Faculty of Public Health

Of the Royal Colleges of Physicians of the United Kingdom

Working to improve the public's health

FPH Part A Examination

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EXAMINATION QUESTIONS WITH KEY POINTS AND EXAMINERS' COMMENTS

NB Please note that these are key points, not model answers

Paper IA

Question 1

Recent data show geographical variation in hospital emergency department attendance rates for asthma in your area.

a) Briefly outline four possible causes for this variation and explain them.

(40% of marks)

b) What are the key features of a clinical audit of the management of acute asthma in a primary care setting?

(60% of marks)

Key points

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

(a) Four possible causes for the variation (and explained with some reference to asthma rather than being a generic answer)

1. Data Error
2. Population variation
3. Location of Population
4. In/out of hours service provision [in primary care] and A & E emergency department.
5. Provider skills
6. Perceived service quality
7. Patient preferences

(b) Key features/stages of audit (Note detailed knowledge of asthma is not required for this question but the answers should have some reference to asthma rather than being a generic framework).

1. Agreed standards pre-determined
2. Define population – what sample
3. What data are to be collected and how do you collect it?
4. Test data against standard
5. Present data back to practices
6. Agree interval to change management
7. Re-audit

A **good candidate** would draw / make mention of audit cycle; and will involve staff in all stages of audit process.

An **excellent candidate** would mention patient involvement.

Examiners' comments

Many candidates did not adequately answer the questions asked. Some candidates wrote extensive answers although there were a few who wrote little. Those who performed well had a clear structure and were able to provide examples to illustrate their points. Most were able to identify possible reasons for the variation (Q1a).

Candidates performing poorly gave answers which lacked structure, were general and superficial and/or interpreted the question incorrectly, e.g. considering admission rates when the question referred to attendance rates (Q1a). Pitfalls in answering the question included the following:

Q1a. A significant number considered the variation from a purely statistical viewpoint (bias, confounding, true or apparent) rather than addressing the question. Some failed to illustrate their answers using asthma as the example.

Q1b. In the audit section, many failed to identify that the crucial part of an audit is comparing with a benchmark or standard. Also, several confused audit with service evaluation or provided examples of what could be audited rather than the process.

The following were associated with obtaining good marks for this question.

- A clear structure and examples to illustrate points.

- Identifying the key features as a succinct introduction. (Conversely, many unsuccessful responses included padding out the answer with general information about asthma which wasted time and failed to gain any additional points.)

Question 2

a) Describe the key features of a focus group study in public health

(50% of marks)

b) Describe how you would use Delphi methods to develop a quality standard for a public health topic.

(50% of marks)

Key Points

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

(a) Focus groups:

- Are a form of qualitative method
- involve a facilitated group interview
- explore a clearly focused theme but open questions can be asked, often from a pre-formed topic guide
- The participants all have experience of the theme to be discussed, or have some commonality between the group members.

The discussion and interaction are between group members and the facilitator. Features include the following

- The facilitator should be skilled at listening, observing and reflecting back
- Focus groups are designed to capture a wide range of opinions and experiences – consensus is not usually sought (in contrast to Delphi methods)
- The interview is usually recorded and transcribed prior to qualitative analysis of the discussion

(b) Delphi methods

- Delphi methods are a tool for achieving consensus
- They are used to prioritise statements or topics
- Participants are drawn from a particular target group
- Participants are asked to give their views on a series of questions in the first round, and then again in a second (or third) round after they have seen the collated answers from all participants in the previous round(s)
- Participants can revise their answers in the light of feedback from previous rounds

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

(a) Focus groups

- The analysis should consider the interactions within the group as well as the words spoken
- The number of participants varies, and is usually between 6 and 12
- The group discussion can allow themes to emerge that would not have been apparent from a series of individual interviews
- Groups can be stratified by e.g. age, sex, socio-economic group in order to achieve some homogeneity of experience

(b) Delphi Methods

- Delphi methods give partial anonymity about individual contributions
- They can be conducted online, by post or face-to-face, or by a combination of these methods, and costs vary accordingly
- The method can be time consuming
- The number of participants varies, and is usually between 10 and 60
- A quality standard is usually designed to drive and measure quality improvements within a particular area
- Often used to explore issues of uncertainty in clinical areas
- Delphi is one of a range of consensus methods, e.g. expert panels and consensus development panels

Examiners' comments

Most candidates performed adequately on this question. There were relatively few very good/excellent answers but there were also a few very poor answers. Some candidates wrote extensive answers although there were a few who wrote little. Some did not answer the question on Delphi Methods although it was unclear whether this was because of lack of time or knowledge. Those who performed well had a clear structure and were able to provide public health examples to illustrate their points. Most were able to describe the main features of focus groups and some were able to apply this to public health practice.

Candidates who performed poorly had a lack of structure, provided general and superficial answers and interpreted the question incorrectly. A significant proportion did not address Delphi methods at all, reflecting a lack of understanding the question

Common pitfalls in answering the questions included the following observations. Many considered that focus groups were a way of achieving consensus. Relatively few discussed the need for more than one focus group or the importance of observing group interaction. Some suggested large numbers of participants for the focus group.

Some did not appear to answer the section on Delphi methods.
Some considered Delphi Methods to be focus groups or consultation exercises. Few discussed the number of participants for this method.

Question 3

For a named country, describe the potential health hazards that may be associated with EITHER flooding or drought.

Key points

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

Mention of a named country

Flooding

- Physical hazards

  - o Risk of drowning – fast-flowing water, water of uncertain depth and hidden hazards e.g. drainage culverts, eroded pavements or displaced manhole covers (NB even shallow water poses risk to children).
  - o Risk of injury – floodwater may contain/hide broken and sharp objects (metal/glass) and large objects (e.g. cars) may be swept along.
  - o Electrical hazards – domestic or external (e.g. power lines).
  - o Gas – leaking gas from disrupted mains pipes and home supplies.
  - o Carbon monoxide – from diesel/petrol generators and other equipment used to pump water, clean/dry up.
  - o Animal/insect bites – in some settings, floodwater can displace animals, insects and reptiles that pose a hazard (this may be less relevant in a UK setting).

- Infectious/microbial hazards

  - o Floodwater may contain sewage and other microbial contaminants (e.g. from agricultural or industrial processes) with attendant risk of diarrhoeal disease and skin/wound infection.
  - o Water may contaminate home-grown and stored food (same applies to chemical hazards) and moulds will grow on damp surfaces.

- Chemical hazards

  - o Floodwater may move and/or disrupt containers of industrial chemicals from their normal storage places leading to contamination of floodwater, soils, surfaces, etc.

- Interruption of essential services

  - o Loss of safe drinking water (interruption to mains water treatment and/or supply).
  - o Sewerage – local contamination, disruption of treatment works (with discharge).

- o Electrical power, mains gas, telephony services and internet.
- o Health service and social care services – ambulance services, primary and community services, care homes, hospital services. Access may be impossible, staff unable to get to work and services overloaded.

- Mental health issues

  - o Experience of home/workplace flooding is extremely stressful and may be associated with mental health disorders.
  - o Initially, distress relates to immediate dangers/injuries (self or family), loss of basic facilities (food, water, shelter, medication) and possessions (especially items of sentimental value), and move to emergency accommodation.
  - o Difficulties may last many months or years and may include:
    - economic issues (loss of employment, reduced income/financial security/house value);
    - difficulties with compensation and insurance claims (or no insurance);
    - problems with recovery and rebuilding;
    - loss of physical possessions/resources/items of sentimental value;
    - loss of school facilities, interrupted school attendance, move to new schools;
    - disruption to normal household activities, separation from family/friends, disruption of social networks, family breakdown;
    - feelings of loss of control and worry that flooding may reoccur;
    - physical and mental health disorders.

Drought

The following key points would be relevant to high-income countries, where in general it is very unlikely that public health would be directly affected by drought (though it can lead to other hazards and behaviours that put people at risk). Other issues may be more relevant in less developed settings.

- Physical hazards and the risk of injury

  - o Increased risk of shallow water in rivers, reservoirs and other natural bodies of water. Diving into shallow water can cause serious injury (including spinal).
  - o Co-incident high temperatures may tempt people to swim in unknown waters, of unknown depth, with unknown hazards beneath the surface.

- Water-supply related hazards

  - o Drought may threaten viability and/or quality of private water supplies (1% of households in the UK). Unlikely to impact on public supply unless very severe and prolonged.
  - o If severe shortages, reduced domestic water use may be associated with dehydration, infectious illness (reduced hand washing), skin infections, reduced function/efficiency of the sewerage and sanitation system.

- Interruption of essential services

- o In addition to water and sanitation services, drought (and associated conditions) may overload health, social care, and other emergency services.

- Other associated environmental hazards

  - o Algal blooms (and associated surface scums) - grow on open waters and blow onto shorelines. They release toxins which adversely affect human and animal health. Symptoms following ingestion or contact with contaminated water during recreational activities (include gastro intestinal effects, respiratory effects, skin and eye irritation, and hay fever/asthma-like symptoms).
  - o Dust-related problems – from parched soils or wildfires. Implications for respiratory and cardiovascular health.
  - o Wildfires – direct fire hazards, increased air pollution.
  - o Heat waves (extreme heat events) – particular health impacts on the very old or young and those with pre-existing health issues. Direct heat-related illnesses (e.g. heat stroke) or worsening or pre-existing cardiovascular and respiratory illness.
  - o Subsequent flooding – risk increased with extremely dry soils.

- Mental health issues

  - o Drought can be difficult for those whose livelihood or lifestyle depends on water (or the use of high volumes of water for cooling), may experience stress related to financial worries and employment uncertainty.
  - o Includes farmers, those in leisure industries, heavy industrial manufacturing, electricity generation.

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

The following applies to either flooding or drought:

- A well-structured answer, potentially indicating the different time-course for different hazards.
- For mental health issues, a consideration of primary stressors (inherent to and arising directly from the flooding) and secondary stressors (consequent to the flooding event, which may arise shortly after the flooding and persist for long periods).
- Consideration of vulnerable groups, e.g. babies (especially if bottle-fed), children, elderly, those with limited mobility, travellers, or those with other relevant medical conditions (e.g. dialysis dependent, cardiovascular disease, etc.).

Examiners' comments

Answers were generally well-structured, particularly for flooding, and recognised that there are a range of potential health hazards associated with environmental

incidents of this type. Candidates appeared to have time to complete answers with no evidence that candidates were running out of time. Well-structured answers enabled candidates to consider the full range of potential health hazards associated with environmental incidents of this type, giving appropriate weight to short, medium and longer term hazards. Poor answers focused too much on the immediate physical risks to health or omitted to give appropriate weight to the psychological consequences of flooding or drought. Some candidates included infectious disease risks that were not appropriate to the country chosen.

Some candidates spent a lot of time considering the risks of flooding or drought and how to mitigate these risks in the context of global warming and climate change. This was not the focus of the question. Similarly, the health hazards of drought were not always clearly distinguished from those of heat waves, though there is clearly a lot of overlap.

Question 4

a) What harm reduction measures may be used to help people who are injecting drug users?

(50% of marks)

b) What are the potential benefits to individuals and communities of harm reduction measures for injecting drug users?

(50% of marks)

Key points

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

(a) **Reduction measures**

Many definitions of harm reduction exist, but in general the term refers to a range of public health policies/programmes designed to reduce the harmful consequences associated with human behaviours, even if those behaviours are risky or illegal. Harm reduction measures for injecting drug use are likely to be pragmatic and not necessarily focused on abstinence (though may support those who wish to reduce their drug use).

Harm reduction measures – for example:

- Signposting and referral to drug services, counselling, and other relevant services (crisis management).
- Increase knowledge and awareness of safer injecting techniques (at drug services or through user groups), e.g. attention to personal/environmental hygiene, and avoiding sharing needles and other drug paraphernalia.
- Encourage other safer routes of drug administration, e.g. inhalation, smoking.
- Avoidance/reduction of polydrug use and/or excessive alcohol intake (both of which may increase overdose mortality).
- Screening for blood borne viruses (hepatitis B and C, HIV) and provision of hepatitis A and B vaccines, tetanus vaccine booster.
- Prompt attention to abscesses, wounds, thrombosis.
- Use of opiate substitution therapy, e.g. methadone, buprenorphine (including within prison).
- Access to naloxone to reduce overdose mortality.
- Access to free condoms.
- Access to and use of needle-syringe exchange programmes (including within prison).

(b) **Potential benefits**

Potential gains through provision of harm reduction measures/programmes may include:

- Reduced incidence of hepatitis B and C, and HIV.
- Reduced overdose and mortality.
- Reduced incidence of complications from injecting, e.g. abscess formation, venous thrombosis, septicaemia, endocarditis, gangrene, hepatitis A.
- Improved mental health for individuals and their families/dependents.
- Improvements in community safety, urban and rural environment.
- Fewer discarded needles in public places.
- Reduced acquisitive crime, gang membership and visible drug scene.
- Positive impact on prostitution.
- Reduced prison population and potential for reduced re-offending.

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

- A well-structured answer.
- Consideration of key groups at particular risk, for example homeless people or those in prison.

Examiners' comments

Answers were generally well-structured and addressed the question being asked. However, there was sometimes not a good balance between the two sections of the question, with answers to section b often being very brief despite accounting for 50% of the marks.

Well-structured answers (frequently with a bulleted list) allowed candidates to show that they understood the full variety of approaches to harm reduction, and could explain the potential benefits for individuals and communities.

Poor answers focused on just a few potential measures to reduce harm, and did not consider the wider benefits of harm reduction beyond health consequences, e.g. in terms of crime and community safety. A small number of candidates did not appear to understand harm reduction, focusing instead on policy measures to reduce illicit drug use through controlling the supply and/or demand for drugs.

Some candidates spent a lot of time describing the health risks associated with injecting drug use; while a brief introduction was valuable, the question did not ask for a longer discussion of this topic.

Well-planned and structured responses gained the most marks as they allowed candidates to show a breadth of knowledge and understanding.

Question 5

a) Describe the characteristics of a good indicator for monitoring the performance of a health system.

(50% of marks)

b) Using examples from a named country describe the possible data sources that could be used to generate indicators of the quality of primary care medical services.

(50% of marks)

Key Points

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

a) Characteristics of a good indicator:

- Measures an important aspect of health system;
- Uses timely and reliable data;
- Does not create perverse incentives or gaming behaviour;
- Has been shown to be valid;
- Is meaningful;
- Is part of a wider and balanced set of indicators;
- Is able to detect issues that need investigation;
- Can be communicated to others.

b) Sources of data for quality indicators in primary medical care – may need to be more basic depending on country named in answer:

- Named country stated
- Service users – via surveys/Questionnaires
- Primary care clinical systems (e.g. Quality Outcomes Framework)
- Secondary care information systems where information can be linked back to the primary care provider (e.g. secondary care activity rates)
- Prescribing systems
- Recording systems for immunisation
- Recording systems for screening services

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

a) Candidates give a logical and coherent approach to the Question, possibly with the use of examples of good (and bad) indicators. Candidates demonstrate a clear understanding of the process of developing an indicator.

b) Candidates use a clear structure and identify a range of data sources covering patient/user views, clinical outcomes and processes.

Examiners' comments

Most candidates had a reasonable understanding of some of the general principles of indicator construction but this was not always discussed in the specific context of measuring performance. Good answers included discussion of the advantages and disadvantages of primary care quality measures.

The poorest answers were not only too generic, failing to focus on measures of quality as the question asked, but also contained some factual errors.

Pitfalls in answering the question included the following observations:

Part a) Confining answers to a discussion of SMART indicators and failing to mention important concepts such as gaming/perverse incentives and the importance of communicating with stakeholders and seeking their engagement

Part b) Few candidates mentioned immunisation and screening as activities that take place in primary care and that can be measured as part of primary care quality. A surprising number of candidates failed to mention patient satisfaction surveys or prescribing data.

In order to provide a good answer to this question, focus should be on the specific topic of measurement of performance and quality of primary care medical services rather than just a generic answer about indicators. This should include some discussion of the specific issues of performance measurement such as the risks of generating perverse incentives or encouraging gaming, the need for a basket of indicators type approach and, for primary care, some of the strengths and weaknesses of the data sources cited.

Question 6

A newly licensed medicine is being prescribed to eligible patients in primary care. The treatment requires lifelong daily treatment with tablets.

   a) Describe three prescribing measures that can be used to monitor how the drug is being used in your area.

   (60% of marks)

   b) How could a national medicines agency monitor the safety profile of the new drug?

   (40% of marks)

Key Points

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

a) **Prescribing measures**

Simple prescribing measures include:

- Drug cost – can be measured using net ingredient cost (the basic price of a drug) or the actual cost (the true price paid by the health service)

Better prescribing measures would include:

- Volume-based measures such as Defined Daily Doses (DDDs – the assumed average maintenance dose per day for a drug used for its main indication in adults) and Average Daily Quantities (ADQs – the average dose that is prescribed for that condition in normal clinical practice – in this instance in primary care)

- Prescribing rates that utilise appropriate patient denominators, to take account of the age and sex distribution of patients with the condition for which the drug is being used

These prescribing measures can be used to produce prescribing performance indicators, which can be used to assess clinical usage, clinical performance of prescribers, and financial management of the drugs budget.

- Note Number of items prescribed –item-based analyses may be a reasonable measure of the numbers of people being treated. However, these analyses are generally not useful for chronic conditions where there are repeat prescriptions often with differing durations of supply

b) **Monitoring the safety profile of a new drug**

Clinical trials tend to involve small numbers of patients who take the drug for a relatively short period of time. This enables common side effects to be identified together with their possible frequency. Rarer or long-term side effects (adverse reactions) may only become apparent when large numbers of patients are taking the medicine.

A National Medicines Agencies may use some or all of the following:

- Alerting prescribers to the need to report all suspected side effects however minor.

- Mechanisms to encourage reporting of suspected reactions to new drugs

- A legal requirement to report suspected side effects

- Systems can collect information from both health professionals and the general public, and may include prescription medicines, vaccines, over-the-counter medicines and herbal remedies

- Post marketing surveillance (obtaining information from the drug company)

- Statistical methods to assess the clinical significance of adverse drug reactions in relation to the volume of the drug being used

- A process for providing feedback to prescribers about newly-discovered side-effects

- Clear mechanisms for information exchange between the Medicines Agency and the pharmaceutical industry, with the provision to withdraw the licence for a drug should this be needed (or for voluntary withdrawal).

Examiners' comments

The majority of candidates wrote very poor answers to this question, especially to part a. It seems that most candidates had little or no knowledge of the prescribing measures or indicators that are in regular use. Candidates are advised to look closely at the syllabus before sitting the examination. Only a very few candidates knew about some of the expected measures (Average Daily Quantities, Defined Daily Doses etc) and were able to discuss the advantages and disadvantages of these measures.

Answers to part a) (prescribing measures) were especially poor with very few candidates able to describe any of the measures outlined in the key points in any detail. Many candidates provided very general responses that mentioned 'prescribing data' or 'e-PACT' but with no discussion as to the nature of these data or issues such as standardisation or comparability.

Answers to part b) (safety monitoring of a new drug) were slightly better with most candidates being aware of some of the basic surveillance mechanisms.

Both parts of this question concerned routine monitoring. A surprising number of candidates seemed to think that audits, surveys or cohort studies were appropriate methods of monitoring.

Paper IB

Question 7

Your government is considering the introduction of a minimum price for a given unit of alcohol. Discuss from social, political and economic perspectives, the positive and negative impact of such policy change.

Key points

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

Brief pros and cons of alcohol consumption

Pros

- Pleasurable and acceptable to most people
- Encourages social interaction
- Around one million people (UK) employed in production, distribution and sale. Many of these jobs do not require formal qualifications.
- Tax revenue (UK) of around £25billion per year

Cons

- Alcohol has no nutritional value and is heavy in calories
- Major risk factor for liver disease, cardiac disease and some cancers
- Major risk factor for violent crime, social disorder and domestic abuse

Use of government regulation of society rather than education of society.

Discussion of the philosophical underpinnings of this type of policy and the rationalisation of whether it is right or wrong (providing the justification) to create a policy that impacts all of society when all of society is not "the problem".

Government sponsored paternalism. Members of society are viewed as not being capable of adopting a healthier approach to alcohol, so all must pay the price.

Specific points required for a pass:

Social

clear discussion of the rationale for this policy i.e. the underlying assumption is that the key problem to be addressed is social disorder caused by predominantly young people "preloading" with very cheap alcohol:

Positive: an attempt to address alcohol misuse and diseases/ risk of diseases secondary to alcohol misuse, including accidents and injury.

Negative: impacts all society, including those who use alcohol responsibly. May impact more on low income groups.

Example of the nanny state penalizing everyone instead of targeting and educating those in need of it. Seen by some as a strike against responsible members of society.

Political

clear discussion of the political motivations behind the development of this policy

Positive: shows politicians recognise the damage created by alcohol misuse.

Negative: a relatively easy way for politicians to claim they are addressing the problems of alcohol misuse by penalising all instead of addressing the root cause of the problem and teaching those at risk to have a healthier relationship with alcohol.

Economic

clear discussion of the impact this will have across the population.

Positive: increases governmental revenues.

Negative: negative impact on responsible drinkers and people who are living within tight budgets whose use of alcohol does not negate a healthy lifestyle. Potential for increased crime in order to pay for the increased cost of alcohol. Potential for increased closure of pubs which will have further drain on the economy (business closure, unemployment, decreased tax revenues, etc). Supermarkets will be key beneficiaries as they will pocket the revenue from higher prices.

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

Compare and contrast this as it relates to other similar situations, i.e. tobacco pricing.
Has increasing the cost of tobacco products resulted in any meaningful reduction of smoking?
Smoking is more serious because it is something that cannot ever be considered to be a healthy lifestyle choice. Drinking a limited amount of red wine has been found to have positive effects on cholesterol levels. There is nothing about smoking that can be deemed to have any positive impact on health.

Examiners' comments

Most candidates gave satisfactory answers to this question. However, it was interesting to note that some general misconceptions around minimum alcohol pricing policy also found their way into a small but sizeable number of answers. With a very few exceptions, most candidates were able to complete all parts of the question, suggesting sufficient time. The vast majority of candidates were able to articulate the health and economic benefits of minimum pricing policy, but only in general terms. Candidates were able to describe the differential impact of this policy on problem drinkers and binge drinkers. They were also able to discuss the 'nanny state' and 'impact on moderate drinkers' arguments against this policy

Poorer answers failed to differentiate between the impact of the minimum pricing policy and the other alcohol prevention policies. Therefore, the social, political and economic impacts were described in general terms, which would happen with almost any alcohol prevention policy.

A number of candidates suggested that a minimum pricing policy could have a 'negative' impact on health inequalities and considered this as a 'regressive' policy. This is clearly not the view of the majority of public health bodies. Such a policy is likely to impact positively on health inequalities as people living in the most disadvantaged communities carry a disproportionate burden of alcohol-related harm.

Most candidates were also unable to see the differential effect of such a policy on the cheap alcohol sold in supermarkets. Several candidates indicated that this policy would 'shut down' pubs. The reality is that this policy is unlikely to influence alcohol sale in pubs and restaurants.

There was also a lot of confusion about the impact of this policy on government revenues.

Almost no candidate made any reference to the experience of higher taxes on cigarettes and its effect on smoking.

Candidates should be able to study the impact of policies within the wider context. This should apply to all public health policies. Without this fundamental skill, public health leaders will struggle to debate policies within public arena.

Question 8

Your local hospital is involved in establishing a population biobank. The Organisation for Economic Co-operation and Development defines a biobank as:

 "A collection of biological material and the associated data and information stored in an organised system, for a population or a large subset of a population"

All hospital patients will be asked to participate by giving blood samples and completing a questionnaire. Individual data will then be linked via patient electronic medical records. Discuss the ethical and social implications of this research.

Key Points

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

- Social and ethical implications, e.g. privacy, confidentiality
- Principles of formal research ethics, e.g. Research governance, consent, secure systems to maintain data confidentiality
- Other ethical considerations – e.g. recruitment of potentially vulnerable patients
- Social reactions to collection of biological samples and data, e.g.
- Cultural fears of genetic science/information
- Association with prior incidents –e.g. in UK Alder Hey, Northwick Park
- Perceived stigma if information is released

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

- Ways of ameliorating social fears
- Excellent answers will also demonstrate a sophisticated understanding of the social and ethical implications of a biobank being established in their hospital which is:
- embedded in the realities of the health service and,
- cogniscent of the potential tensions and/or conflict between population health and health research practices and the rights and autonomy of the individual.

Examiners' comments

In general, most candidates were able to provide satisfactory answers. There was some confusion regarding social and ethical issues for research and treatment/intervention. The vast majority of candidates were able to complete the paper in the time allocated.

Most candidates were able to identify social and ethical implications of population based research such as biobanking, eg privacy, confidentiality, stigma if results disclosed. Most candidates were able to identify the formal requirements of research ethics (governance, consent etc) as well as other ethical considerations related to recruitment of vulnerable persons and the potential of patients to perceive a pressure to consent in the hospital setting. Some candidates identified public trust issues and related these to the history of prior incidents.

Some candidates relied on recitation of Beauchamp and Childress's four principles of ethics without applying these to the actual setting and answered in general or vague terms. Poor responses failed to consider the practical social and ethical complexities of doing research in a population setting, eg. tensions between population health outcomes and individual autonomy.

Candidates need to consider the broader ethical and social implications of research. They should consider the embedded realities of the health service as well as public perceptions of population research and the implication of these for ethical and social considerations.

Question 9

a) In a named country, describe TWO policies that could be used to address an increase in service demand resulting from an ageing population.

(20% of marks)

b) With reference to ONE named management theory, how would you ensure the implementation of these policies?

(80% of marks)

Key Points

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

(a) Key policy areas could include:

- Development of Preventive /Proactive care, Patient empowerment
- Building up a better and more integrated primary and community care system, ambulatory care
- chronic disease management
- Integrating medical and social care
- Manpower development and training
- More sustainable model of healthcare financing

(b) A suitable change management theory should be chosen and contextualised:

Examples might include one of:
Kurt Lewin, Gleicher's Formula or Roger's innovation adoption curve

Force field analysis (+/- unfreeze, change, freeze)

- ADKAR model (awareness, desire, knowledge, ability, reinforcement)

- Beckhard change equation (dissatisfaction, vision, first steps to change) 19

Demonstrate an understanding of the role of stakeholders in developing and implementing health policy and strategy; different approaches used in stakeholder engagement and the facilitators and barriers.

Key steps in implementation of strategies

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

- Can highlight the key barriers and suggest ways to overcome
- Able to suggest system changes that are necessary and discuss the pros and cons

Examiners' comments

In general, the candidate answers were rather disappointing. The question touched on an important public health topic which has been discussed amongst most developed countries and WHO for some time. Many failed to grasp the key public health initiatives being advocated to address the demand of the ageing population – only two examples were requested.

Change management theories are core public health management knowledge. A significant number of candidates could not appropriately quote and apply a relevant change management theory. There was a sense from examiners of sufficient time to answer questions.

Good answers included those well structured answers with some thought to joining the different elements of the question together. Some candidates were able to describe in detail how the change management theory could be used to implement the policies.

Poor answers failed to use key public health principles/ initiatives to address the demand of an ageing population and failed to appropriately discuss how a change management theory could be applicable. Poor answers contained irrelevant information, had a poor structure, and failed to answer the questions set.

General advice for answering this question include being more familiar with key public health initiatives and policies being advocated, not just locally, but also internationally to address a specific issue – in this case an ageing population. When answering a management question be familiar with management theories and be able to justify in a clearly structured way a choice made, even if there are limitations. Candidates received marks if they made good reasoned points even if not explicitly laid out in the key points for the question.

Question 10

a) Outline three distinct styles of leadership and use them to discuss the characteristics of a good leader.

(50% of marks)

b) In the context of leadership styles, outline the principles of delegation.

(30% of marks)

c) Give an example of effective delegation highlighting how these principles were achieved in a public health context.

(20% of marks)

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

(a) Include a definition 'leading a group of people or organisation'. A leader is 'a person who rules, guides, directs, influences or inspires others'. Traits: e.g. intelligence, self confidence, persistence.

Skills: e.g. knowledge, problem solving, social judgement
Characteristics of good leaders: e.g. understand the impact of their style on others, ability to delegate, communication, inspires, guides, influences, understands and listens (and contrast leadership with management)

Styles: e.g. Directive, supportive, consultative, participative
Tell - > Sell -> Participate -> Delegate

(b) Delegation principles e.g.

"Delegate responsibilities not tasks"
- Explain
- Train
- Monitor
- Praise
- Maintain responsibility

Good leaders understand their staff/ what motivates them and create a culture of personal development. They identify which staff can be delegated to; what task/ level of task is appropriate; and will review progress.
Good leaders praise achievement, ultimately aim to develop staff/ build competence through supportive practice

(c) A response using a relevant example of delegation (illustrating answer to b) in a public health context.

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

Good answers will describe an inspirational leader and include references to theories e.g. Adair's signposts to good leadership qualities/ situational/ functional), House's 4 styles of leadership or Mythodrama's leadership qualities

Examiners' comments

Most candidates were able to give reasonable answers but still, a number of candidates did not seem well prepared for this. Few candidates showed a real understanding of delegation. Many thought that it consisted of ordering or instructing other to perform tasks. It was surprising how many made up leadership styles were present in the answers. Credit was given where there was detail and description that matched a recognisable style. The opportunity to critique styles when discussing characteristics of good leaders was taken up by few. The examiner found that candidates had sufficient time to complete answers.

Good candidates were able to describe in detail and compare the different leadership styles, the relationship with delegation, and a few demonstrated how they really understood the meaning and importance of delegation in public health context.

Poor answers failed to define or describe basic leadership styles and did not demonstrate understanding of 'delegation.'

Common pitfalls included not being able to show examples of effective delegation in a public health context and not understanding the difference between delegation as a method of leadership through empowerment vs. delegation as ordering someone to do a task and ensuring they do it. The key concepts of responsibilities versus tasks was not well understood

In order to answer this question well, in addition to structuring answers, examiners advise candidates to understand the basic theories/ principles of leadership and think more about how these could be applied in public health.

Paper IIA

You are a specialist in a public health team in a town with high levels of deprivation and a relatively low-skilled workforce.

A physician with an interest in diabetes at your local hospital sends you a copy of this paper and wishes to know if the findings can be used to target health promotion activity in the area, specifically aimed at people of lower socio-economic status.

Contribution of modifiable risk factors to social inequalities in type 2 diabetes: prospective Whitehall II cohort study. S Stringhini et al. BMJ 2012:345:e5452doi (publ 21 August 2012)

Note to candidates: The paper has been reduced in length by deleting certain sections including the abstract and conclusion.

1. Critically appraise the paper.

   (40% of marks)

2. Explain what is meant by categorical and continuous variables and comment on their use in the analysis.

   (10% of marks)

3. The paper refers to Cox's regression model in the analysis. When should this technique be used and what are the underlying assumptions of this model?

   (10% of marks)

4. Write a short (300 words approximately) letter of response to the physician with an interest in Diabetes.

   (30% of marks)

5. A decision is made to develop a health promotion programme with the aim of reducing the incidence of type 2 diabetes in your health area. List (in bullet points) the key agenda items for the first meeting of the group.

   (10% of marks)

Key points

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

Question 1 – Critical Appraisal

- Was there a clearly focused question? – Looked at whether socioeconomic gradient in incidence of type 2 diabetes and associated impact of lifestyle factors in Whitehall civil servants.

Important public health problem (chronic disease, socioeconomic gradient in health status, impact of lifestyle factors)

- Was the type of study appropriate? Yes, study design – large, well-recognised prospective cohort study
- Were sources of information used appropriate? – range of methods used including self-report, clinical investigation, occupational records and healthcare records
- Was the analysis appropriate? - Use of Cox regression to examine impact of multiple variables on incidence of type 2 diabetes over time entirely appropriate

- Presentation of results – range of results presented in clear tables
- Results – obesity makes the biggest contribution to the socioeconomic gradient, raised lipids also contribute ~10% of difference, smoking little impact. Unhealthy behaviours explain ~45% of the socioeconomic gradient in DM – means that ~50% of the difference is still unexplained
- Validity of findings – study based on working population? generalizability, issues about repeated measurements, ?accuracy of risk factor data, particularly aspects that are self-reported or are in broad categories. Various sensitivity analyses undertaken
- Precision of results - Reported confidence intervals, Comment on how wide/overlap or not.
- PH significance: better understanding of the contribution of lifestyle factors to socioeconomic gradients, but still large proportion of difference is unexplained.
  Some issues highlighted about the difference in factors influencing incidence of DM vs. management of DM and how the socioeconomic and risk factors may influence differently.

Question 2 – Categorical and continuous variables

A categorical variable is any made up of data that can be divided into groups (categories) e.g. sex, race, socioeconomic status, while continuous variables represent measurements on some continuous scale, e.g. blood pressure, height, weight, income, age. In this study the variable socioeconomic status is "a comprehensive marker of socioeconomic status", being based on several relevant factors. As these show a linear trend, the authors state that the different categories can be regarded as a continuum, and so SE status is used as a continuous variable as in this case it can be measured to practically any level of precision.

Question 3 - Cox's regression

In prospective studies, when individuals are followed over time, the values of some of the covariates may change with time. Covariates can thus be divided into fixed (e.g. sex or race) and time-dependent, if the difference between their

values for two different subjects changes with time (e.g. serum cholesterol or weight). Lifestyle factors and physiological measurements are usually time-dependent. Cox can incorporate time-dependent covariates, and this is why it is of use here:

Cox regression (or proportional hazards regression) is a method for investigating the effect of several variables over the time a specified event takes to happen. Cox models the survival (time-to-event) probability. It does NOT however assume knowledge of absolute risk; rather, it estimates relative risk.

Proportional hazards assumption: the Cox proportional regression model assumes that the effects of the predictor variables are constant over time.

<u>Question 4 - Write a letter to local physician with an interest in diabetes.</u>

Use appropriate language for professional to professional correspondence. Thank them for their interest and acknowledge the extent of the problem of type 2 diabetes (extra marks for being able to give local figures to inform).

Give brief summary of findings, highlighting the key points (not just re-doing the critical appraisal) – results, any key limitations, any practical issues re implementation.

Demonstrate an understanding of the increasing importance of the problems arising from type 2 diabetes and the need to tackle this issue.

Give an outline of how findings could be applied locally.

Be pragmatic about how this might be implemented – do not raise unrealistic expectations. Recognise what can practically be delivered in a local setting.

Additional points for a very good / excellent answer

Candidates may suggest that this paper does not contribute much to the evidence-base over and above what is known. There is enough literature already available to know that physical inactivity, poor diet, obesity, smoking, are important risk factors, with higher prevalence in low SES, hence tackling these in low SES groups is important to prevent the unequal burden of type 2 diabetes. The difference in the % of the association between SES and diabetes that can be explained by these factors is not what determines whether health promotion activities should be developed or not. This does of course not detract from the scientific importance of the paper, but the contribution regarding this question is more limited.

On the other hand, there are still areas where the knowledge is scarce. In order to prioritize resources and better target health promotion activities it would be more important to know which segment of the population would benefit more, e.g. to know whether an intervention among children/young adults would yield better results than among adults.

<u>Question 5 - Bullet points for agenda</u>

- Membership

- Briefing paper outlining the context and giving the key findings from the BMJ paper.

- Terms of reference for the group

- Identifying population needs and key areas to target

- Resources available and additional resources required

- Suggested timescale for the work of the group

- Communications strategy

- Future meetings and working arrangements

Examiners' comments

General observations

Question 1 - Critical appraisal

Many candidates appeared to spend too much time in writing pages of often repetitive responses and/or paraphrasing the content of the paper instead of producing relevant key points. There was a tendency for some candidates to write down everything they could remember about some aspect of public health touched on in the paper, instead of sticking to relevant facts. Apart from attracting few marks, all of this left them insufficient time to produce satisfactory answers to the remaining questions, which accounted for 60% of the marks.

The key points of whether there was a clearly focused question and its importance as a public health problem were well done by most candidates, but the type of study was less well answered, with several candidates uncertain as to whether it was a prospective cohort study. Discussion on sources of information often covered pages of script when they could have been stated in a short paragraph. Most candidates agreed on the appropriateness of the analysis although some clearly did not understand why Cox regression was specifically used. One of the virtues of the paper was the presentation of the results in clear, easy to follow tables, which were not referred to by many candidates. The results of the impact of various risk factors were often lumped together, when in the paper, smoking was shown to have little impact and excess alcohol consumption was associated more with higher socio-economic groups. Most candidates appreciated the significance of raised BMI in the results, but few stated that the various risk factors still only explained about half the variation in incidence of type 2 diabetes between the different SEGs. The points concerning

the validity of the findings and precision of results were reasonably covered by most candidates, as was the public health significance of a better understanding of the contribution of lifestyle factors to socioeconomic gradients. However, as stated above, a large proportion of this difference is still unexplained.

Question 2 - Categorical and continuous variables

While most candidates were able to define these variables, fewer were able to comment on their use in the analysis, particularly on the advantages of using SE status as a continuous variable.

Question 3 - Cox's regression

Many candidates seemed to be unfamiliar with the use of Cox's regression in prospective studies when individuals are followed up over time and subject to covariates such as lifestyle factors and physiological measurements that may change over time, and also the underlying assumption in the model that the effects of the predictor variables are constant over time.

Question 4 - Write a letter to a local physician with an interest in diabetes

The letter of response to a fellow professional was particularly poorly done, often patronising in tone and indicated a lack of practice in work of this nature. The acquisition of communication skills is an important part of training in public health and can best be achieved through getting involved in departmental work at every opportunity.

Despite the public health importance of type 2 diabetes, very few candidates were able to quote figures from their own area with regard to the size of the problem locally. A summary of the findings of the paper led to few comments on its limitations other than its generalizability, or the fact that it did not contribute much to the evidence base over and above what is known. Again, half of the difference in socioeconomic gradient in this illness remains unexplained, a fact that very few candidates pointed out, or that a potential factor may be due to differences in access to treatment. More could have been said on the increasing importance of the problems arising from type 2 diabetes and the need to tackle this issue. Too many candidates assumed that they should respond to the physician's letter by going ahead and developing a local health promotion programme aimed specifically at type 2 diabetes, without first giving thought to what it might be possible to achieve within the resources available, or which segment of the population this programme should be aimed at for maximum benefit.

Question 5 - Bullet points for agenda

On the whole, this question was reasonably well, if somewhat hurriedly, answered. However, some candidates made no reference to any briefing paper in which to outline the context and give the key findings from the BMJ paper which would form a valuable source of up to date information, even if not totally generalizable. Any sort of communications strategy was also rarely mentioned.

General comments

Again, many candidates had very poor handwriting, which deteriorated further through the paper – this makes it very difficult for the examiners to make sense of the answer and award marks. Some candidates scrawled notes in the margin of paper and at odd angles which, as well as being difficult to read, is infuriating for examiners.

Many candidates appeared not to have sufficient time but this may have been for the reasons stated in comments about the critical appraisal (Q 1) above. Candidates need good time management skills to avoid allocating too much time to the critical appraisal question at the expense of the other questions in IIA. Candidates should also provide concise responses dealing with the key points of the critical appraisal, leaving more time to produce acceptable responses to the other sections of IIA.

Paper IIB Examiners' comments

In its current format, Paper IIB questions, key points and detailed examiner comments on each section are not released. The comments below are general remarks on candidate performance received from the examiners.

There were few candidates who showed a clear understanding of some of the concepts being tested, the majority showed some understanding, and a few struggled to describe the key concepts.

Some of the answers were long and verbose rather than being in bullet points or summarising the answers in the two or four sentences required. While most candidates gave reasonable answers to data interpretation questions, a number struggled with carrying out simple calculations and describing key concepts. For example some candidates confused statistical terms and concepts which resulted in erroneous arguments.

A number of candidates failed to address the questions asked. For example if a question asked the candidate to use the data provided then this is what was required and not a general answer on the topic in question. Most candidates seemed to attempt most parts of each question, suggesting that time was sufficient.

Candidates performed poorly by not answering the question, writing a lot of prose in the general area of the topic in the question and which was not focused on the interpretation of the data.

Advice from examiners includes the following: attention to exam technique - answer the question and keep in mind this the paper is primarily addressing data interpretation, knowledge about statistical and epidemiological concepts and skills in manipulating and calculating data. Candidates should show their working out and not forget to state the obvious especially in data interpretations and in calculations. Candidates should know definitions, data source strengths and limitations and be able to describe and summarise tabulated data.