity and high case fatality, and can occur in young women.

Natural history. Current screening depends on the fact that invasive carcinomas are usually preceded by an asymptomatic pre-invasive stage lasting a number of years (cervical intraepithelial neoplasia, CIN), that a significant proportion of women with CIN would eventually develop invasive cancer if not treated, and that the disease is usually preventable by treatment during the CIN phase.

Potential limitation: Regression can occur at all stages, but more frequent in low grade lesions; it is not possible to identify which ones will progress and which will regress.

Recognisable early stage and benefit from early treatment.

Now known to be related to HPV infection which can be prevented by HPV vaccination

The Test

Suitable, safe test. CIN is detectable by smear test. Estimates of sensitivity vary from moderate to high.

Potential limitation: Specificity for low grade lesions is low because of possibility of regression of these lesions (therefore a potential for overtreatment). Positive predictive values low due to the low prevalence of disease and low specificity of the test.

Potential limitations: False positives. False negatives.

Acceptability of current test. **Limitation** The acceptability has traditionally been lowest in those most at risk ie. older women and low income groups. But efforts are being made to increase acceptability through education.

Quality assurance. Diagnosis test is colposcopy and biopsy

Currently still based on cervical smears but pilots for HPV testing model.

Treatment

Effective treatment is available in accordance with agreed guidelines

Treatment of pre-invasive lesions leads to almost 100% survival associated with minimal morbidity.

Limitation e.g where unscreened or false negative. Treatment at later stages is associated with lower survival and far greater morbidity.

The programme

Health economics; Ethics; Evaluation

Age range and frequency of screening

Uptake and coverage

Reasons for screening programme failures

As cohort of girls who have received HPV vaccine ages, model of screening will have to change.

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

Indication of size of the problem: e.g In the UK, approximately 1,500 deaths per annum, 2% of all female cancer deaths, crude mortality rate 5.7/100,000).

Natural history: The exact progression pattern from CIN to invasive carcinoma is not known (observation of natural history without treatment not ethical). But risk of progression for high grade lesions (CIN III) is higher than for lower grade lesions (CIN 0 or CIN I).

Screening interval: The screening is determined by progression rates for the disease. Shorter intervals are associated with increased reductions in cancer incidence but greater cost, both financial and psychological, due to increased proportions of false positives. Reference to possible alteration of screening interval in women who have received HPV vaccine.

Age criteria for screening: should be based on disease epidemiology but likely to cause demand for screening outside age cohort (especially if high-profile deaths in those outside screened cohort)

HPV vaccine promoted as anti-cancer vaccine so potential for screening uptake rates to drop in vaccinated women. A substantial drop in screening uptake might limit the population level effectiveness of the programme.

Examiners' comments

Candidates generally gave comprehensive answers using the Wilson and Jungner criteria to structure their answer, making reference to them throughout their answer. Many candidates described the HPV vaccination scheme and discussed its potential impact on national cervical cancer screening programmes. Good candidates provided an in depth analysis of the rationale and limitations of a national cervical cancer screening programme

However, a number of candidates simply stated the facts of a cervical screening programme without elaborating on the rationale and limitations.

Some candidates appeared to struggle with time with a tendency to only state the key words without giving adequate elaboration on the points and writing poorly structured sentences towards the end of the answer.

Chair's comment

Candidates should plan the framework of the answer and suitably allocate time to writing it up. Be familiar, using Wilson and Jungner (or other recognised and established screening programme criteria) of the rationale for and limitations of specific common screening programmes. This *might* include consideration and brief comment on the potential impact on the screening programme by other prevention or treatment developments (e.g. in this case HPV testing and immunisation).

Section C – Health information

Question 5

Some countries are considering moving away from taking a regular census of the population to using routine sources of administrative data* to generate population statistics.

- (a) In a named country of your choice identify some of the potential sources of routinely collected administrative* data that could be used to take the place of a periodic census.

(40% of marks)

- (b) Briefly discuss the advantages and disadvantages of these routinely collected administrative data to generate population level statistics.

(60% of marks)

*Administrative Data Definition

The source of data being administrative records rather than direct contact with respondents.

KEY POINTS

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

(A) Potential sources of administrative data that could be used to take the place of a periodic census:

- people who are registered with a doctor (either national and/or local health registers)
- people who contribute to the national taxation system
- people who are registered on national or local insurance, social security, benefits, pension systems
- those registered with a local council (local residency, local taxes, electoral and voting systems)
- records of children and young adults who are in school or higher education

Ad-hoc or regular population surveys are **NOT** classed as administrative data and will not get a mark.

(B) Briefly discuss the advantages and disadvantages of these routine sources of administrative data to generate population level statistics:

Advantages of the use of routine data sources to generate population level statistics:

- statistics would be based on continually updated sources, so it is possible to generate population counts by age and sex on an annual or more frequent basis
- annual outputs would allow changes such as growth in population or migration to be identified much more quickly than is possible with a periodic census
- the re-use of data that is already being collected means that this approach would cost less than a periodic census, although there would be costs of carrying out annual surveys to collect social data
- data about individual people can be inexpensively extracted from existing routine administrative systems and record linked to create a single population statistics database

Disadvantages of the use of routine data sources to generate population level statistics:

- routine data sources would not provide the detailed social, housing, health and economic information that can be provided by a periodic census

- an annual survey would be needed to provide additional information on social characteristics
- for social characteristics, an annual sample survey of the population may not provide accurate statistics for small areas and for some topics several years of survey data may need to be combined
- new legislation would be required for approaches using administrative data and surveys, to give access to the required data and to make surveys compulsory
- unique identifiers are required to avoid double-counting individuals

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

- local administrative registers are already used in many countries for population statistics
- a secure statistical environment would be needed to overcome public concerns about confidentiality
- harmonisation of definitions of routine data sources may be difficult to achieve
- some population groups (e.g. people in communal establishments) are under-represented in routine data sources and information would need to be enriched by compulsory annual sample surveys
- this approach would result in the loss of the detailed historical record of people and households used by family historians and other historical researchers
- use of linked data

Area of syllabus being assessed includes: 3a collection of routine information and an understanding of conduct of censuses, 3b biases and artefacts in population data 3c Use of information for health service planning and evaluation.

Examiners’ Comments

Most candidates are quite good on the administrative data sources but some were relatively weaker on the second part of the question, although nearly all candidates managed at least some discussion of the advantages and disadvantages. Those that performed well could demonstrate their awareness and understanding of demography.

Although most candidates were able to identify the relevant administrative data sources, some struggled to discuss how these sources could then be used to generate population statistics. A few candidates focused their answers on how to use birth, death and migration systems to produce population estimates between censuses, which was not what the question was asking for. Relatively few candidates considered information governance implications.

A surprising number of candidates did not seem to understand the phrase “generate population statistics”. Many seemed unaware that countries are seeking alternatives to a decennial census, and were unfamiliar with the approaches that countries are considering. A few candidates just wrote down very long lists of different data sources, most of which had little or no relevance to population demography. A few focused solely on birth and death registration systems.

Chair's comment

Develop a greater familiarity with current issues in population statistics. The scope and interest of public health in population statistics is wider than census-based estimation and projection. If asked for possible sources of data (unless a specific number of sources requested) and advantages and disadvantages, try to give a reasonable number of sources. As described above - too few (1 or 2) and the answer is likely to be too narrow to score well. Too many, in a scattergun approach, is likely to provide a very cursory or irrelevant response. Four or five sources of information with considered discussion of advantages and disadvantages is probably a reasonable general guide to answering similar questions.

Question 6

a) List two differences in the occupational characteristics of people who live in developing countries compared to developed countries.

(20% of marks)

b) Describe five routine sources of information about health at work

(50% of marks)

c) Define proportional mortality ratio (PMR) and explain its use in measuring occupational mortality

(30% of marks)

KEY POINTS

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

a) List two differences in the occupational characteristics of people who live in developing countries compared to developed countries. **Any two of the following:**

- exposure to hazards in manufacturing industries (e.g. chemical or carcinogen exposure, traumatic injuries)
- standards and systems for the protection of workers (e.g. unsafe work practices, engineering controls, elimination or substitution, monitoring systems, personal protective equipment, minimum wage)
- characteristics of the workforce (e.g. use of children, retirement age, gender, educational attainment, cultural expectations)
- occupational health (e.g. health assessment, treatment and rehabilitation, job modification)
- types of occupation (e.g. sedentary, office, manual, subsistence)

b) Describe five routine sources of information about health at work. **Any five of the following:**

Employment related demographic information

- Size and characteristics of the workforce – age, sex, proportion employed by age and sex, type of employment by age and sex. In the UK, this may be obtained from the **Census, General Household Survey** or the **Labour Force Survey**. In Hong Kong, the first two sources apply
- Other sources of data about the workforce may include trade union statistics, although these may not be comprehensive or representative

Employment related mortality data

- In the UK, occupation is registered at time of death, but this may not reflect occupational exposures to risk factors in earlier occupations

- The ONS Longitudinal Study in England and Wales is a cohort study examining risks of death by occupation as recorded in each Census
- The source of mortality data is under the Labour Department in Hong Kong (there is no equivalent survey in Hong Kong)

Employment related morbidity data

- **Sickness absence records.** Sickness absence is not a good indicator of ill health. People may feign illness, people may fear to admit to illness for fear of losing their job, and people may be willing to put up with ill health in order to keep a job, particularly seasonal or casual workers. Nevertheless, data about the reason for being off work (e.g. for back pain and repetitive strain injury) can be indicative of attention to workplace safety and ergonomics
- **Occupational diseases and injuries registers.** In Hong Kong, pneumoconiosis (silicosis and asbestosis) register and register for noise induced hearing loss – both for compensation purposes. Occupational injuries registration may be a statutory reporting system
- **Ill-health retirement, and compensated illness pensions**
- **Incidents of release of toxic or hazardous substances** may be recorded. These statistics are often incomplete. In the UK, responsibility for health and safety in the workplace falls under the Health and Safety Executive. In Hong Kong, this is under the Labour Department

NO MARKS GIVEN FOR General Practice records, hospital records, or referral rates to specialist services, as information about occupation is usually absent or incomplete in these records.

c) Define proportional mortality ratio (PMR) and explain its use in measuring occupational mortality

A **proportional mortality ratio** measures the proportion of deaths occurring from a given cause for a particular occupation relative to the proportion of deaths from that cause in the whole population (or a comparison population)

- A PMR is based on the underlying cause of death as recorded on the death certificate and provides little information about diseases that cause high morbidity but which are rarely fatal
- Occupational information usually relates to the deceased person's last full-time job, but other jobs undertaken earlier in their career may be of more relevance
- The PMR is not a population-based rate, and so it can be used to measure mortality where no denominator is available about the number of people who work in an occupation
- The PMR of an occupational group for a specific cause depends not only on its death rate from the cause in question, but also on its death rate from all causes combined. This may be of relevance where an occupational group has particularly high or low

mortality from the most common causes of death. As it is a proportional measure, the PMR can be raised in situations where the frequency of other causes of death is low

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

Developing countries have less robust controls on the use of child labour and may not monitor the work of children.

Mention of statutory educational requirements for young people, including use of apprenticeships, job training programmes, and work that includes part-time study for an accredited qualification.

Giving examples of how health and safety regulations protect workers, e.g. by giving clear limits to exposure from chemicals, the provision of specific hazard monitoring systems, and types of personal protective equipment.

Giving examples of occupational groups that have high or low PMRs, and showing the reasons for this including levels of workplace exposure to specific risk factors.

Area of syllabus tested includes: 3a differences in populations including occupation, 3b rates and ratios to measure health status including occupational, 3c the strengths, uses, interpretation and limitations of routine health.

Examiners' comments

The question was straightforward. The majority of candidates were able to list two differences in the occupational characteristics of people in developing countries compared to developed countries. Quite a number of candidates could not mention five routine sources of information about health at work. Many listed a variety of primary care and hospital sources, without appreciating that these systems do not routinely report information about health at work and that occupation is generally not well recorded by clinicians in primary care and emergency departments. Several candidates listed these sources but then commented that they did not know if they could be used to assess health at work.

Only a minority of candidates could accurately define a proportional mortality ratio. The remainder offered a wide range of incorrect answers.

Occupation is one of the key determinants of health. Public health trainees should be able to discuss how health at work can be measured using routine information systems.

Chair's comment

Candidates need to be personally familiar with the main health information systems. This means finding out about the processes that these systems use to capture data, understanding how data are recorded, and knowing the main ways in which routine outputs are published from these systems.

Paper IB

Section D – Medical sociology, social policy and health economics

This section contains two equally weighted questions (7 and 8) which will be marked independently of each other.

Both questions **7 and 8** relate to the following statements.

In health care, policy decisions include:

- I. How much to spend on health care.
- II. How best to provide health services.
- III. Distribution of health services.

Health economics and sociology have much to contribute to these decisions.

Question 7

Discuss the above statements from a sociological perspective.

KEY POINTS

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

A discussion, in relation to the statements and contribution to decisions, from a sociological perspective of at least three of the following:

- Concepts of health and social justice
- Inequality eg by gender, ethnicity, class, geographical access.
- Consumerism and community participation
- Health care as a social construct
- The role of healthcare in society
- Public provision v private provision

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

- Appropriate use of named sociological theories. Examples might include but not be limited to perspectives described by Illich, Giddens etc.
- Acceptance/understanding that these are essentially political decisions to which an understanding of sociology can contribute, but is not the sole determinant.

Area of Syllabus being assessed: 4c Equality, equity and policy – in particular concepts of need and social justice, priorities and rationing, balancing equity and efficiency, prioritisation and equity of service provision.

Examiners' comments

These questions were relatively straightforward and should have scored high marks. Many answers were disappointing. Many candidates simply stated a number of theories or concepts, with little depth of explanation or attempt to link these concepts to the question. Many candidates did not answer in essay format.

Answers tended to be better when the essay was structured around the three points given in the question. Better answers were written clearly and had been proofread by the candidate. When mentioning a named sociological theorist, candidates tended to fail to explain how the theory related to the question needing to be answered. Good time management was crucial. While there were no excellent answers, passing answers showed that the candidate had an understanding of sociology and sociological theories.

Candidates who scored poorly on this question seemed to have limited question answering techniques. Many candidates simply named a sociological concept and did not specifically relate it to the question being asked. Candidates failed to demonstrate an insightful and basic mastery of the topic and/or included a lot of irrelevant material. Some candidates simply failed to answer the question: candidates may have defined the terms being used but failed to relate it to the question needing to be answered.

Few explicitly mentioned health as a social construct, the role of health in society or consumerism and community participation.

The standard would be raised significantly with better preparation and taking the time to reflect on the question being asked.

Candidates did not appear to misinterpret the question and did not overlap their answers with question 8

Chair's comment

This section of the paper (medical sociology, social policy and health economics) is often a section candidates appear to find difficult. Candidates should be familiar with the concepts outlined in the Part A syllabus

Reading widely and discussing current issues affecting public health and policies e.g alcohol, ageing and unemployment from a sociological and economic perspective as well as knowing key sociological theories as applied to health, illness and care may help to prepare for this section. It is valuable to practice essay writing of past questions under time constraints for Papers IA, IB and IIA, but perhaps particularly so for Section D in Paper IB.

Section D – Medical sociology, social policy and health economics

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Both questions relate to the following statements.

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- I. How much to spend on health care.
- II. How best to provide health services.
- III. Distribution of health services.

Health economics and sociology have much to contribute to these decisions.

Question 8

Discuss the above statements using named concepts from a health economics perspective.

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

Must include a description of relevant economic concepts eg opportunity cost, technical efficiency, allocative efficiency
Determining the outputs to be achieved and measured
The proportion of healthcare to be funded from taxation
Setting of care eg primary care, community, hospital
How to achieve more output per staff member, and increased utilisation of theatres or equipment ie “sweating the assets”
Resource allocation/prioritisation between different specialities
Issues related to equity

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

- Use of appropriate examples
- Acceptance/understanding that these are essentially political decisions to which an understanding of health economics can contribute, but is not a sole determinant.

Area of syllabus being assessed includes: 4d Health economics – in particular the bullet points: principles of health economics, financial resource allocation and systems of health (and social) care.

Examiners’ Key points

Answers tended to be better when the essay was structured around the three points given in the question. Better answers were written clearly and had been proofread by the candidate. When mentioning a named economic concept, candidates often failed to explain how it related to the question needing to be answered. Where performing particularly well, the candidate described relevant economic concept in detail, applied these concepts to the question and wrote in a clear style. Poor answers often read as though the candidate had memorised an answer to a slightly different question and did not attempt to tailor the answer to what was asked. Some

candidates used inappropriate and/or meaningless statements to define the concept :e.g. "Economy is the study of decision making..."

Chair's comment

Future Part A candidates should be aware that many public health issues can be answered from a sociological or a health economic perspective. While this question paper was unusual in setting both questions 7 and 8 from a single set of trigger statements, this format could be used in future question papers where independently marked questions are being used to assess independent parts of the same section of the syllabus. As with the Chair's comment above under question 7, it might be useful to consider health economic aspects of key public health related policies e.g. ageing. Again practising essay writing using questions from past papers under time constraints is useful preparation.

Section E – Organisation and management of healthcare and healthcare programmes

Question 9

- a) Outline the differences between power and authority.
(30% of marks)
- b) In the context of an explosion in a large chemical factory, briefly compare the roles of the police and fire emergency services with those of public health professionals in a named country.
(40% of marks)
- c) Briefly comment on the sources of power and authority for each profession in this emergency context.
(30% of marks)

KEY POINTS

To avoid a bad fail: one difference between power and authority; three key steps for both the emergency services and public health groups

Pass: two differences between power and authority; mention of emergency planning; four key steps for both emergency services and public health at the time and after the incident

- a) Authority
- is legitimized power – a voluntary submission to authority
 - o conceptualized by Weber in the 1940s
 - o tradition
 - o rational-legal authority (position power)
 - o charisma (personal power)
 - o pure rational authority (expertness)

Power

- a much broader concept than authority
- is possession of controlling influence
- may refer to non-legitimized authority
- is the capacity to overcome resistance
- may be subtle or overt within a group or organisation
- French and Raven in 1986 also identified (in addition to the above) different power types
- o Resource or reward power, e.g. granting or withholding high grades by professors
- o Coercive power, the power to punish, e.g. firing a staff
- o Negative power, capacity to stop things happening

b) Emergency services

Immediate and short term

- casualties
- evacuation
- de-contamination of potentially exposed
- reduction/elimination continuing risk – maintaining cordons
- media – informing public in regular briefings

- membership of high level decision making group (*Strategic / Gold Command*)

Long term

review of response and lessons learned

Public health

Immediate and short term

advice re the health effects of the plume contents and identifying at-risk groups

timely advice for the protection of emergency personnel, employees, and the public

member of the health and scientific advice group to the Strategic Command Group and

Science and technical Advice Cell (STAC) or equivalent if convened

liaising with and advising health service providers and senior management colleagues

- o ambulance staff

- o secondary care – A and E capacity, trauma, burns and ITU facilities, mortuary

capacity

- o primary care – advice

media – ensuring agreement on public health messages, agreeing spokespersons, answering

media questions

Long term

- investigate possibility of any long-term health effects using appropriate

epidemiological investigation

- contribute to interagency groups to advise and mitigate the effects of the incident on

the local community and prevent recurrence

c) Power and Authority

Emergency services:

Authority from position power

Legitimised power relating to Strategic / Gold command' role

Public health

Authority stems mainly from expert power, i.e. Power of knowledge, although directors of

public health may act on behalf of Chief Executives and thus hold delegated position power in

emergency planning functions.

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

Good pass: mention of relevant management theory; most of the key steps for each group

Excellent pass: mention of most of the key points and describes theories in detail, relating these to the situational context

Area of syllabus being assessed: 5a Theoretical and practical aspects of power and authority, role and conflict.

Examiners' comments

Answers were generally well structured. However, few added in management theory to strengthen their answers Candidates who performed better utilised management theory to demonstrate understanding: some referred to French and Raven or to Weber, as expected, but some good answers also drew on Foucault or Lukes..

Candidates who scored less well often gave poorly structured answers or answers which did not reflect the question and mark allocation; failing to refer to relevant theories or go into any depth or provide any appropriate examples

In 9c a minority of candidates referred to forms of power and authority, i.e. describing what each group has the power to do (e.g. "the police have the power to arrest people") rather than answering the question, which asked about sources of power and authority.

Chair's comment

Candidates should be familiar with management theories and think how these might apply to all aspects of public health practice, such as in this case, Emergency Planning.

Question 10

Discuss how a hospital or other health care provider organisation can reduce the risk of clinical errors.

KEY POINTS

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

Reduction of errors should be put in the context of clinical risk management, which aims to improve the quality of health care and create and maintain safe systems of care.

The purpose, structure and setting of the clinical or healthcare agency need to be clearly set out, e.g. whether the discussion relates to an acute hospital or other care setting

It is essential that the candidate indicates that the organisation should have in place a written protocol or set of procedures covering the management of clinical errors. The candidate should specify that the protocol/procedure has the following features:

Strategic Commitment: Approval, ownership and review process signed off by the agency's accountable officers i.e. Chief Executive and Board of Directors.

Agreed case definition: An organisation-wide agreed case definition and interpretation of the term "clinical error" which includes the types of clinical error (diagnostic, treatment, preventative, other – equipment failure, system failure, communication failure.

Accountability: clear accountability mechanism for the reporting of clinical errors incorporating specific examples of good practice e.g. near miss approach, audit processes against standards, blame free culture for reporting.

Detection Mechanisms: clear detection/reporting arrangements which ensure that appropriate clinical confidentiality standards are maintained; monitoring by individuals, teams and organisations

Integration within corporate governance: clinical error management systems should be developed as part of the corporate governance framework of the organisation.

Organisational Culture: "no blame" culture where excellence can flourish

Error-reduction strategies: systematic process for the implementation of lessons identified in clinical error management, acknowledgement of the potential for error and building in error reduction strategies at every stage of clinical practice.

o Examples of specific methods: for example: provision of guidelines, care pathways, protocols and policies – including encouraging reporting, a whistle-blowing policy, redesign of services, within protocols acknowledge importance of workload, work patterns and clinical supervision in relation to local patterns of clinical errors
audit, clinical governance procedures, risk assessment, complaints monitoring.

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

Barriers to creating systems of safe care and how these may be addressed. Barriers may be strategic, cultural, structural and technical and ways to address them ought to be directed at creating a culture of patient safety and risk awareness.

Reference to guidance or reports on best practice locally or nationally e.g. the Francis, Keogh, Berwick reports

Description of a system of reporting e.g. NHS SUIs, never events

Mention of the role of regulatory agencies such as the NPSA, CQC, or equivalents

Reductions in the complexity of tasks

Optimisation of information processing by the use of protocols e.g. surgical checklists.

Dissemination of lessons identified from error management

Explicit and sufficient financing of the corporate error management system

System for analysing adverse events e.g. Reason's model

The following factors contribute to adverse events and should be considered in their analysis:

- o *Patient factors*: age, general health, complexity of the condition, language, social problems and personality, patient knowledge and partnership in decision-making
- o *Task factors*: task design, availability of protocols, test results, etc.
- o *Individual factors*: training, physical and mental health, and awareness.
- o *Team factors*: verbal communication, supervision, seeking help and team structure.
- o *Work environment*: staffing levels, skill mix, shift patterns, equipment and administrative support, technical / scientific controls to mitigate risk, audit culture
- o *Organisational and managerial factors*: financial resources, policy standards, goals and the safety culture, performance management

Area of syllabus being assessed: 5e with particular reference to risk management and patient safety.

Examiners' comments

Generally poorly answered. Many answers were not strategic or systematic, failed to discuss the importance of a written protocol and culture, and focused on individual- or team-level factors without considering organizational- or system-level ones.

Answers that did not draw on these aspects generally failed to attract a pass mark. Some answers were poorly structured. National systems were not mentioned and most candidates did not draw on relevant management theory.

Good candidates provided well-structured answers that answered the question set and used supporting management theory. Note this question was around clinical errors rather than clinical governance in general. Answers based on clinical governance achieved a pass mark if they drew out and focused on those aspects of clinical governance relevant to the question; in contrast, answers that simply listed or described the elements of good clinical governance but did not orient this to the question received lower marks. Many answers focused on risk management frameworks rather than describing the value of policies and procedures to improve safety and prevent clinical errors.

Chair's comment

Read the question several times and practice exam technique to ensure that you answer the right question. Read widely around syllabus topics – issues around health and social care management are often highlighted in current affairs. Questions in this section usually require broader thinking and responses at organisation or structural level than consideration only at individual or team level.

Paper IIA

Your local clinical planning / commissioning group is looking for ways to reduce emergency admissions, particularly for people with chronic conditions, and is proposing to introduce a telephone helpline for patients with chronic conditions. A meeting between the hospital planners / commissioners and the local public health team is planned.

You have been asked to review the evidence for telephone helplines in improving management of chronic conditions, and have found the following paper:
Effect of telephone health coaching (Birmingham OwnHealth) on hospital use and associated costs: cohort study with matched controls. Steventon A et al. BMJ 2013;347:f4585 doi: 10.1136/bmj.f4585

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

- The abstract
- The introduction
- Statement of findings
- Strengths and weaknesses
- What is already known/what this study adds

1. Critically appraise the paper

(40% of marks)

2. In the statistical analysis, why were two-sided P values calculated for comparison?

(10% of marks)

3. Based on your appraisal of this paper, write a briefing note for the Director of Clinical Strategy who will be chairing the meeting.

(30% of marks)

4. The planners / commissioners decide to pilot a helpline service in an area with known high hospital use. You have been asked to take part in a media interview for the local newspaper. Prepare a list of four bullet points in preparation for the interview.

(20% of marks)

Critical appraisal

This is a cohort study of retrospective design with matched control groups.

P: population: inner city English population with health inequalities and some areas of high deprivation. People with chronic heart disease, diabetes or COPD who were identified from records from participating general practices, supplemented by additional clinical judgment from GPs

I: intervention: regular telephone coaching by specially trained nurses, personalised guidance and support. 8 priorities in care management; coordination of care plans across services; some referral (e.g. MH and social care). Median time enrolled was 25 months; follow up for at least 12 months.

C: comparison: matched controls from four comparable areas in England. One similar neighbouring community, parts of which had to be excluded from the study as a small telephone health coaching service was found to be in operation there. Matched controls necessary to exclude any impact (on emergency admissions) of hospital or other service development during the study period.

O: outcome: over 12 months follow up, telephone health coaching did not lead to a reduction in emergency admissions. Both emergency admissions and outpatient attendances increased more quickly amongst the intervention group cf controls. Secondary care costs also increased. All findings were statistically significant.

Q: Does the study address an appropriate and clearly focused question?

A: Yes. the study was designed to evaluate the effect of telephone health coaching on hospital use and associated costs.

Q: Subject selection: are the two groups comparable?

A: yes and no; four groups drawn from a national area classification, of known socio-demographic similarity; one nearby locality, commonly used as comparator by local commissioner. However, the groups could be different in that those selected for the intervention were chosen by their GP to be suitable for the intervention, therefore possible bias/ uncontrolled confounding actor.

Q: What % of people asked to participate did so?

A: 3525 patients were enrolled, 2698 (77%) of invited intervention patients were able to be linked to matched hospital controls.

Q: What % of people in each arm of the study dropped out before completion?

A: not mentioned

Q: Is there a comparison between full participants and those lost to follow up, by exposure status?

A: no

Q: Are outcomes clearly defined?

A: yes: emergency admissions, outpatient attendances and secondary care costs.

Q: Is it acknowledged that knowledge of exposure status could have influenced the assessment of outcome?

A: retrospective so not relevant

Q: Are the main potential confounders identified, and taken into consideration?

A: unobserved selection bias; differences between intervention and matched control groups using algorithm and difference-in-difference estimator (to compare changes in no of hospital admissions observed from the year before enrolment to the year afterwards). Sensitivity analyses conducted: unexpected outcome (in-hospital mortality) and hypothetical unobserved confounder. However, referrals were different so could still remain.

Q: are confidence intervals provided, where appropriate?

A: yes: for differences in admissions and outpatient attendances

Q: How were bias and confounding addressed, and attempts made to minimise?

A: see above

Q: Does there seem to be clear evidence of an association between exposure and outcome? (NB statistical power)

A: statistical power calculation, on basis of 15% effect. Sample size achieved exceeded this so detection of a smaller effect (13.6% increase in admissions) was highly significant.

Q: Are the results directly applicable to the patient group targeted?

A: Less clear: this was already an established service before the study; patients were very satisfied with the service and believed that it reduced their need for hospitalisation! As the study was already established, had it had a prior impact on other services in primary or secondary care? When patients were initially selected, how was the 'additional clinical judgement' applied objectively? The chronic conditions initially targeted were broadened part way through the study to include chronic kidney disease.

Q: What are the public health implications of the findings?

A: The study adds to the body of evidence that health coaching does not necessarily reduce hospital use over 12 months. Measurement of patient health outcomes would be useful to ascertain the impact of health coaching on short and long term health outcomes (whether hospital use is increased or not).

2. In the statistical analysis, why were two-sided P values calculated for comparison?

Two-sided P values are a test of a non-directional hypothesis as in theory do not know in which way the telephone help lines will influence a change in admission rates etc, whether to increase or decrease them. As the evidence base is inconclusive this is a more robust statistical measure (is it?)(10%)

3. Briefing note for Director of Clinical Strategy (chair)

- a. Background-
 - i. describe the intervention and telecoaching +/- monitoring.
 - ii. describe the need for the intervention- increasing elderly population with multiple co-morbidities and financial pressures on health and social services.
- b. Evidence of effectiveness-
 - i. summarise previous and current studies
 - ii. summarise expected outcomes
- c. Suggested way forward- not proven that intervention works so do not necessarily want to go ahead with intervention. Possible approaches might include:-
 - i. Pilot study in local area
 - ii. explore research in local area with university
 - iii. Steering group with relevant professionals and patient reps to discuss possible approaches
 - iv. Follow up measurement of short and long term patient health outcomes.

4. Four bullet points for local newspaper article

- Health and social care services are under great financial pressure locally.

- People with long term health conditions are heavy users of hospital services, either at outpatient clinics or as emergency admissions.
- A telephone helpline, with trained nurses providing advice on how to manage your health problem, and how to lead as healthy as possible a life, might help to reduce the need for hospital attendance and thereby save money
- But the evidence on this is mixed. Some studies have even shown that such a service increases hospital use! But where it has been in place for some time (e.g. Birmingham) it has been very popular. So we have decided to run a short pilot study to see if, instead, we could use a telephone helpline to reduce hospital use in a community where we know hospital use is high.

Examiners' comments

Some candidates appeared to be short of time by the last question. However, in general all questions were answered. Q2 most candidates were able to answer this question. Q3/4: It was possible to identify candidates who knew the theory and those who had experience of applying theory in practice.

In candidates who scored less well. Q1: some candidates got the design wrong and mistook it for a case-control study. Q4: some candidates described the physical preparations one might do before an interview (e.g. booking a room dressing well) , rather than the information points to be included in the interview. The wording of question could possibly have been tighter but given this is a critical appraisal question, the intention is to check the candidates ability to extract key points from the paper to communicate in this case for a local newspaper.

Critical appraisal is not entirely about finding fault with a paper, positive aspects should be highlighted as well. Many candidates mention 'buzz' words such as bias, chance, confounding, validity, but do not explain how they have affected the study and what (if anything) could have been done to minimise the effect. Some candidates describe the study but do not critique it. Particularly of note is the results section where many candidates failed to summarise clearly.

Chair's comment.

Candidates should note that from June 15, there will be a slight change to format of question IIA (please see FPH website) with the intention of reducing the length of answer required of candidates. Candidates should demonstrate practical application of critiquing and communicating key messages from a study e.g. in summarising for a lay audience. It is useful to practice writing crisp, sharp answers to the point. Candidates have commented on redacted texts and while not ideal, the reason for redaction in an era of long on line journal articles has been outlined in the Part A FAQ

http://www.fph.org.uk/frequently_asked_questions_about_the_part_a_exam

Paper IIB

Most candidates did well and passed Paper IIB. Candidates need to read the questions carefully and assess how much detail is required for a particular answer based on the marks assigned for that question. When asked to comment on statistical findings or interpret findings, this should be more than a description of the results. It is important to comment whether findings are statistically significant or not and give an indication of potential reasons for the observed results.

When asked to describe reasons for the findings, although it is good to use the framework 'chance confounding, bias'; however, it is important to make the explanation relevant to the setting of the question.

There were frequent instances where candidates did not complete some of the questions spending too much time on other questions with little marks or not answering to the point. Sometimes candidates omitted answering questions that needed calculations.

Some basic concepts were not fully understood by candidates resulting in flawed explanations of the scenarios.

Chair's comments

Questions from 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.