DIPLOMA & PART I EXAMINATION FOR MEMBERSHIP OF THE FACULTY OF PUBLIC HEALTH MEDICINE

JUNE 1999
EXAMINATION PAPER

WITH EXAMINERS' KEY POINTS AND COMMENTS

N.B. Please note that these are Key Points and not model answers

DIPLOMA & PART I EXAMINATION FOR MEMBERSHIP OF THE FACULTY OF PUBLIC HEALTH MEDICINE

PAPER I

SHORT ANSWER QUESTIONS ON PUBLIC HEALTH MEDICINE

You must answer all eight questions

This paper is intended to test knowledge across the broad range of the discipline. Candidates will be heavily penalised if they fail to attempt any of the eight questions or give grossly inadequate answers to any of them. It is, therefore, essential that candidates ALLOW SUFFICIENT TIME FOR EVERY QUESTION.

1. Describe the epidemiology and control measures, in a named country, for **two** of the following four:
a) *Salmonella enteritidis* PT4 infection
b) Meningococcal disease in universities
c) *Helicobacter pylori* infection
d) Avian Influenza

2. Write short notes on indices of social deprivation for use in ecological studies in a named country.

3. Professor X undergoes a test for a certain cancer. She can be thought of as a typical member of a population in which the prevalence of the cancer is 1/1000.

The test has a sensitivity of 99% and a specificity of 95%.

a) Professor X is told that the result of the test is positive. She is very worried, and says that obviously it is 100% certain that she has the cancer. She is wrong. Advise her what is, in fact, the probability that she has the cancer.
b) In your view, is this particular test suitable for use in screening the population for the cancer? Justify your answer in concise notes.

4. A clinician observed that patients with cancer X diagnosed after a new screening test survived longer from diagnosis than patients who presented clinically. Summarise the possible reasons behind this observation.

5. You are impressed by a well-conducted systematic review of the clinical effectiveness of a new surgical technique, which has been reported in a well-known peer-reviewed journal. This technique is not in routine use yet. Set out the key issues you would address before recommending use of this new surgical technique in your local health care system.

6. Write short notes on the public health perspective of effective methods of getting smokers to stop.

7. The "medical model" of health is often criticised. State some of the criticisms, and give examples of how health professionals, and health systems, have responded to them.

8. What are the main features of Parsons' concept of the sick role? Explain the limitations of the concept for analyses of users' interactions with services.

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PAPER IIA

Candidates should answer one question from each of the four sub-sections A B C and D

Style, clear grammatical English and legibility will be taken into consideration by the Examiners

A. Epidemiology

1. Describe the epidemiology of Alzheimer's disease. Outline briefly the impact of Alzheimer's disease in the population in a named country.

2. Describe the epidemiology of obesity in adults. Outline briefly the potential consequences of obesity, and the main opportunities for reducing the impact of obesity in the population in a named country.

B. Environmental Health & Communicable Disease

3. Describe the attributes of an ideal surveillance system for communicable disease and infection. In a named country of your choice, describe how far these attributes are achieved by the relevant major routine surveillance system(s).

4. A problem with the sewage system between a residential area and an industrial site has caused the drains of the residential area to overflow with domestic and factory discharges. In one particular road this effluent has flooded through the ventilation bricks of a number of houses to contaminate the space beneath the ground floor floorboards. The effluent has been reported to be warm with a strong chemical odour. As a public health practitioner, what advice would you give to the responsible authorities about the investigation and management of this incident?

C. Health Information

5. Injury is an important cause of death in childhood.

a) Briefly describe what the data in Table 1 [overpage] show about mortality rates for injury in children.

b) What further analyses would you suggest (using the data in the table, that is death registration data and population estimates)?

c) Indicate two potential sources of data, apart from death registrations, which might be useful to build a more complete picture of non-intentional injury rates in childhood.

(please turn over)

Table 1. Trends in non-intentional injury deaths per 100,000 children (age 0-15 years) in England and Wales, by Social Class

	Mean Annual Death Rate		
Social Class	1979-83*	1989-92	% Decline
I	24.2	16.5	32
II	25.0	15.8	37
IIIn	24.2	19.1	21
IIIm	35.7	34.3	4
IV	47.5	37.8	21
V	84.7	82.9	2

** Excludes 1981 (data unavailable due to industrial dispute involving the registration service)*
Data source: UK Office of National Statistics

6. Discuss the strengths and limitations of routinely collected data about hospital in-patient activity. Describe briefly four ways in which such data could be used for public health purposes.

D. Statistical Methods

7. 200 patients enter a cohort study and after one year 170 are alive, 20 are lost to follow-up and 10 are dead; during the second year, a further 40 deaths occur but there are no losses to follow-up.

Calculate the one-year mortality rate and the two-year survival rate.

Describe appropriate statistical methods for the analysis of cohort studies with survival or mortality being the outcome variable.

8. Meta-analysis is frequently used to synthesise data from a number of studies when a systematic review is carried out. Explain the following terms, and their importance, with examples:

a) Effect size
b) Heterogeneity
c) Funnel plots.

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PAPER IIB

Candidates should answer <u>one</u> question from <u>each</u> of the four sub-sections E F G and H

Style, clear grammatical English and legibility will be taken into consideration by the Examiners.

E. Disease Prevention

1. Describe the main risk factors in the development of osteoporosis. What strategies should be adopted to prevent this condition in a defined population of your choice?

2. What arguments would you put forward to secure funding for a project to improve nutrition in low-income groups? What projects would you like to see in place across districts with mixed urban and rural communities?

F. Medical Sociology & Health Psychology

3. What are the ways by which gender influences health and the use of health services? How does this knowledge enable us to improve health through social and health interventions?

4. How do social inequalities influence health? Summarise broad areas of action, which can reduce social inequalities in health.

G. Social Policy & Health Economics

5. Outline how you would formulate and implement a policy to address the health needs of the socially excluded in your local population.

6. The funding for your local Health Services has been reduced by 3%. Describe and discuss how the principles and techniques of health economics could be used to help minimise the impact of this on the health of your population.

H. Organisation and Management of Health Care

7. What clinical, legal, professional and economic issues affect management in the community of chronic psychotic patients who are potentially violent?

8. Discuss, using examples, the possible conflicts that can arise when clinicians take on management roles.

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PAPER III
UNITED KINGDOM CANDIDATES

Candidates should answer <u>one</u> question from <u>each</u> section. Candidates are advised to spend approximately two hours on Section A and one hour on Section B

Style, clear grammatical English and legibility will be taken into consideration by the Examiners. Answers should be written in a form appropriate to the audience specified in the question.

SECTION A

1. The clinical director of your local obstetrics service sends your health authority a copy of the attached paper: **"Bastian H *et al*: Perinatal death associated with planned home birth in Australia: population based study (BMJ:1998;317:384-388)"** with an urgent request for a meeting to discuss the future provision of obstetric services for home delivery in your district.

The meeting will include the obstetric clinical director, your director of public health, and the chair of a local women's group, which supports women's choices in childbirth.

i.) Critically appraise the paper.
ii.) Prepare a paper summarising the key points for your director of public health to take to the meeting.

2. A group of local primary care practitioners has written to you, in your role as a public health practitioner, to suggest that it undertakes a widespread public education campaign, based upon the attached paper: **"Rawles J *et al*: Call to needle times after acute myocardial infarction in urban and rural areas in Northeast Scotland: prospective observational study (BMJ:1998;317:576-578)"**. They want to encourage the public to call their primary care doctor as a first line of action when experiencing symptoms suggestive of heart attack.

i.) Critically appraise the paper.
ii.) Write a reply to the group, summarising the pros and cons of the proposed campaign, and suggesting ways in which it might be improved.

SECTION B

3. There are increasing criticisms about the inappropriate use of antibiotics. A local newspaper has a weekly health page. Write a short article for the paper of about 600 words, for a general audience, to suggest how the topic should be addressed.

4. Two health districts have amalgamated. One had a 3-year and one a 5-year cervical screening recall policy. The new health district is considering standardising the interval at 5 years. A local women's group is calling for a 3 year recall policy to be adopted across the health district.

Your Director has agreed to take part in a local radio debate with the women's group. Write a briefing paper for your Director discussing the issues that may be raised in the debate.

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PAPER III
HONG KONG CANDIDATES

Candidates should answer <u>one</u> question from <u>each</u> section. Candidates are advised to spend approximately two hours on Section A and one hour on Section B

Style, clear grammatical English and legibility will be taken into consideration by the Examiners. Answers should be written in a form appropriate to the audience specified in the question.

SECTION A

1. The Hong Kong SAR Government has set up a task force to review the priorities for allocating donor liver grafts. You represent the Department of Health in the task force. The paper: **"Neuberger J *et al*: Assessing priorities for allocation of donor liver grafts: survey of public and clinicians (BMJ:1998;317:172-175)"** was one of the most recent publications in your medline search.

i.) Write a critical appraisal of the paper.

ii.) Outline briefly how you would proceed to conduct a similar study in the Hong Kong population, highlighting measures to ensure study validity.

2. The Hong Kong SAR Government has set up a task force to review the risks and benefits of post-menopausal hormonal replacement therapy in Hong Kong Chinese women. You are the public health specialist in the task force. The paper: **"Michaelsson K *et al*: Hormone replacement therapy and risk of hip fracture: population based case-control study (BMJ:1998;316: 1858-1863)"** was one of the most recent publications in your medline search.

i.) Write a critical appraisal of the paper.

ii.) Prepare a summary of the paper for non-medical members of the task force, highlighting the applicability and limitations of the results for Hong Kong Chinese.

SECTION B

3. There are increasing criticisms about the inappropriate use of antibiotics in Hong Kong. A reporter has requested an interview with the Director of Health. The Director has asked for your help in addressing this problem.

Write a briefing paper for the Director to prepare for the media interview and to suggest how the issues should be approached and discussed.

4. In the new Healthy Living Campaign of the Hong Kong Government, the Health and Welfare Bureau has requested you, as an independent public health specialist, to review the adequacy of tobacco control regulations in Hong Kong.

Write a memorandum to the Bureau on how you would carry out such a review.

KEY POINTS AND COMMENTS

PAPER I

QUESTION 1.

a) *Salmonella enteritidis* PT4 infection

Zoonotic infection**,** spread to humans commonly through food by faeco-oral route.

Salmonella enteritidis PT4 is currently the most commonly identified salmonella. Member of serogroup D. About 15,000 cases per year, incidence now stabilising.

It is principally found in poultry and their eggs. Causes septicaemia in the chicken and hence spreads even into intact eggs, it is also particularly heat resistant, an important factor when considering what types of foodstuff made with shell eggs can be considered to be safe, and is infectious at a relatively low dose. It causes a relatively mild illness in humans. Much of the UK flock was infected with *S. enteritidis* PT4 but it is now less common.

Incubation period 6 - 72 hours. Main symptoms vomiting, abdominal pain and diarrhoea associated with fever and general malaise.

Patients at extremes of life most at risk of dying from *Salmonella enteritidis* PT4 infection (but death is very rare). Can have prolonged excretion (as detected microbiologically) after clinical recovery, but carrier state appears relatively unimportant in spread, as numbers of organisms present in stools very low. Symptomatic food handlers must abstain from food handling as potential for spread much greater. Once symptoms have abated for 48 hours most people can return to normal activities.

Seasonal, peak in late summer.

The cause of most cases of *Salmonella enteritidis* infections is undercooked poultry or eggs, or cross contamination of other foods by raw poultry. Foods commonly implicated have been home made mayonnaise, mousse, scrambled eggs, egg puddings, as well as undercooked poultry itself.

Control measures

Control is by education of the public and the catering trade in good food hygiene (storage at correct temperature, right level in fridge), correct food preparation (separate areas and equipment for raw and cooked) and the use of appropriate facilities (don't try commercial catering in domestic premises).

Also eradication of salmonellae from poultry flocks and feed so that consumers are using uncontaminated raw materials.

Food handlers and others in risk groups for spreading enteric infections should be excluded from food handling, or communal activities until 48hrs after symptoms cease.

With all these a pass answer would be expected to cover the main points, whereas an excellent answer would cover virtually everything.

Comments

Candidates generally answered this question satisfactorily. However, some failed to mention the key

association between this serotype, poultry and eggs. There was also confusion about the current recommendations for exclusion: who needs to be excluded, for what time and whether, and how many stool samples are needed! As queries about this are very much bread and butter, candidates should be clear about it. In general, the control part of the question was superficially answered, with only a few candidates showing knowledge of kitchen hygiene and food storage procedures or that they knew of the HACCP approach.

b) Meningococcal disease in universities

Meningococcal disease is a particular problem in universities.

In the UK second highest incidence is in the late teenage (15-l9) age group, and within this group, first year resident students at university have higher incidence of meningococcal disease, particularly group C, than non-students of the same age.

This is thought to reflect increased social intimacy which occurs in the first year, rapid exposure to many different meningococcal strains; this is reflected in high carriage rate of meningococci in this group *(25%* vs 10%) although outbreak strains often have a low carriage rate but very high rate of clinical disease vs carriage.
Highest incidence found in catered accommodation, smoky communal areas (bars).

Stress of leaving home, new living circumstances.

Complex social and academic networks. It is often difficult to define a household group, and social networks may be more important. The setting favours transmission of meningococci. Young people susceptible to misinformation and panic.

Following large outbreaks in Southampton and Cardiff, all universities have drawn up contingency plans for cases of meningococcal disease. These look at communication between health and university authorities and the ability to effectively communicate with students staff and public. Plans also need to address the possible need to:

- establish an incident control team with appropriate membership from university, public health, primary care and PHLS
- vaccinate and prophylact large numbers of students (provide medical, nursing and clerical staff as well as facilities)
- establish a helpline
- maintain effective communication with students, staff, public and media

Meningococcal incident plans need to look at ways to raise awareness of meningococcal disease and its symptoms in students at all times, and at how to provide appropriate reassurance when necessary. Planned responses to an incident need to consider:

- certainty of diagnosis (confirmed, probable or possible)
- place of residence (hall of residence, private house, living at home)
- the configuration of local student health services
- any other possibly associated cases

Whether other cases are considered linked or not depends on:

- time between, usually needs to be within four week period and in same term
- needs to be a plausible link between cases
- organism needs to be the same (or possibly the same)

Routine vaccination of first year students not currently thought appropriate because:

- the majority of cases are still group B
- the vaccine only provides short term protection and may engender immune tolerance
- a better conjugate group C vaccine should be available soon
- other age groups (under 5s) have a higher incidence

An acceptable answer would cover most of the points above, an excellent answer would cover nearly all, and might include an assessment of the Cardiff and Southampton outbreaks.

Suggested reference material: National Meningitis Trust's "Managing meningitis in higher education institutions" (CVCP, June 1998).

Comments

Most candidates got the basic facts about meningococci right, but some failed to understand the importance of the relatively higher incidence of group C disease in university students as opposed to their peers of the same age outside. Most candidates pointed out the importance of having a high awareness of meningococcal disease symptoms in university students and having a policy to manage the media. Few showed any familiarity with the principles, described in the recent guidelines, for dealing with cases arising in universities, the division of cases into confirmed, probable or possible and guidance on how to decide whether or not the cases are linked.

c) *Helicobacter pylori*

- *Helicobacter pylori* was first isolated in 1982;
- Gram negative rod, inhabits the mucus layer of the stomach and proximal duodenum;
- Causes diffuse superficial chronic inflammatory process;
- Worldwide distribution;
- Human only species naturally infected;
- Infection equally common in males and females;
- In developed countries infection rare in childhood becomes more common with increasing age; at age 60, 50-60% prevalence of infection;
- In developing countries more common in all age groups;
- Infection largely seems to be acquired during childhood;
- If child infected, mother usually infected;
- Clustering of infection in families;
- Prevalence and incidence of infection high in situations where sanitation and hygiene standards poor, such as institutions for people with learning disabilities;
- A risk factor for infection is low socio-economic status;
- The incidence of infection appears to be falling in the United States, though to be linked to decreased crowding and better sanitation;
- Transmission is thought to be faeco-oral, but may also be oral-oral, has been isolated from children's faeces;
- Transmission has taken place through contaminated endoscopes.

Role in ulcer disease
~ almost all patients with peptic ulcer disease are infected with *H.pylori*;
~ rates of cure of ulcer disease without relapse much improved if *H.pylori* eradicated;
~ thought that chronic superficial gastritis goes on to ulcer through lowering gastric somatostatin which increases gastrin which causes ulceration;
~ eradication of *H.pylori* causes normalisation of gastric epithelium.

Diagnosis

Endoscopy and biopsy, serology, breath test or a combination

Treatment

Either a combination of a Bismuth salt plus two antibiotics such as metronidazole and amoxycillin or, omeprazole plus 2 antibiotics.

This was probably the best-answered section of this question, with almost all candidates giving almost all of the basic information. Some however attempted to give definitive answers in areas where considerable doubt exists - it is probably wiser to point out that uncertainty still surrounds some areas of knowledge!

d) Avian Influenza

The following would contribute to a pass:

Background

The pandemic of 1918 was caused by H1N1 virus.

Epidemics of the 1950's and 1960's caused by H2N2 and H3N2 viruses respectively.

These later viruses originated from avian viruses and entered the human population after reassortment with human influenza virus strains; the H1N1 probably did not reassort with avian virus.

Extensive reservoir of influenza viruses in avian species which could transmit to other species.

In 1977 in Hong Kong a "new" virus, influenza A H5N1, caused a respiratory illness and the death of a 3 year old boy with Reye's Syndrome. 17 further cases and 5 deaths followed.

In the 1950's and 1960's epidemics it is thought that the virus emerged from the pig "mixing vessel" after a reassortment between avian/human viruses.

The 1997 virus probably crossed between birds and humans without adaptation in another mammal. Spread and reassortment of the virus may be promoted during human influenza outbreaks with humans being the "mixing vessel". Man to man transmission is inefficient but this pattern may change.

Control Measures

Monitoring of influenza virus types in a range of wild and domesticated avian species, including quail, pigeon, duck, geese and chickens.

Monitoring animal husbandry practices and hygiene on farms in Southern China (the putative epicentre of the epidemics/pandemics of influenza); especially close proximity of birds and pigs with humans. New licensing criteria for farms. All flocks tested during growing period. Discontinuation of mixed farming (waterfowl, chickens, pigs).

Controls on transportation and marketing of birds; market hygiene monitored, with high standard of cleanliness. Segregation and observation of birds on the mainland for 5 days before export. Rapid diagnostic tests applied to batches of live birds on arrival in Hong Kong. Segregation of chickens from waterfowl at all levels.

Slaughtering of birds on farms if infection detected during growing phase. (1.5 million chickens killed in the 1977 outbreak.)

Improved surveillance of influenza, especially gene sequencing and genetic epidemiological studies.

Follow-up veterinary surveillance and laboratory studies of farms and market bird populations to document the emergence of an outbreak.

The following would improve an answer to "excellent":

The HK 1997 virus was not the result of a reassortment because all genes of the virus are of avian origin.

In April 1999 two cases of respiratory febrile illness were caused by H9N2 influenza A infection.

The virus usually causes mild illness in birds and domestic poultry.

However the significance of the H9 virus is that it can change and reassort and could become more easily transmissible. Reassortment with H5 species could lead to outbreaks caused by infection with a virulent virus.

The H9 cases have heightened the need for comprehensive epidemiological monitoring; identification of the risk factors for and mode of transmission.

H5 virus has been associated with other clinical conditions (e.g. conjunctivitis) but the 1997 outbreak is the first of respiratory infection.

In influenza A viruses only those carrying haemagglutinins H1, H2, or H3 and N1, N2 neuraminidases had previously been shown to cause human disease before the 1997 and 1999 outbreaks.

Influenza A H5 N1 meets two of the three main criteria for a new pandemic influenza virus:
~ Replication in humans;
~ Absence of antibodies to the virus in the general population;
~ Potential to spread from person to person rapidly (not so far observed).

Comments

This question was included to give a fair range of choice to candidates from some countries where option b) was not considered a topical public health concern by the examiners. Anyone who did not know the antigenic structure of the Hong Kong avian influenza virus was going to struggle with this question! Candidates needed to be able to describe how antigenic change in influenza takes place, and how influenza viruses from different species can reassort.

General Comments on all options

Given the wide choice available, this should have been an easy question. However, there was wide variation in the standard of the answers. Only a minority of candidates specified the "named" country. Incubation periods were only rarely given (less often correctly!). Not all candidates were clear about the necessary control measures for each given disease.

QUESTION 2.

Most or all of the following required for a pass:

- Used to analyse relationship between social deprivation and health at the population level
- Can be single variables or composite scores (e.g. Townsend)
- Problem of defining and measuring deprivation (social or material), poverty, class, etc.
- Use data usually collected for another reason (e.g. census) - have to 'make do'
- Subject to the ecological fallacy (may not accurately reflect association between deprivation and health at individual level)

Additional points:

- Alternative composite scores: Townsend, Carstairs, Jarman Index, DoE 'z' score
- Components of named measure e.g. Townsend:
  - ~ Unemployment
  - ~ Overcrowding
  - ~ Car ownership
  - ~ Owner-occupation of house
- Individual variables may be inter-related (e.g. unemployment and car-ownership, or ethnicity and overcrowding): risk of double counting
- Some measures of deprivation may vary between populations independently of income (e.g. car ownership between urban and rural areas)
- May be subject to effect modification and confounding
- Jarman index is actually a measure of GPs' assessments of factors influencing their workload, rather than a measure of deprivation *per se*
- Unit of population (e.g. electoral ward) may not be socially homogenous and borders may be arbitrary.

Comments

This question was answered well by most candidates. The majority gave both the basic facts and some additional discussion; answers appeared to reflect a real interest in the subject, and wide reading on the part of several candidates. Some otherwise excellent answers did not include a definition of ecological studies. Again, the "named" country was not always stated. Candidates who did less well may have only concentrated on individual indices without giving examples of the composite indices (Carstairs, Townsend etc.).

QUESTION 3.

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

From the data, we construct a table, for 1000 representative people in the population group:

	disease +	disease -	total
test +	0.99	49.95	50.94
test -	0.01	949.05	949.06
total	1	999	1000

(using the facts that 1 person in 1000 has the disease; 0.99 of this notional person will test positive; and 5% of the 999 without the disease will test positive)

a) The probability that Professor X has the disease is 0.99/50.94 = 11/566, approximately 1/55, or 0.019 (less than 2%).

b) Either "yes" or "no" could be justified, depending on associated circumstances:
- standard points about screening tests: existence of effective treatment for disease detected, importance of health problem, acceptability of test, overall cost benefit;
- personal and health consequences for individuals of false positive (and false negative) test results: as shown, over 98% of those tested positive will turn out not to have the disease, and may suffer anxiety and additional interventions while this is established;
- organisation and management (and opportunity cost) of overall screening programme within which the test is just one component.

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

- Depends on the precise population group designated to be screened (for example, age range)
- Explicit mention that (a) is the positive predictive value
- Mention or demonstration of sensitivity of predictive values to precision of sensitivity and specificity, which are often not known accurately.

Comments

This question was answered better than the corresponding question in January 1999. Most candidates who did badly, did so because they showed very poor understanding of the quantitative aspects of sensitivity, specificity and positive predictive value.

QUESTION 4.

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

Possible reasons behind the clinician's observation:

1. Chance

2. Bias

Possibilities include:

- selection bias: patients who came forward for screening may be more healthy than those who were not screened;
- lead time bias: length of survival from diagnosis may appear longer among those screened, not because the time at which the patients die is postponed but because the point of diagnosis is brought forward;
- length bias: cancers picked up by screening may be less aggressive than those which present spontaneously;
- treatment bias: those who were diagnosed via screening may get better treatment than those who present clinically.

3. A true causal effect

Screening for the condition is effective in prolonging survival and reducing mortality.

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

- We might be able to assess whether the result has arisen by chance through examining sample size and confidence intervals for survival estimates;
- A well-designed prospective evaluation of the new screening test should include data collection aimed at detecting the possible biases.

Comments

This question was answered reasonably well. However, relatively few candidates said that the results might have arisen by chance, and several omitted to say that the results might indicate a true effect.

QUESTION 5.

APPRAISAL CHECKLIST - NEW SURGICAL TECHNIQUE

The proposed new service	A succinct statement of what is being proposed and how it differs from, adds to or replaces the current service.
Epidemiology	What is the nature and scale of the clinical problem in our area, for which this innovation offers a solution? Prevalence (existing cases) and Incidence (new cases)? What are the likely demographic trends over time?
Effectiveness	What is the quality of the evidence? Can the research evidence be extrapolated to our area? How many people will benefit or not benefit? (State "Numbers needed to treat" where applicable) On average, what are the likely benefits, e.g. longer life, improved quality of life, better experience of care, or improved efficiency? What are the adverse effects of treatment, and how many people will be expected to have them?
Economics	What are the added costs? Are there savings? Where and when do costs and savings fall? Is the overall added benefit commensurate with the overall added cost?
Equity	How do the benefits of using resource in this way compare with other ways of using the same amount of resource? Is there some other area of activity in which we should now disengage? How well does this proposal fit with current strategies and priorities? Are we satisfied that we are maintaining a fair distribution of resources between care groups and providers? What do we know about patients' wishes?
Education	How will we raise awareness of the changes? Is staff training required? Who will compile the guidelines for staff, patients and carers? Are shared care protocols needed? Is this such a significant change that a major publicity campaign or public consultation is called for?
Execution	How do we make it all happen? What are the separate tasks and who will do each? Do we need to negotiate a new service level agreement?
Evaluation	How will we know if it is working according to plan? What programmes of clinical audit, contract monitoring and reporting do we need to establish?

Comments

In general, this question was answered well and a high proportion of candidates achieved a pass mark. Those who failed had not answered the question and did not recognise that this question was *not* about the strength of the evidence but about getting research findings into practice. Many candidates had a clear grasp of the need for local consultation, and most of the terms on the checklist of key points above were covered well, with the exception of patient expectation, education and evaluation.

QUESTION 6.

Recent key publications: the Agency for Health Care Policy and Research "Smoking cessation" in 1996; "Guidelines for smoking cessation" Thorax 1998, British Medical Journal 1999; Government's White Paper on tobacco "Smoking kills" December 1998; the NHS circular on "Smoking cessation services" Spring 1999; CRD "Effectiveness Matters", Cochrane Review.

Essential Points:

- Stop cigarette advertising and sports sponsorship.
- Effective health education initiatives; particular focus on the proven effectiveness of TV media; National No Smoking Day; telephone helplines.
- Ensure health care premises and surroundings are smoking free.
- Facilitate other environments to become smoking free.
- Provide guidance on smoking cessation strategies and plan specialist smoking cessation services.
- Priority groups – young people and adults who want to quit, particularly the socially disadvantaged and pregnant women - high risk of MI or post MI.
- In all health care settings – Assess the smoking status of patients at every opportunity; Advise all smokers to stop; Assist smokers who wish to stop by initiation and/or advice about approaches to cessation therapies and sources of support available; arrange follow up.
- Taxation - price elasticity 0.5. Most marked effect on low income young people and social classes IV/V - the latter can be seen as repressive and may have indirect adverse effects.
- Concept of assessment and the Stepped Care approach – intensity of the patient's motivation to stop determines the extent to which increasing external efforts and support should be brought to bear in helping smoking cessation (also supportive evidence from other areas of substance dependence).
- Nicotine replacement therapy is effective whether delivered by gum, patch, nasal spray or inhaler – it is most important in the first week of smoking cessation.
- The intensity of nicotine replacement therapy should be matched to the degree of physical dependence on nicotine.

Additional Points for an improved answer:

- Smoking assessment and monitoring by means of carbon monoxide in breath or biochemical assays may be helpful.
- During smoking cessation behavioural support from counsellors and appropriately trained nursing staff may be helpful.
- Prevent smuggling.
- Prevent those under16 years of age from buying cigarettes.
- Acupuncture has not been shown to be effective.
- Pharmacological agents such as buspirone, naloxone, clonidine and various tranquillisers have not proven effective.
- Recent studies suggest that the long acting antidepressant bupropion, which modulates dopaminergic activity of the brain, may increase the rate of smoking cessation even more than nicotine replacement therapy.

Comments

It was particularly disappointing that not one candidate from this sitting included the concept of stepped care geared to the intensity of patients' prior motivation. This is a long established principle for treatment of any drug of dependence potential, alcohol and smoking. It is also prominent in AHCPR "Smoking Cessation" in 1996 and in subsequent HEBS guidance.

QUESTION 7.

Suggested answer:

Broader determinants of health (McKeown) Most health improvements come from social and lifestyle changes. Medical model credited with improvements in health, distorting investment as health care receives even more money. Others (Dubos) argue that medical model is a reductionist approach, paying little attention to the wider environment.

Response: Increased political attention to social determinants of health, broader public health approach, interest in inequalities and social exclusion.

Clinical, social and cultural iatrogenesis (Illich)

Clinical: Direct iatrogenesis.

Social: Health policies re-enforce harmful practices by focusing concerns on more therapies rather than underlying causes.

Cultural: Technological solutions in hands of a few, deprives communities of ways of coping.

Responses: Interest in clinical governance (clinical iatrogenesis). Broad public health interest in solutions developed in local communities.

Medicalisation of normal life

Re-definition of problems as medical, deviance from medically defined norm. Criticisms around childbirth (Oakley), mental health (Goffman).

Response: User movements (see also consumerism below). Increased de-medicalisation of childbirth, interest in home deliveries / more positive childbirth experiences. In mental health, re-definition of normality in some cases (e.g. people who hear voices but do not have other symptoms of psychosis).

Consumerism/ Professional Dominance

Professional dominance (e.g. Friedman) distorts relationships, makes it harder for people to participate in their own care (see also medicalisation of normal life). Doctors define illness and control response (Friedman), including decisions on patient group / service responses. Decisions may be based on professional advantage, rather than consumers' needs.

Response: Patients' charter, league tables, increased involvement in decision-making, advocacy. Also managerialism, giving increased control over activities previously left to professionals (such as workload/focus of work). Greater decision-making role for other groups.

Scientific Criticisms (Archie Cochrane et al)

Medical model approaches often based on unproven assumptions, tradition, no evidence of cost- or clinical-effectiveness.

Response: EBM movement, increased use of RCTs, rise of "scientificism" over judgement.

Marking

Three or more categories, with appropriate responses, expected for a pass. Good candidates will identify more criticisms and responses, relate to relevant authors, possibly including macropolitical critics such as Navarro.

Other Points

The medical model has been criticised as not giving sufficient priority to Health Promotion. Responses include wider definitions of health, and frameworks which include greater attention to community wishes and priorities. The medical model also has limits on how it copes with disability and chronic disease.

Comments

In general, this question was reasonably well answered. Some candidates believed the medical model was that described by the WHO definition of health. This caused them great difficulties when trying to answer the rest of the question. One or two candidates also assumed that "responded" in the question meant "defended" and responded in this manner when a more dispassionate, critical analysis would have been better. The best answers were very good. However, too many answers were atheoretical, with no overt reference to literature or key authors.

QUESTION 8.

Suggested answer:

1. Allows withdrawal from some obligations such as work or family duties.
2. Exempts people from responsibility for their medical condition.
3. Person has a social obligation to improve/try to get well.
4. Expected to seek out competent help from a trained worker.
5. Medicine acts to provide legitimisation and social control.
6. Describes the rights and obligations of doctors including the requirement of even-handed treatment, and the use of appropriate skills, but in return of the right to conduct intimate examinations as appropriate.

Limitations

- Sick role end process of complex help-seeking behaviour (Mechanic, Suchman, Rosenstock).
- Works better for acute than chronic illness.
- Parsons assumed all patients treated the same - work in primary care finds social class differences in attention and diagnosis.
- Doctor-patient relationship more complex than Parsons recognised.
- Does not address systematic disagreement between doctors and patients (Pilowsky, Suchman).
- Access to sick role conditional (Friedson).
- Post-modern critics of functionalism argue that whole concept of structural-functionalism is flawed as conflict inevitable part of interactions.
- Sick role not relevant to Health Promotion and Prevention initiatives.
- Individuals may be stigmatised by the nature of their illness despite adopting the sick role.

Marking

All of features of sick role expected, and first four bullet points expected for a pass. Good candidates will identify more, and relate to relevant authors.

Comments

The majority of candidates had no difficulty in describing the concept of the sick role and its various obligations and responsibilities for doctors and patients. A few candidates wrote at length on one or two limitations of the sick role, when spending less time on a larger number of criticisms would have made for a better answer. Many of the answers seemed to be largely atheoretical, but again the best answers were very good and indicated a broad understanding of structuralism and its later critics.

PAPER IIA

QUESTION 1.

- **Definition**
  Alzheimer's disease (AD) is the name given to a group of dementias, first described by Alois Alzheimer in 1907. It accounts for about 70% of all cases of dementia. It is associated with progressive ventricular dilation and global cortical atrophy. Loss of cholinergic neurones occurs early in the disease while other neurotransmitter systems are involved later. In all cases, the deposition of beta amyloid protein in the form of neuritic plaques in the hippocampus and areas of the cerebral cortex occurs. There is no accepted approach to identifying early dementia. The process of diagnosis of AD requires a search for other disorders to exclude other causes of dementia.

- **Occurrence**
  The condition is usually sporadic but can be familial. Several genetic loci have been identified. It is a major cause of disability in older adults. Prevalence data for dementia in Europe from the EURODEM group estimates about 6% of people aged over 65 and over 15% of those over 80 and is more common in women . In the UK population, a Health Authority of 500,000 residents would have about 5,700 residents with dementia – 4,000 of whom would have AD (about 2,400 of these would have mild or moderate disease. The strongest risk factors for AD are ageing and the female gender.

- **Impact**

1. Impact on the patient. AD leads to impairment in cognitive function and many behavioural problems. As symptoms worsen the level of care needed increases. Admission to a nursing home may be required, and in patients with severe AD continuous care may be necessary. AD is also associated with depression and frequent falls and accidents.
2. Impact on informal carers. Carers have to cope with changes to their own practical and social routines as well as changes in the behaviour and wellbeing of the AD patient. The physical and psychological health of carers is often adversely affected. There are additional impacts on carers of patients with earlier onset AD, because they are younger there are more likely to be financial problems.
3. Impact on formal care systems. People with AD who have significant cognitive impairment and are living at home are likely to use a range of health and social care services. Institutional care in residential and nursing homes, and hospitals accounts for the greatest proportion of the cost of caring for people with AD. In the UK, about 40% of the cost of caring for people with AD falls to the NHS, and 60% is borne by the client or social services.

- **Public health roles in management of AD in a population**

~ Public health input into planning pathways to accurate diagnostic service and provision of appropriate services to patients and carers (outlined above).

~ Impact of drug treatments for Alzheimer's Disease on services for diagnosis and treatment of the disease is potentially huge. Discussion on management of competing priorities within limited health care resources worth highlighting. The initial focus on new drugs for AD has been on cholinesterase inhibitors. Donepezil is the first drug of this class licensed for this indication in the UK. There is evidence that donepezil is efficacious in producing some improvement in cognitive functioning in a highly selected population with mild to moderate AD. The evidence shows that in this population it will delay progression of the disease by about three months. No evidence yet to suggest effect on disease endpoint or on overall rate of decline in the long-term. No significant improvements in ADL nor quality of life were demonstrated in the published studies. In the UK SMAC guidance on the introduction of donepezil has

been sent to all doctors. Large gaps in knowledge. Potential major costs because of the large number of eligible patients

Comments

The few candidates who chose to answer this question scored highly, with well structured, comprehensive responses.

QUESTION 2.

- **Definition**. Body mass index (weight in kg/(height in metres)^2 is used as an indicator of choice to estimate ranges in total body fat. The WHO expert committee describes BMI of 25-29.9 as overweight, 30-39.9 as obese and >40 as severely obese. Distribution of body fat around the abdomen (centralised) increases risk of developing hypertension, type-2 diabetes mellitus and cardiovascular disease.
- **Occurrence**. The prevalence of obesity is increasing in the developed industrialised world. Increase in prevalence in the UK in recent years. In the 1996 Health survey for England, 45% of men and 34% of women were overweight, 16% of men and 18% of women were obese and about 1% were severely obese.
- **Risk factors**. Imbalance between energy consumption and expenditure. Increase in sedentary lifestyles and reduction of physical activity, greater consumption of high-calorie fast foods, probable inherited tendency to obesity. Lower social class and educational attainment is associated with increase in prevalence of obesity. South Asians have greater risk of centralised obesity. Smoking cessation is associated with weight gain.
- **Consequences of obesity**.

1. **Diabetes mellitus**. As weight increases, so does risk of type-2 diabetes. In women weight gain of 5-8kg doubles risk and 8-11kg trebles risk. Risk reduces as weight is lost. In those with pre-existing type 2 diabetes, weight loss improves blood glucose profile and may reduce need for medication.

2. **Hypertension**. Obesity is associated with increased risk of hypertension. In hypertensive obese people, weight loss reduces blood pressure by about 1-2mmHg per kg.

3. **Hyperlipidaemia**. Obesity is associated with higher serum concentrations of LDL cholesterol and triglycerides, and lower HDL cholesterol.

4. **Coronary heart disease**. Distribution of body fat around the abdomen (centralised) increases risk of CHD.

5. Increased risk of other conditions such as gallstones and symptomatic osteoarthritis in weight bearing joints; breast and uterine cancer in women; and possibly prostate and renal cancer in men.

- **Reducing the impact of obesity**.
  Population approaches:

1. Potential national measures include: food pricing policies; food labelling policies; integrated transport policies; ensure sound information on diet and benefits of exercise.

2. Potential local measures include: initiatives targeted at improving access to healthier foods and tackling food 'deserts'; providing incentives to walk or cycle to work; encourage development of healthy schools, workplaces and environments; cheaper access to leisure facilities; targeted health information; ensure provision of good quality services to those at high risk.

- **Local strategy for reduction of the impact of obesity should include the following evidence-based treatment options.**

People who are obese or have BMI>25 with symptoms of heart disease, type 2 diabetes, hypertension, hyperlipidaemia or symptoms related to bulk should be offered treatment. The aim of treatment should be to reduce or prevent the morbidity associated with obesity.

1. **Dietary change**. Most reliable way is with mildly hypocaloric diet (5-600kcal/day reduction from previous intake) plus modest increase in physical activity.

2. **Exercise**. Increased physical activity alone and in combination with diet can produce and maintain worthwhile weight loss.

3. **Behaviour modification**. The aim is to produce lifelong habit change.

4. **Drug therapy**. Consider for obese people, and overweight patients with significant co-morbid disease or risk factors in whom the above have failed.
   ~ **Phenteramine** – centrally acting catecholaminergic drug as a treatment adjunct for up to 12 weeks in patients with moderate or severe obesity.
   ~ **Orlistat** – an inhibitor of GI lipase enzymes. Reduces dietary fat absorption. Little is known about role in long-term management of obesity with this drug.

5. **Surgery**. Gastroplasty or gastric bypass is conventionally recommended for patients with BMI of 40 and over, or >35 with associated cardiovascular disease risk factors. It is an effective treatment option. Complications include vitamin and mineral deficiencies, dumping syndrome and feelings of fullness, as well as mortality from the operation.

6. Comprehensive treatment and maintenance programmes. Maintenance programmes have been associated with sustained weight loss.

Comments

The vast majority of candidates answered this question. The responses were reasonable in general, with better candidates providing well structured and well balanced answers.

QUESTION 3.

Most of the following would be required for a pass:

Name of the country

Definition of surveillance

The systematic collection and use of epidemiological information for the planning, implementation and assessment of disease control (WHO 1968).

Purposes of surveillance

- Characterises disease patterns by time, place and person
- Detects clusters/outbreaks/epidemics
- Suggests hypotheses
- Identifies cases for epidemiological research
- Evaluates prevention and control programmes
- Predicts future health care needs

Establishing surveillance systems

- Definition of objectives - what, who, how
- Case definition and dataset
- Implementation of collection and interpretation of data and dissemination of information - methods, timeliness, completeness, confidentiality, active versus passive, organisational structures, availability of resources, costs

Process of surveillance

- Data collection - e.g. in England and Wales; statutory notifications, laboratory reporting
- Data collation - record linkage, reconciliation of data from multiple sources, eliminating double counting (cases/specimens)
- Data analysis - descriptive; time, place, person, trends, geographical distribution, risk factors, morbidity/mortality, numbers/rates
- Data analysis - analytical; application of statistical methods, association/causation
- Data interpretation - application of epidemiological knowledge and principles, appreciation of limitations of statistical analysis
- Data dissemination - define purpose and target audience, timeliness and frequency, format and design

The following will raise a pass to a "good" or " very good":

A well structured answer, which relates the principles to practice.

A demonstrated understanding of routine, enhanced and active surveillance.

Use of disease examples to demonstrate salient points.

A demonstrated clear understanding of the strengths and weaknesses of the major routine surveillance systems in the named country.

Mention of the need to evaluate/audit surveillance systems - review objectives, describe the process, assess performance, (comprehensiveness, completeness, timeliness, representativeness of all cases, accuracy, acceptability, flexibility, simplicity, cost) and recommendations for change.

Comments

50 out of 61 candidates answered this question. There were very few "good" or "very good" responses. Candidates tended to regurgitate too much detail about a range of routine surveillance systems rather than concentrating on a discussion of the attributes of an ideal system, and how far these applied to specific surveillance systems. Consequently the question was not specifically or comprehensively answered by many candidates. A general lack of understanding about the fundamentals of disease surveillance was evident, and demonstrated experience of the practical use of communicable disease surveillance systems was lacking. Some responses lacked structure.

QUESTION 4.

Information gathering and immediate management

Request a summary of what is known about the incident from the responsible authorities - in this case it is likely to be the water authority and local environmental health department. The information must include what has happened exactly, what the chemical(s) is (are) likely to be, when it happened and whether it is still continuing. Consider role of environmental sampling.

It is important to find out if any casualties have occurred and been taken to Accident and Emergency. (Contact A&E and Ambulance service.)

Also, get information on what is being done to manage the incident now.

Obtain information on likely effects of chemical from CIRS (Chemical Incident Response Service) or equivalent.

Based on this information, take steps to advise on prevention of ill health in those already exposed, incident containment and prevent further contamination.

Consider shelter and evacuation for those affected and those at risk, and removal of containment.

Health risks

Define the affected and at risk population.

For those not obviously ill or taken to A&E, assess health of those exposed — could be by questionnaire and/or medical examination. Alert local general practices.

Collection of samples may be necessary based on advice on health effects from the Chemical Incident Response Service.

Review health effects and risk of further health effects.

Provide information to exposed population, for the public in general, and health and various other professionals.

Communication and management infrastructure

Refer to health authority/district emergency plan
Participate in multi-disciplinary incident control meeting
Produce press release/Alert members of the public
Consider setting up a helpline.

The following will raise a pass to "good" or "very good":

1) Demonstrate a clear understanding of the roles and responsibilities of the various agencies.

2) Mention of national guidance.

3) Knowledge of local/regional/national support and advice structures.

4) Regular communication for those who are affected by incident in terms of symptoms and signs of ill effects and how decontamination is progressing.

5) Ensure all relevant member of Health Authority are informed of incident and request extra support if required

6) Longer term epidemiological surveillance — how organised, what information collected.

7) Ensure protective clothing is available for A& E and ambulance staff and for investigating officers (e.g. Environmental Health).

8) Ensure adequate decontamination facilities set up in A & E and at site if necessary.

9) Review/audit of incident and its management.

Comments

Only a small proportion of candidates attempted this question. There were, however, one or two exceptionally good answers which seemed to demonstrate some practical experience (real or exercise) of dealing with such incidents. Most candidates who attempted the question produced a description of what would be an appropriate Public Health response to such a situation.

QUESTION 5.

a)

The table shows the death rates from non-intentional injury per 100,000 children aged 0-15 years by social class over two discrete time periods, 1979-83 and 1989-92. Data from the first period does not include 1981.

- Numbers of deaths are not shown. Rates have not been standardised for age or sex.
- A clear social class gradient is shown for each time period, increasing markedly between social class 4 and 5
- Death rates have declined in all groups over the time period, but much more so in Social Class 1 and 2

- This has resulted in a widening of health inequalities and an increasing social class gradient from 3.5 to 5 fold over the two time periods.

b)

- Number of deaths and size of denominator populations by social class (especially important given the decline in the numbers in social class 5)
- Age and sex specific death rates
- Cause- specific death rates
- Standardisation by age and sex and confidence intervals on data; chi squared test for trend
- Data from the intervening time period, and a more recent time period
- Analysis by place of residence / death

c)

- HES data; A&E data
- Coroners Records
- Police Road Traffic Accident Reports (Stats 19)
- Other possible sources are information from Fire Brigade; Trading Standards or Health and Safety Executive

Comments

This question was generally well answered. Some candidates confused intentional and non-intentional injury. A number failed explicitly to comment on widening inequalities.

QUESTION 6.

a) The major hospital data set in England is Hospital Episode Statistics (HES)

HES collects a minimum dataset on all hospital admissions including day cases:
- data on source of referral, admission and discharge
- patient socioeconomic details
- "consultant episode" including diagnosis (ICD 9 or 10) and intervention codes (OPCS IV)
- administrative details about the contract under which care was provided
- Data is coded locally and collated centrally

b) Data can be considered in terms of the following: completeness, accuracy and timeliness

Strengths
- Data on all admissions is routinely collected
- Theoretically all admissions coded according to the same ICD and OPCS classification
- Data routinely available
- Linkage via NHS number theoretically possible

Weaknesses
- Although in theory data on all admissions is collected, in practice, completeness of coding of main diagnosis and intervention may be variable
- Quality of coding of diagnosis and intervention is of concern (done by local coding clerks within hospitals)
- Data provides minimal data for use in case mix adjustment if seeking to examine clinical outcomes
- Data relates to finished consultant episodes (FCEs) not patient admissions
- Variable inclusion of outpatient attendances
- Not currently linked to other data sets

c)

i. Monitoring contracts

Information of the number of admissions and length of stay by speciality and hospital over time can be provided. This is the primary function of HES data.

ii. Planning health care

Examination of HES data can provide information on age, sex, diagnosis and number of admissions, LOS, number of procedures over a period of time that can be used in planning services

iii. Health needs assessment

Examination of population based rates of interventions by district health authority of residence can provide information on levels of care provided e.g. rates of coronary artery by-pass grafting.

Information on prevalence of underlying conditions limited by influence on admission rates by supply factors

iv. Assessing quality and outcomes of care

HES data can be used to examine quality of care e.g. mortality rates in hospitals following surgical intervention

Comments

This question was reasonably answered. Several candidates had no knowledge of the contents of HES, and several failed to describe strengths and weaknesses of existing data. Little mention was made of recent uses of this data e.g. Clinical Indicators.

QUESTION 7.

Most of the following would be required for a pass:

The analysis of mortality with a variable follow-up period involves using clinical or actuarial life table approaches.

Losses to follow up are assumed to occur equally throughout the year. 200 people enter the study at the beginning of year one; the losses to follow up are assumed to occur on average at 6 months and so the adjusted number at risk in year one is 190 person years. 10 people die so the probability of death in year one is 10/190 = 0.053. The probability of surviving year one is thus 1- probability of dying = 0.947.

At the beginning of the second year there are 170 survivors left in the study. There are no losses to follow up in the second year, 40 more die, and the probability of dying in the second year is 40/170. The probability of surviving is again 1 - prob(dying) = 0.765 . The probability of surviving to the end of year two is the probability of surviving year one multiplied by the probability of surviving year two = 0.724.

The main assumption underlying the clinical life table is that withdrawals due to study termination and losses to follow up experience a similar outcome as those actually followed up for a longer period. As this may not be the case for losses to follow up, follow up should be as high as possible.

The following statistical approaches can be used for survival type data:

Comparison of proportions surviving (dying) at a fixed point in time - only suitable if all the study subjects who have not died have been followed up for the particular length of time e.g. five years with no losses to follow up. Mantel-Haenszel or logistic regression can be used to adjust for confounders.

Calculation of person years at risk as a denominator and rate of deaths/person years at risk.

Calculation of the clinical or actuarial life table to carry out an analysis with fixed intervals of subject assessment (e.g. months, years).

Calculation of the Kaplan-Meier life table where the interval of assessment is not fixed but is determined by the data when an event (outcome) happens.

The logrank test is used to compare observed and expected deaths summed over each interval for each group being compared. It has a chi-square distribution.

Cox's life table regression (also called proportional hazard regression) can be used for the analysis of survival (mortality) when the status of all subjects is known at a fixed point. Adjustment can be made for confounding variables. The hazard is the risk of failure at a given time point among all those still at risk at the time. The ratio of the hazards between two subgroups (proportional hazard) is assumed to be similar throughout the follow up period, and this can be checked with appropriate plots.

Additional marks would be awarded for greater detail on the above points.

A log (cumulative hazard) plot for each group should give two parallel lines if the proportional hazard assumption applies.

Comments

This question was attempted by about a third of candidates in preference to Question 8. The majority answered poorly. At least half of candidates did not realise that losses to follow-up are assumed to occur in mid-interval and only contribute half a year to the denominator. Some mistakenly thought that deaths should be treated likewise. Many candidates did not know what statistical methods are available for survival analysis, or mentioned just one.

QUESTION 8.

Effect size is the statistic which summarises the difference that the intervention is estimated to make.

For categorical endpoints (e.g. death), this could be the difference in proportions who die, or the ratio of such proportions (risk ratio).

For quantitative measures, this could be the difference in mean of the variable used as endpoint by all the primary studies included in the meta-analysis.

Sometimes, primary studies vary in their primary endpoint. In this case, the effect size might be defined as the difference in mean divided by the within group standard deviation, to give a dimensionless effect size which can be compared across studies.

Heterogeneity refers to the different results that different primary studies give concerning the effectiveness of an intervention.

Funnel plots are a device for detecting publication bias.

They consist of a plot of effect size against sample size for the various studies. A relationship between these two, such that effect sizes are more impressive for smaller studies, indicates publication bias.

The following additional points might cause the answer to be deemed good or excellent:

NB All answers will be rated higher if real examples quoted.

All estimated effect sizes to be accompanied by a 95% confidence interval.

Heterogeneity may be caused by different patient populations (age group, gender, severity of disease), or by publication bias towards poor quality studies with big effect sizes.

Tests for heterogeneity may have low power, for example if the number of studies is small, or the sample sizes within the studies are small.

Funnel plots may be assessed formally for asymmetry (for example, by regression analysis of log odds ratio against precision).

Again if there are few primary studies, funnel plots may not be revealing.

Comments

Candidates appeared to have a reasonable knowledge of meta-analysis but it was often not focussed on the questions asked. Some confusion was evident concerning the terms to be explained. "Effect size" has little to do with sample size calculations in this context. "Heterogeneity" concerns the difference in results between primary studies, though candidates were given credit for pointing out reasons for such differences (e.g. study design).

Candidates rarely mentioned any statistic for an effect size other than the odds ratio, even though many meta-analyses have used quantitative outcomes rather than categorical ones. Concerning funnel plots, most candidates sensibly drew a diagram but failed to label the axes in a convincing manner.

I was pleased that some candidates demonstrated knowledge of relevant examples.

PAPER IIB

QUESTION 1.

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

- Brief definition of osteoporosis; knowledge of principal risk factors (female gender, strong family history, early menopause, abnormally low weight, Anorexia Nervosa, low physical activity, long term use of corticosteroids, possibly dietary calcium, smoking and alcohol); the fact that they interact in an uncertain way; the fact that they have an impact over someone's lifetime not just around the menopause.

- Strategy should emphasise the holistic nature of any preventive measures; individual lifestyle issues coupled with a society that encourages healthy lifestyles, plus appropriate services.

- Individual aspects (take regular weight-bearing exercise, do not drink to excess or smoke, eat a healthy diet (with adequate levels of calcium and Vitamin D)).

- Supportive society (access to exercise, affordable food, anti-smoking campaigns).

- Appropriate services (health education messages at all stages of life, accessible information, role of densitometry).

- Drug treatments (hormone replacement therapy (HRT) with an understanding of the benefits and possible harmful effects e.g. breast cancer; possible role of bisphosphonates).

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

- In the UK, use of the staff and resources of the National Osteoporosis Society.

- Osteoporosis in men being a different disease requiring a different approach.

- Methods of evaluating the strategy, for example, people's knowledge and understanding of osteoporosis or GPs' prescribing behaviour.

Comments

Candidates generally answered this question well, with a sound knowledge of the risk factors for osteoporosis, although several omitted smoking and alcohol. Most were able to discuss the necessary strategies to tackle this health issue within a given population. Those who did very well were able to discuss the theoretical and practical aspects of putting a balanced strategy into practice, including evaluation. They were able to clearly describe the policy on detecting people at high risk and the appropriate use of bone densitometry. Candidates tended to spend less time on health protection and a supportive society than on other areas of prevention. Weaker candidates only discussed lifestyle aspects of prevention, or were unable to discuss adequately the pros and cons of DEXA scanning or HRT therapy, or were confused about the difference between targeting an entire population versus those at high risk.

QUESTION 2.

Key points for arguments:

- Reappearance of food poverty in UK
- Research showing nutritional risk factors for disease and higher rates of nutrition related disease clusters in disadvantaged groups
- Widening inequalities in nutrition over last 15 years
- Description of vulnerable groups.

Key points for projects:

- Increasing access and choice for consumers (consider age, sex, ethnicity, health etc)
- Physical accessibility of food retail outlets
- Town and county planning does not disadvantage vulnerable groups
- Nutrition at school
- Lobby for action on food products e.g. reduce salt processed foods
- Health education, life skills.

Additional points

- Refer to Acheson Report on Independent enquiry into inequalities in health
- Reference key intervention studies
- Refer to the EU Common Agricultural Policy.

Comments

Candidates scoring highest were able to quote the supporting epidemiology and draw from recent national reports. Few mentioned the European Union Agricultural Policy.

QUESTION 3.

- Male mortality higher at all ages compared with female mortality.
- At younger ages, differences due to accidents. Motor vehicle accidents and suicide important causes in young adulthood in males.
- Psychological morbidity higher in young boys but overtaken by girls in teenage.
- In terms of mental health, symptoms such as anxiety more common in females.
- Substance abuse or antisocial behaviour more likely in males.
- Morbidity. Pattern of women having more chronic illness than men, less acute episodes – Verbrugge *re* iceberg of ill health in women.
- Women's use of health services *re* reproduction and via children's consultations. Also cervical and breast screening.

Although life expectancy higher in females, more likely to experience social isolation (lone parents, or at older ages through widowhood).

Women more likely to be in low paid work and experience poverty (with the health consequences) including fuel poverty in old age. Also, women more likely to be carers (of children as well as older relatives).

Health promotion research shows that women less likely to identity coronary heart disease (CHD) as a risk to themselves, although it is the biggest cause of mortality in women (as well as in men, of course). Also clear evidence that women may receive poorer quality treatment for CHD compared with men. Also most research into CHD so far has been on men. Women consult doctors more frequently than men.

Risk taking more common in men. Also the media image of men. Need greater emphasis on encouraging men to express their emotions more freely - interventions in the workplace, clubs, etc.

Social environment and roles of women may be risk factors for illness - depression in women, for example. Illness behaviour may be different because women more able to express emotions and consult doctors. Need to tackle social isolation, poor self esteem in women. Need to overcome gender bias - in terms of CHD research in women, but equally better understanding of lifestyle and societal pressures and their influence on men's health.

Comments

Most candidates answered this question reasonably well and demonstrated a broad understanding of the issues concerning gender and health. Good answers placed equal emphasis on the two parts of the question. Poor answers demonstrated little knowledge of the subject or concentrated entirely on men's or (usually) women's health, to the virtual exclusion of issues relevant to the health of the other gender. Surprisingly, very few candidates highlighted the importance of health issues concerned with reproduction for women. Also very few recognised the possible link between consulting with children and the potential for opportunistic consulting on the women's own behalf. Replies tended to concentrate on physical rather than mental health and not everyone distinguished between mortality and morbidity. Some of the better answers acknowledged the importance of change and used this both to contextualise current figures and to speculate on future trends.

QUESTION 4.

Key Points

- Ethnicity
- Gender
- Area of residence
- Type of work
- Mental as well as physical health (especially *re* unemployment, racism)
- Differences *re* life expectancy and morbidity (also CHD, lung cancer, other conditions which show a social class variant)

Stark differences in mortality rates by social class

Relationship between differences in income and health well established - work done by Wilkinson, for example.

Material circumstances as an explanation further strengthened by evidence of unemployment, etc. as independent predictors of mortality.

Another explanation - lack of social cohesion - work done in the United States of America to demonstrate impact of "lack of social trust" and mortality, as an example.

Third explanation may be behavioural differences - Evidence that lifestyles (smoking, diet etc.) different. May be related to choice but more likely to be explained by material circumstances.

Additional points, which would merit extra marks, would include the mention of:

- Genetic inheritance
- Homelessness
- Sexual health

Broad areas of action:

Tackling poverty
Investment in social capital
Enabling people to accomplish lifestyle changes
Developing health services more sensitive to social inequalities
Greater partnership between health and social care and the community itself.

Comments

The general standard of answers was good. Some had well organised and structured answers and demonstrated an awareness of the published research as well as many of the national and local initiatives which have been established to tackle social inequalities. A small number had disappointingly poor answers and appeared unfamiliar with the topic, which was surprising, given the importance of social determinants of health to current public health practise.

The majority of candidates concentrated on social class inequalities, with only a few mentioning gender or ethnicity. Some of the better answers also included some discussion of locality, housing and a few alluded to the interaction between factors. Some of the answers failed to demonstrate the impact of inequalities on health status. Again, some of the better responses referred to change.

QUESTION 5.

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

1) A clear indication of the structure/components of the policy;
2) Addresses the wider determinants of health;
3) A definition of the socially excluded population;
4) Specifically how to involve the socially excluded;
5) How to identify their needs (work elsewhere; "expert" views including socially excluded; routine data; special local studies etc.);
6) Interventions based on evidence of effectiveness where possible;
7) Recognition of national policies and guidance;
8) How to achieve multi-agency ownership and commitment (including voluntary sector) in development and implementation;
9) How to agree an implementation plan with a clear outline of the roles and responsibilities of partners involved in the policy;
10) How to monitor its implementation.

Exceptional answers might include:

1) Description of specific approaches e.g. a community development approach;
2) Examples involving specific groups e.g. homeless, children excluded from school.

Comments

Most candidates answering this question wrote an adequate answer. However few candidates had properly thought through how to fully involve the socially excluded in developing their policy or how to adequately secure its implementation. Candidates did much better, who included clear definitions, acknowledged national policies, would use effective interventions and showed how their policy would address the specific difficulties of one or two socially excluded groups.

QUESTION 6.

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

Candidates' discussion should demonstrate an understanding of the following and their use in this context:

1) The use of health economics as a framework to aid in decision making
2) Recognition of the wider determinants of health
3) Marginal change
4) Marginal analysis and programme budgeting
5) Allocative efficiency
6) Cost benefit analysis and also cost effectiveness and cost utility analysis
7) The importance and problems of defining costs and benefits
8) Direct and Indirect costs
9) Opportunity costs to health service and other agencies' programmes which influence health

Exceptional answers might also include:

Ensuring interventions address the health needs of the population versus demand and supply.

Comments

In general this question was badly answered. Answers suggested that candidates had failed to read the question. Most candidates attempting this question appeared to have written short (and accurate) notes on every type of economic study they could remember, but had made little attempt to explain how they would practically use the different methods to decide where to withdraw funding locally. A number of candidates also discussed non-economic techniques which, although of practical use, were irrelevant to this question which asked specifically for health economic techniques.

QUESTION 7.

To pass, the candidate will:

Differentiate clinically between the irrational violence of chronic psychosis, particularly schizophrenia, which may be managed effectively, and the premeditated violence of psychopathy, which is more intractable. The question concerns the first entity, and embraces violence to others and to self (10% of schizophrenic patients commit suicide).

Review recent developments in the longer-term treatment of schizophrenia, which has a 1% lifetime prevalence; of the risk involved in moving from custodial care to community care based on the care programme approach, with key workers assigned to assertive follow-up. Discuss the locus of professional responsibility at various stages of care management.

Show awareness of the aims and limitations of instruments designed to protect civil liberty while ensuring adequate treatment, like the 1983 Mental Health Act or comparable legislation in other countries; the issue of individual freedom and responsibility to society; whether an affected person should be allowed to occupy a role where violent expression might endanger others — driving while affected by compelling hallucinatory voices, movement-affecting drugs etc; the ethical dilemma of using powerful drugs like clozapine in otherwise intractable situations knowing the possible harmful consequences (1% agranulocytosis); the debate on extending compulsory compliance with treatment but avoiding institutional detention; the predictive value of various factors for violent behaviour; the debate on race, ethnic origin and violent expression.

Examine the inherent conflicts in the public health practitioner's roles in facilitating effective clinical management, protecting the public health and increasing public awareness of the health care issues.

Recognise the scale of costs, respectively, of typical community care programmes and drug treatment programmes for chronic psychotic patients, and the costs of their institutional care; and the types of cost avoided, if any, by the implementation of these programmes.

To excel, the candidate will:

Exemplify the points made with appropriate references to prominent occurrences in the country concerned, such as the Zeto incident and the Ashworth Hospital Enquiry in England, and to published economic evaluations of relevant care programmes.

Comments

Some candidates did not engage with the specific situations addressed in this question. They dealt merely with the general issues of care in the community of psychiatrically ill patients and gave little indication that they were conversant with either the clinical management of psychotic patients or the legal issues specific to detaining or restraining them. There was a six-fold difference in the range of general population prevalence of schizophrenia reported by candidates.

QUESTION 8.

Most of the following would be required to achieve a pass, along with illustrated examples:

Demonstration of an understanding of the dual clinical/managerial role either through the offering of relevant examples and/or through clear explanation.

Demonstration of an understanding that power and freedom must be exercised with discretion and caution.

Acknowledgement that collective corporate responsibility can also bring benefits, e.g. in terms of colleagues backing your initiatives.

Difficulty in shifting perspective from the individual patient to a population.

Difficulty in balancing clinical and managerial, especially financial, imperatives.

A problem in re-negotiating professional relationships with former clinical colleagues.

A temptation to retreat into clinical work when pressured.

Coping with people's changed perception of you, such as how to answer "So you are a pen-pusher now!"

Achieving specialty neutrality and objectivity regarding colleagues.

Difficulty in accepting that management is an art and a science that needs to be learned.

Difficulty in understanding the complex informal power and influence of relationships which exist in health care management.

Difficulty with being challenged about one's managerial decisions.

The following are examples of points that could help those aiming for high marks:

Comparing and contrasting the medical dual role with that of finance colleagues, who may also have professional/corporate conflicts.

Demonstration of an understanding that Chief Executives themselves can also find themselves in conflict because of their roles as accounting officers.

Some discussion of the relevance of clinical governance to this issue.

Those who gravitate toward managerial roles are sometimes, **but certainly not always**, temperamentally inclined and skilled.

They may find it difficult to accept the need for tailored training – doctors becoming managers can also threaten managers, particularly if doctors are seen as exempted from formal training.

Difficulty in reconciling the need for management training with the need to complete specialty Continuing Professional Development.

Highest marks to be reserved for those who:

Demonstrate a professional maturity in their understanding of this difficult area, for example, the balance of rights and responsibilities.

Demonstrate, through carefully chosen examples, a convincing appreciation of how such conflicts arise and are resolved in everyday practise.

Additional point for credit:

Articulation of strategies to address these conflicts:

- Persuasion of executive and management colleagues in private;
- Reasoned argument through the backing of a case through the analyses, interpretation and explanation of data;
- Use of the managing clinician's right to address Boards directly on matters of clinical concern;
- Use of the facility to record professional advice proffered and dissent from conclusions reached;
- Consider use of the right to address the public directly via the media;
- Help from colleagues elsewhere in the public health/clinical network who may be less constrained in how they articulate the case.

PAPER III (UK)

SECTION A

QUESTION 1.

a) Critical Appraisal

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

Objective To assess the risk of perinatal death in planned home births in Australia.

Method Perinatal outcomes of planned home births in Australia compared with outcomes of all births in Australia, and with outcomes of home births elsewhere in the world.

Data on home births 1985-1990 obtained from a database kept by Homebirth Australia, a national consumer organisation that kept a register of practitioners attending home births. Practitioners were asked to complete a detailed notification form for each planned home birth. Those who did not were asked to provide an annual summary of births attended. All except one in 1988 provided data between 1985 and 1988. In 1989 and 1990 the participation rate fell to 89.6%, although data on another 576 births were obtained from home birth support newsletters.

Data on deaths were collected by distributing an audit form to practitioners who had reported deaths during 1985-87. All collaborated at that stage, but only five practitioners collaborated for eleven deaths during 1988. For 1989 and 1990, the authors state that practitioners reported nine deaths directly to Homebirth Australia, and that a further eight letters were reported in newsletters in "states with non-participants".

Overall, information was available on 7002 home births, 5052 from individual notification forms, 1372 from summaries, 576 from home birth support newsletters and two from "other sources". It is reported that information was available on 50 deaths (five of which were late neonatal deaths).

The authors state that eleven deaths reported "did not meet our criteria" and were excluded. Criteria for inclusion however, are unclear. At no stage do the authors comment on the completeness of their data, and we are not told which states supplied perinatal data.

Results It is reported that among the 7002 home births attended there were 50 deaths (31 foetal and 19 neonatal), giving a perinatal death rate of 7.1/1000. This rate is reduced to 6.4/1000 if the WHO definition is applied. (Candidates might note that there is a difference in the two definitions, although detailed knowledge of the Australian definition is not required, and should <u>not</u> be awarded extra marks). This compares with an overall rate for Australia of 10.8/1000. The authors comment that severe pathology and extremely preterm pregnancies will be under-represented in the home birth population.

Birthweight specific data were available for 1985-8. These show a higher rate in the home birth group (5.7/1000) for "normal" birth weight than in the population at large (3.6/1000). This difference was largely accounted for by intrapartum deaths (2.7/1000 v 0.9/1000).

The authors provide a table of "recognisable risk factors" in pregnancies resulting in intrapartum asphyxia, including meconium stained fluid, foetal bradycardia, breech presentation, intrauterine growth restriction, twin pregnancy and length of gestation. Excepting the first and second of these, however, the condition was known prior to delivery in only a minority of cases.

A table of international perinatal mortality rates for home birth is provided, showing Australia (the present study plus another) to have the highest rates in the group shown. The authors comment later, however, that there are differences in the way in which data are collected amongst the studies listed.

Bias This is, in general, a reasonably well conducted study given the difficulties of data collection. Some criticism can be made of the retrospective nature of classification of risk factors, the absence of information on data completeness, and occasional inconsistencies.

Generalisability This is the main failing of this study in the British context. The authors note, in the discussion section of their paper, that Australian home birth practice is nearly 100% private and characterised by low caseloads, with only 13% of practitioners attending more than 20 births per year, and more than 50% attending fewer than five. This is in sharp contrast to the situation in the UK and, as described by them, in the Netherlands, where caseloads average over 100/year.

Discussion The discussion is in general well constructed, but makes one rather strange point without apparent justification: the authors state that one explanation for their findings would be that some home birth practitioners in Australia no longer offer home births to low risk women. Although this might explain their findings it is difficult to imagine why they would choose to do this.

b) Notes for Director of Public Health

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

The candidate should express an opinion of the paper's pros and cons.

It is likely that the overall explanation for the findings is that practitioners with either limited initial or ongoing experience, and who are therefore underestimating the risks associated with home delivery in high risk cases, are attempting home delivery in cases which would be better given more intensive monitoring and care.

It should be recognised, however, that the two other participants in the meeting may be coming from, or be perceived as coming from, entrenched positions regarding obstetric care. Every effort must be made not to reinforce this entrenchment at any stage, but to point out to the obstetrician that the results do not really apply to the UK, while at the same time pointing out to the women's group leader that some cases really should be handled in an obstetric unit.

Comments

On average, this paper was answered less well than the paper on out of hospital thrombolysis (Question 2).

Most candidates correctly identified the objectives and summarised the methods, but candidates were overcritical of the methodology. That is, they assumed that the problems associated with a retrospective study and the (possible) lack of complete data meant that conclusions could not be drawn.

Some candidates failed to spot that the crude PNMR was lower for the home birth group (compared to the rest of the population), but was increased for those babies with a normal (more than 2.5kg) birthweight.

Many candidates didn't grasp the major problems with generalising from this paper. The situation in Australia (private practice, low case loads, less accreditation…) meant that it simply can't be generalised to the UK situation.

The discussion was often not commented on and most candidates didn't comment on one particular line in the discussion which didn't seem to make sense. Specifically, the text in the paper: "midwives do not appear to attend low risk births at home" probably means they only attend high risk births at home, NOT, midwives do not attend low risk births at HOME (cf. Hospital) i.e. the whole risk management process is shifted when compared with the UK.

As regards the notes of the meeting, many candidates failed to demonstrate an understanding of the reality of the meeting – in that the two other participants might be expected to have differing opinions. The best answers showed an understanding of this, and related the paper to these probable opinions. They also encouraged tact, listening and an ability to synthesise apparently contradictory positions.

QUESTION 2.

a) Critical Appraisal

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

Objective To determine call to needle times and consider how best to provide timely thrombolytic treatment for patients with acute myocardial infarction.

Method Prospective observational study. Data collected first from 42 "country" practices in Grampian that were 25 Km or more from Aberdeen and which referred patients to Aberdeen Royal Infirmary. "Later", data also collected from 34 city and suburban practices closer to the hospital. We are not told the duration of "later".

Timing data are referred to as being collected from referral letters, ambulance records and hospital notes. No mention is made of any validation study regarding different sources of timing data.

Patients were identified upon admission to hospital. It is stated that 1986 episodes of suspected myocardial infarction were identified initially. The diagnosis was confirmed in 1466, and thrombolytic treatment was given on 1053 occasions. We are led to assume that thrombolytic treatment was only given in confirmed cases, and we are given no explanation as to why thrombolytic treatment was not given in 413 cases with confirmed myocardial infarction. It is also clear that identification took place at the time of hospital admission. We therefore have no data on cases not admitted to hospital, but who nevertheless had a myocardial infarction.

Results Amongst the 544 country patients seen first by a GP, thrombolytic treatment was given by a GP on 195 (35%) occasions. The median call to thrombolysis time was 45 minutes. When the patient was referred directly to hospital, the median time was 150 minutes. Those calls receiving thrombolysis within the British Heart Foundation Guideline time (90 minutes) were 93% and 5% respectively.

Patients from city and suburban practices were not offered thrombolysis by their GPs. However, an attempt is made to assess their likely times, given the times taken to treatment with opiates by GPs. Those seen directly by a GP had a median of 25 minutes call to needle time, whereas those who called an ambulance had a time of "about an hour".

Bias Mention has already been made of the numbers of cases who did not receive thrombolysis, and who , therefore, are apparently not included in the call to time analysis. Likewise, we are not told the fate of those individuals (albeit theoretical in the absence of data) who received thrombolysis from a GP but who were not admitted to hospital.

Generalisability The point to emphasise is that the Highlands of Scotland are different from other geographical regions in the UK in terms of geography and, consequently, provision of health services. GPs practising in the Highlands have a different level of skill and familiarity with managing emergencies in remote areas. This cannot be simply transposed to single HAD lock-up practices in urban areas. The ease of adopting a district wide policy is very different in such rural areas, especially where such gains are to be had. Over and above factors relate to distances to a specialist centre; general practitioners working there may be more experienced in some techniques (due to lack of access to specialist facilities), and may have smaller caseloads (due to wide geographical areas and low population density).

b) Reply to Primary Care Practitioners (PCPs)

In replying to PCPs it is important to be encouraging of those genuinely wishing to innovate and improve patient care, whilst at the same time ensuring that the safety of the public and the cost of effectiveness of any interventions are taken into account.

There are some important issues to be clarified with the PCPs:

Is it clear EXACTLY what the policy will be for managing acute suspected cardiac events in the community?

Are ALL PCPs signed up to this?

Are other organisations and groups happy with the likely consequences (ambulances, paramedics, cardiologists…)?

By whom and how is any necessary training being provided? - Skills in administering it (contraindications, organisation and cost of training, etc).

Cost of thrombolytic agents (e.g. refrigeration).

Other equipment which PCPs may need (12 lead ECG, defibrillator…)

The integration of any policy with the overall wider management of sudden cardiac events (pain relief, aspirin…)

The link any proposed campaign should make with an overall strategy for cardiovascular health (e.g. promoting other ways of reducing risk - smoking, diet, exercise…)

As with all public campaigns, the right message must be delivered in the right way to the right people. Targeted to whom? Media? (Radio, press, leaflets in surgeries..?)

Is there any evidence of the forecast effect (workload, cost…) of change in practice? Are there any contingency plans? (e.g. if some PCPs do not wish to give such therapy in the community.)

How is the effectiveness of such a campaign to be assessed (process, outcome measures…)? Is this going to be a simple audit or is a wider research issue going to be addressed?

Comments

On average, this question was answered well.

Many candidates (wrongly) criticised the paper for not stating a hypothesis (it is a descriptive study).

Many also (wrongly) criticised the paper for not using parametric analyses (e.g. T-tests, CIs…). Few candidates mentioned skewed data, and hence use of quartiles and means.

Too many candidates obsessed with longer term outcomes when this is not the stated aim of the paper.

Few candidates spotted that 195 (in Table 1) is at odds with 192 (in the text).

Candidates spent some time simply describing the paper and repeating the points it made without quickly embarking on an appraisal.

Some candidates failed to recognise that opiate times were there to give a quantitative estimate of the potential for thrombolysis in URBAN areas. Too many simply stated (rather bluntly) that the evidence in the tables showed that out of hospital thrombolysis was not appropriate for urban areas…

The fact that 413 confirmed infarcts were not given thrombolytic therapy was well picked up.

Most candidates discussed generalisation of the evidence adequately.

Candidates often failed to appreciate the difference between the strength of generic evidence and studies to assess how it is (or could be) implemented in particular circumstances.

Some candidates critically appraised the paper and appeared to completely ignore this analysis when replying to GP colleagues.

Some candidates tried to appraise the paper with absolutely NO reference to the data.

There was some lack of political tact when writing to GPs; a rather high handed tone was adopted by many although some candidates engaged GP colleagues well in the letter. The letters often appeared to be very defensive, justifying reasons to maintain the status quo. Only few candidates mentioned practical issues such as cost, refrigeration and training.

PAPER III (UK)

SECTION B

QUESTION 3.

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

1. The background leading to the increasing criticisms — e.g. mass media coverage on patients with antibiotics resistant infection.

2. The specific targets of the criticisms against doctors, and against the medical profession and the government, for failing to control the problem.

3. Explain what are antibiotics and resistance, proper vs. improper use, and how the problems can arise.

4. Explain the roles of the government (Department of Health particularly), medical professional organisations, hospital management, the pharmaceutical industry and drug stores/pharmacies and individual medical practitioners.

5. What measures should be taken or have already been taken?
Needs to review the situation, to collect data on antibiotics use, to consult specialists (e.g. bacteriologists) and to collect data on sensitivity testing and pattern of resistance, to meet individual medical practitioners and understand their views and problems.

6. To explain the situation: whether it is under control or not and what members of the public can do – for example, explain the misconception that some people may think that antibiotics are a cure for the common cold or influenza and request antibiotics from their doctors or from drug stores/pharmacies without prescription.

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

1. Inappropriate use of antibiotics is found in agriculture and livestock or fish farming. Need to tackle this as well.

2. The need of a policy based on good data and with monitoring and evaluation and with concerted efforts of all sectors and the public.

3. Whether guidelines are needed for proper use of antibiotics.

4. Infection control measures and surveillance in hospitals and other health care settings.

Comments
This was a popular question but few candidates answered it well. A good answer required evidence that the candidate knew of the main issues and yet produced work that was suitable for a newspaper article in style, structure and language for a general audience. Some people gave good information using language that a general audience would have great difficulty understanding. Others had good title and jargon free language but concentrated totally on antibiotic prescribing in general practice and discussed none of the broader issues relating to world/national concern or farming. There was insufficient attention given to what action should be taken to reducing inappropriate prescribing, as part of a multi-agency strategy. There was also too great an emphasis on the role of the public. Although almost 80% of candidates passed the question, only two produced really good answers.

QUESTION 4.

Candidates should include:

- Recommendations of national cervical screening programme — screening not less than 5 yearly and not more than 3 yearly with recall of not less than 4.5 yearly and not more than 3 yearly;
- Programme aims to prevent cancer by detecting and treating precancerous change;
- Normal result means low risk not no risk;
- Effectiveness of screening programme depends more on coverage and quality than on whether smear taken 3 or 5 yearly;
- 3 yearly screening is marginally more effective than 5 yearly but not more cost effective;
- Reduction in cervical cancer and aim of Health of the Nation and Our Healthier Nation, but low number of deaths each year for an individual Health Authority;
- National Cervical Screening programme is working and cervical cancer is decreasing;
- Aetiology — not totally clear, long pre-cancerous phase;
- Issues relating to equity;
- Knowledge that national screening quality standards exist;
- Evidence of understanding the choices - that if money is limited then in this case quality and coverage should be targeted before an increase in recall interval — that there are costs involved in improving quality/coverage/recall interval.

A good answer would include:

- *Ad hoc* introduction of cervical screening before the National programme introduction in 1988 leading to varying screening policies. Health Authority (HA) mergers in 1990s produced many HAs with more than one policy.
- International Agency for Research on Cancer (IARC) working group on evaluation of cervical screening programmes suggests 3 yearly screening produces 94% reduction in mortality compared to a 91% reduction for *5* yearly if coverage is 100%.
- That the improved reduction in incidence is associated with an estimated 67% increase in costs.
- That all screening programmes were audited to NHS Cervical Screening Programme standards in Jan 1998 in response to EL(97)67.

Comments

This question required enough knowledge to constructively discuss the benefits and disbenefits of a 3-year vs. 5-year cervical screening programme. Some candidates who answered the question did not show that they were aware of the national screening programme standards, issues relating to coverage and quality when compared with frequency of screening interval and issues of equity. This was quite surprising considering the national debates on quality over recent years. Other relevant issues were not commented upon, e.g., opportunity costs, equity, national policy and national drive to improve the quality of the programme. However there were some very good answers to the question.

PAPER III (HongKong)

SECTION A

QUESTION 1.

(i) Critical appraisal

1. The study design of a cross-sectional survey was appropriate to the objective.

2. The study sample was representative:
- Quota sample of general public used seemed to be representative of the UK population by age, sex, SE status and educational level.
- General Practitioners also quota sample, apparently representative
- Gastroenterologists - a random sample from a specialist society, also acceptable in representativeness

3. Response rate not reported.

4. Validity of measurement - a survey of priority and attitudes not easy
- The use of case histories seemed appropriate
- Asking respondents to prioritise criteria also seemed reasonable and appropriate
- Criteria used to select patients listed for liver transplantation were subjected to different interpretation, especially by the public

5. The study was not biased in any major manner

(ii) For Hong Kong

- Survey of the general public is feasible using either random-digit telephone dialling, or census-based household survey
- Survey of the medical profession will be feasible through such bodies as Hong Kong Medical Association.
- The demarcation between specialist/GP is a bit less clear in Hong Kong, and assembling a representative sample of the profession can be problematic (needs discussion on validity).
- The public is under strong influence of the media, the survey result may be very much dependent on what is reported during the survey period.
- The input of legislative counsellors should not be neglected. Any study in which they have not been properly consulted will not be useful.
- Study may encounter ‘indifference’ of the public in general. Many may say ‘they do not know’. Results will then be difficult to interpret.

Comments

No comments.

QUESTION 2.

(i) Critical appraisal

1. The study design of a case-control study was fairly appropriate to studying the relationship between Hormone Replacement Therapy (HRT) and hip fracture.

2. Cases were incident hip fracture patients and controls were from the Swedish population resister. However, selection bias cannot be entirely eliminated for cases may choose to go on to HRT for health reasons. There was some attempt to control for confounding but this could not be 'perfect', for unknown confounding factors may exist.

3. Measurement of 'exposure' was thorough, although it was based entirely on recall of subjects.

4. Statistical analysis correct. Odds Ratio presented with confidence intervals, and effects of HRT analysed by duration of treatment etc. in a thorough manner.

5. Internal validity was good due to the points above and an adequate sample size.

(ii) For Hong Kong

- There is limited applicability of the results to Hong Kong Chinese, for there will be a difference in absolute risk of hip fracture.
- Relative risk may in general be applicable.
- Chinese have very low compliance to HRT and a knowledge of risks and benefits may not help.
- Data on other aspects of HRT e.g. cardiovascular benefits would need to be collected, to minimise confounding.

Comments

No comments.

PAPER III (HongKong)

SECTION B

QUESTION 3.

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

1. The background leading to the increasing criticisms — e.g. mass media coverage on patients with antibiotics resistant infection.

2. The specific targets of the criticisms against doctors and against the medical profession and the government of failing to control the problem.

3. Explain what are antibiotics and resistance, proper vs. improper use, and how the problems can arise.

4. Explain the roles of the government (Department of Health particularly), the medical profession (e.g. the Medical Council, the Hong Kong Medical Association and other concerned medical organisations), the Hospital Authority, the pharmaceutical industry and drug stores/pharmacies and individual medical practitioners.

5. What measures should be taken or have already been taken?
   Hong Kong Medical Association (HKMA) — organising seminars, forming a working group. Department of Health and Hospital Authority - working together with HKMA. Needs to review the situation, to collect data on antibiotics use, to consult specialists (e.g. bacteriologists) and to collect data on sensitivity testing and pattern of resistance, to meet individual medical practitioners and understand their views and problems.

6. To explain the situation: whether it is under control or not and what members of the public can do (e.g. explain the misconception that some people may think that antibiotics is a cure for common cold or influenza and request antibiotics from their doctors or from drug stores without prescription).

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

1. Inappropriate use of antibiotics is found in agriculture and livestock or fish farming. Need to tackle this as well.

2. The need of a policy based on good data and with monitoring and evaluation and with concerted efforts of all sectors and the public.

3. Whether guidelines are needed for proper use of antibiotics.

4. Infection control measures and surveillance in hospitals and other health care settings.

Comments

This question was chosen by all three candidates. It was generally answered satisfactorily. Candidates showed familiarity with the recent events leading to the problems and the major causes of inappropriate use, including the roles of the doctors, the patients, the drug stores and the government. The issue of the need of a policy and good data to measure and monitor the problem was not emphasized sufficiently. The answers can be improved by addressing the likely questions or criticisms which would be raised by the mass media during the interview.

QUESTION 4.

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

1. Explain the aims of such review: to identify inadequacies and achievements, to make recommendations for further measures, to prepare for the tobacco industry exploiting loopholes or grey areas.

2. Review the epidemiology of tobacco-related diseases in Hong Kong: what are the trends in the past 20-30 years?

3. Review the data on smoking prevalence, particularly on children and women and data on quitting, and the factors associated with smoking and quitting.

4. Review the regulations and the background — the objectives of the regulations. Compare the Hong Kong regulations with proposals from Hong Kong Council on Smoking and Health and other tobacco control advocates, World Health Organisation (WHO) recommendations and regulations in other countries. What were the compromises in the legislation?

5. Review the compliance of the tobacco industries and other concerned sectors (e.g. restaurants, retailers, etc.), including illegal sales of cigarettes to minors, smuggling.

6. Review the enforcement and the problems encountered.

7. Review the opinions expressed from public opinion surveys, mass media, opinion leaders, legislative debates, tobacco control organisations, as well as those from the tobacco industry, advertising agencies, restaurant owners and other interested sectors.

8. A working group is needed to undertake the review and a wide consultation is needed.

9. Recommendations on how existing and new regulations can fit in with the objectives of the Healthy Living Campaign.

The following are additional points that might improve answers to "good" or "excellent":

1. Include a review of data on passive smoking and the need to protect non-smokers and children.

2. Review the activities of the tobacco industry in lobbying against the regulations and their objections to more stringent regulations.

3. Seeking help and support from WHO and expertise in other countries.

4. An understanding of the situation in mainland China and the differences in their regulations from the Hong Kong ones and how such differences can affect Hong Kong (e.g. smuggling).

Comments

No candidates answered this question.