



Specimen Paper B DFPH Sample Question Paper and Mark Scheme Paper IA

Please note that the following specimen paper has been compiled with 'real' questions used in recent past papers.

How is the pass mark derived?

A modified Angoff approach to standard setting was implemented for all examinations from January 2017 onwards.

Angoff standard setting involves a panel of 'judges' (standard setters) to consider each question and judge what proportion of minimally competent candidates would answer that question correctly.

Standard setters are asked to consider what mark (e.g. out of 10 for paper I) a borderline competent candidate will achieve. These marks are then collated across all standard setters and the average is calculated. That average is the pass mark for that question.

Occasionally, when standard set marks are reviewed there is clear disagreement between standard setters as to the 'difficulty' of a question. Where that occurs, a discussion is held between standard setters to elucidate the reasons for the disagreement. Standard setting is then repeated until reasonable agreement is obtained. For our purposes, we consider too much disagreement to have occurred if the standard deviation of the standard set mark is more than 10% of the marks available for that question, i.e. >1 for questions out of 10).

Read more: [Link](#)

Examiner feedback and comments

Examiners provide feedback on the questions they mark in each sitting in order to help support an understanding of the ways in which candidates and questions perform but also to help with improvements in the question in future sittings. A summary of these points are published after the exam in order to help candidates. For the questions provided in this pack, both the summary comments and where applicable the more detailed comments are provided.

Specimen Paper B Questions and Mark Scheme
Paper IA

Section A: Research Methods

Question 1:

Concern has been raised that the local hospital's mean length of stay is 5.3 days compared to 2.7 days in a similar hospital in a neighbouring city.

Discuss interpretation of length of stay statistics in relation to:

- (a) Skewed distributions (4 marks)
- (b) Casemix (3 marks)
- (c) Relationship with social care, community care and ambulatory care. (3 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

- A distribution may be skewed either to the right/positive or left/negative.
- If to the right/positive there is a large number of very short LOS. There are a number of possible causes including data artefacts.
- If the day cases are recorded as zero days, it may be useful to weight them as one day (or sometimes half a day) in recognition that they do use some resources.
- If the skew is to the left/negative, with a number of cases waiting for a very long time, then this may be due to data errors (wrong dates, wrong speciality), lack of ASC capacity or community resources/support.
- The effect on the average length of stay can be substantial, and some adjustment may be made.
- This can be done by calculating the geometric mean length of stay, or by trimming out cases which fall beyond a predetermined trim point. These trim points may be across all cases (365 days, 50 days, etc.)
- Median or mode may be used as a preferable metric.
- Any other relevant and appropriate point will also receive credit.

1 mark = 1 point explained clearly or 2 points, but explanation unclear

2 marks = 2 points explained clearly; or 3-4 points, but explanation unclear

3 marks = 3 points explained clearly; or 5 points, but explanation unclear

4 marks = 4 points explained clearly

(b)

- Length of stay statistics can be affected by the proportion of long stay and short stay patients. A hospital with more complex cases, older, sicker more deprived patients will tend to have longer length of stay.
- Casemix must be adjusted for in comparison of different hospital or across time. This can be done by standardisation using casemix groupings. These groupings can be based on age, diagnosis, procedure, elective/emergency/maternity or a mixture of all.
- They should be homogenous in relation to length of stay (iso resource).
- Casemix can be reported in different ways in different countries.
 - Diagnosis Related Groups (US, Ireland, Wales, Portugal)
 - Healthcare Resource Groups (England, Scotland)
 - Australian National Diagnosis Related Groups (AN DRGs) (Australia)
 - Group Homogene Malades (GHMs) (France)

○ Case Mix Groups (CMGs)(Canada)

- Casemix adjusted length of stay statistics are published by the NHS Executive and the Audit Commission.
- Any other relevant and appropriate point will also receive credit.

1 mark = 1 point explained clearly or 2 points, but explanation unclear

2 marks = 2 points explained clearly; or 3 points, but explanation unclear

3 marks = 3 points explained clearly

(c) Points may broadly be divided into issues relating to ambulatory care, community care and social care (so issues relating to differing definitions of how and where care is delivered vs true delays in discharge) as follows:

- The division between inpatient acute care and outpatient/ambulatory care may vary in different places. This means that some procedures may be undertaken in outpatients in one place, and as an inpatient/day case in others. This will have the effect of inflating the numbers of short stay cases in the latter unit and reducing the mean length of stay.
- Similarly, some units may undertake rehabilitation in acute beds, and others discharge the patient to rehabilitation in the community/rehabilitation unit. This will raise the length of stay in the former case.
- True delays can be linked to health community or social care provision. (As an example, in England reasons for delayed transfer of care are reported under several categories: e.g. Awaiting care package in own home, awaiting further non-acute NHS care, Awaiting completion of assessment, Awaiting nursing home placement or availability, Patient or family choice, Awaiting residential home placement or availability, Awaiting public funding, Housing, Awaiting community equipment and adaptations).

Note that terminology and service arrangements will vary depending on the local/national context, therefore other relevant examples making similar points should be accepted and receive credit.

1 mark = 1 point explained clearly or 2 points, but explanation unclear

2 marks = 2 points explained clearly; or 3 points, but explanation unclear

3 marks = 3 points explained clearly

Examiner Comments on how candidates performed

In what way did candidates perform particularly well?

Most candidates could identify more appropriate statistics to use for skewed data. Most candidates could identify causes and effects of different case mix to the data.

In what way did candidates perform poorly?

- Few candidates could provide examples of how to adjust for casemix
- Some candidates mistook ambulatory care as pre-hospital care
- Some candidates described how community, social and ambulatory care affect the length of stay as a whole instead of discussing their effects specifically
- There was a lack of knowledge of some basic statistical terminology (left/right, positive/negative skew) and a lack of familiarity with length of stay statistics.

What were the common pitfalls in answering the question?

Although most candidates could identify appropriate statistics to use for skewed data, most failed to describe the potential causes.

Conversely, although most candidates could identify many potential factors affecting casemix, few identified ways to adjust the data to make comparisons more robust.

Pass mark: 5 marks

Question 2:

There has been widespread coverage in the media comparing mortality data of COVID-19 globally.

- (a) Describe some of the common epidemiological issues that may arise in making such comparisons and how they impact on the interpretation of differences in mortality data between countries. (5 marks)
- (b) What measures could be taken to allow such international comparisons? (5 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Likely differences in:

- Selection – hospital deaths, community deaths, both
- Definitions of death due to covid - death certificates, lab testing, both; death within x days from diagnosis
- Reporting lag
- Random error
- Access to testing and treatment
- Demographic structure – younger vs older population, risk factor prevalence
- Control measures impacting on covid and non-covid mortality implemented at different times or in different ways/bundles between settings
- Potential change in non-covid related mortality (cancer, accidents, suicide, alcohol, etc) due to issues arising from the implementation of control measures and/or impact on provision of health services
- Any other reasonable point

Up to 1 mark for each separate point raised and discussed up to a maximum of 5 marks (0.5 marks for identification of issue and 0.5 marks for describing the impact the issue might have)

(b)

- Internationally agreed standards – definitions, recording and reporting
- Validation of data
- Standardisation for age/sex and statistical adjustment for other known relevant factors
- Sufficient care in interpretation taking in to account bias/measurement errors and policy measures
- Use of excess deaths
- Any other reasonable approach

Up to 1 mark for each separate point raised and discussed (0.5 marks for simply naming an approach)

Examiner Comments on how candidates performed

Most candidates provided a reasonable answer to this question, some candidates lost marks by not linking their answers across different sub-sections of the question.

In what way did candidates perform particularly well?

Most candidates provided satisfactory answers to Part a. Candidates should use bullets in the answer, and include no more than one point in each bullet.

In what way did candidates perform poorly?

Many candidates did not address the epidemiological issues they identified in part a.

What were the common pitfalls in answering the question?

Candidates often provided 4 or less points in answering a question of 5 marks.

Pass mark: 6 marks

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

Question 3:

Different strategic approaches to managing the COVID-19 pandemic have been adopted over time and between countries. One important consideration has been the balance between reducing the direct harms due to exposure to the virus, and the indirect effects due to the impacts of the public health measures.

- (a) Describe four ways through which indirect (i.e. not directly due to the infection) harms and benefits to health might have occurred during the COVID-19 pandemic. (4 marks)
- (b) Outline four examples of how both the direct and indirect harms of the pandemic have exacerbated inequalities in health. (4 marks)
- (c) During the COVID-19 pandemic it has been possible to estimate the direct and indirect health consequences of different approaches to managing the pandemic across countries. Describe a measure that can be used to compare the mortality experiences of different countries during a pandemic that accounts for the direct and indirect mortality impacts and explain its strengths and limitations. (2 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Key negative mechanisms are:

- Changes in incomes and employment as workplaces were closed or lost business
- Disruption to education through the movement to online learning and self-isolation periods
- Social isolation as a result of the physical distancing measures
- Higher heating and electricity bills and resulting higher costs or poverty from being at home more often
- Disruption to healthcare provision and accessibility
- Any other appropriate response.

Key positive mechanisms are:

- Reduced traffic and air pollution from closure of workplaces
- Increased volunteering and community activity
- Reduced spread/occurrence of a range of other infections
- Adoption of new technologies, e.g. in healthcare services, allowing remote monitoring and access to advice/care
- Any other appropriate response.

Award 1 mark for each good explanation of a mechanism and a link to health. Responses must include both harms AND benefits to score full marks (i.e. otherwise maximum possible mark is 3).

(b)

- Differences in clinical risk to the direct impacts of the virus (underlying respiratory conditions, obesity, etc.), i.e. the impact of unequal distribution of co-morbidities
- Differences in exposure (essential workers, more likely to be in public-facing positions, less likely to have PPE, less likely to have sick pay, less likely to be able to work from home, overcrowded housing, less able to isolate, etc.) and potential unequal distribution of vaccine hesitancy
- Differences in exposure to social determinants of health (discrimination, incomes, wealth, housing, employment, etc.) clearly highlighting how these are linked to the pandemic

- Differences in getting in and through services, including healthcare services (e.g. inverse care law, candidacy).
- Discrimination, structural racism, structural gender inequality, intersectionality (e.g. including employment and caring practices, double/treble burdens of care, abuse) clearly highlighting how these are linked to the pandemic
- Corporate determinants of health (e.g. greater exposure to marketing during pandemic)
- Any other relevant and appropriate example.

Some candidates may make reference to, or adapt, existing health inequality frameworks (e.g. Bambra's COVID-19 framework; Marmot's Commission on the Social Determinants of Health; Whitehead's 'rainbow' diagram; Krieger's ecosocial theory; etc.)

Candidates should gain a mark for each well-explained example that clearly identifies how Covid-19 relates to the inequality in health, or half a mark for a partially described example or one where the link to Covid-19 is less clearly articulated.

Candidates may score a maximum of 3 out of 4 marks for either direct or indirect harms but cannot score the maximum 4 marks without including both.

(c)

One potential answer here is 'excess mortality' defined as the all-cause crude mortality rate over and above that from an average of pre-pandemic levels in the population of interest. The advantages of this measure include: that it includes all excess deaths no matter their cause (including direct and indirect causes); it does not rely on good testing or diagnostic systems to identify deaths due to (or contributed to by) the pandemic infection; it can be reported relatively quickly because it does not require extensive data cleaning (e.g. by age or specific cause of death); it is relatively stable for weekly or monthly reporting; as it can be easily broken down into weekly figures the comparison allows for seasonality to be taken into account; and it is readily comparable across populations. This approach may account for changes in size or age structure of the population over time; and that it could allow one to distinguish or weight deaths at different ages.

Alternative answers are also possible. All-cause mortality counts over and above pre-pandemic averages for the total population could be used and would give similar results to the crude mortality rates as the denominators are unlikely to be updated over a relevant time period. Disability Adjusted Life Years (DALYs) or Years of Life Lost (YLL) or Quality Adjusted Life Years (QALYs) or Life Expectancy change, or Self-Rated Health (SRH) could all be given as examples but would require their limitations to be clearly articulated. For DALYs and QALYs there would be a need for a large amount of cause-specific data on both mortality and morbidity to be collated and a number of assumptions to be used. This would be difficult to do quickly, across countries, and accurately. YLL is more straightforward but requires age at death and assumptions around which population to use as the comparator 'ideal'. Life expectancy change also requires detailed age-specific mortality data for calculation and is difficult to produce stable data on a weekly or frequent basis. SRH requires surveys to be implemented with the attendant response and measurement biases. It does not include mortality outcomes.

Any appropriate measure should be given credit as long as the key strengths and weaknesses are described. A half mark should be awarded for an appropriate measure; a half mark for a good description or definition of the measure, and up to one mark for an appropriate strengths and weakness (both are required to score the full mark, otherwise half a mark is awarded). As the question specifies that it is to include direct and indirect pandemic impacts, measures of COVID-19 specific mortality or morbidity alone should not attract credit.

Examiner Comments on how candidates performed

Candidates who scored highly typically used a relevant structure or framework in their responses, which helped ensure that their answers were easy to follow and that no key issues were omitted.

In what way did candidates perform particularly well?

Section A was well answered, with most candidates managing to identify and explain several examples.

In what way did candidates perform poorly?

In Section B some of the examples identified did not relate to health inequalities.
Section C was less well answered, with many candidates not identifying suitable methodology.

What were the common pitfalls in answering the question?

Answers showed a poor allocation of time allocated to available marks in some cases – for example much more written in subsections which could only score relatively few marks.

Pass mark: 6.5 marks

Question 4:

The World Health Organization (WHO) has targeted the elimination of Hepatitis C by the year 2030 and most member countries have signed up to this ambition.

- (a) Describe the epidemiology, clinical features and risk factors for Hepatitis C infection. (5 marks)
(b) Outline what key measures need to be in place in order to achieve the elimination targets. (5 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Epidemiology

- Hep C is globally underdiagnosed
- Trend in prevalence – upward – partly increased awareness and diagnosis
- Regional differences in diagnosed cases
- Nature of regional differences – lower in Europe, higher in Asia and North Africa
- Many people with Hep C are co-infected with HIV

0.5 marks for any of below points up to total of 1.5 marks

Clinical Features

- Determining incidence is difficult because most acute infections are asymptomatic, and reinfection is possible
- Where it is symptomatic, symptoms include - fever, fatigue, decreased appetite, nausea, vomiting, abdominal pain, dark urine, pale faeces, joint pain and jaundice
- Can result in liver cirrhosis and hepatocellular carcinoma

0.5 marks for any of below points up to total of 1.5 marks

Risk Factors

- Current and previous Intravenous Drug Use (IVDU)
- People receiving regular transfusion of blood products
- Piercings and tattoos
- Needle Stick Injury
- Vertical transmission
- Regular haemodialysis
- Previous Incarceration
- Homeless populations

0.5 marks for any of below points up to total of 2 marks

(b)

- Prevention/active case finding in key risk groups and services for key risk groups, such as prisons, substance misuse services, antenatal services
- Funding of active case finding and treatment (including re-testing and confirmation of clearance)
- Treatment pathways and infrastructure (including laboratory testing)
- Public and patient education
- Healthcare worker training and infection control practices

- Screening of blood products
- Opt out testing in some services
- Provision of clean injecting equipment and safe spaces
- Strategic leadership of the elimination agenda
- Also potentially, outreach in vulnerable populations (may form part of an answer above)
- Any other reasonable response (including provision of funding for above activities in resource-poor countries)

1 mark for any of the following points up to a maximum of 5 – 0.5-1 mark per point

Examiner Comments on how candidates performed

Some candidates had a heavy focus on a behavioural risk factor when a better answer would have had a broader and more inclusive recognition of the risks. It is important that candidates have a sound theoretical knowledge of prevention including which diseases are vaccine preventable.

In what way did candidates perform particularly well?

Better performing candidates structured their answers well, using headings and bullet points. This was particularly the case when describing clinical features, epidemiology, risk factors, etc, when candidates signposted the examiners to the specific answer being sought, rather than giving a prose-style answer that included some or all of the key points

In what way did candidates perform poorly?

Lack of sound theoretical knowledge about Hepatitis C, therefore disadvantaging themselves in the application and understanding of the knowledge required to answer the totality of the question.

What were the common pitfalls in answering the question?

Confusing Hepatitis B and C or thinking that Hepatitis C is vaccine preventable and therefore based their elimination strategy answer on immunisation.

Pass mark: 6 marks

C: Health information

Question 5:

We live in increasingly multi-ethnic societies. Understanding the health needs and outcomes of people from different ethnic groups using health and care services is important.

- (a) Outline the differences in health outcomes between first and subsequent generation migrants compared with the indigenous population (2 marks).
- (b) Give four reasons why it is important to record the ethnicity of people using health and care services (4 marks).
- (c) Outline four challenges in the use of ethnicity data. (4 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

- First generation immigrants tend to have the same health as the country or area they have moved from. (1 mark)
- Second and subsequent generation immigrants tend to move towards the health outcomes of the indigenous population. (1 mark)
- If other specific examples are given which contradict this general trend (e.g. European migration to USA), then these can attract credit.
- Any other relevant and appropriate point will also receive credit.

(b)

- Ethnic groups may have different health needs (e.g. high birth rate, care of the elderly).
- Ethnic groups may have different health behaviours (e.g. diet and exercise).
- Ethnic minority groups may have poorer access to health care.
- Ethnic minority groups generally have worse health outcomes than the indigenous population but can have better health outcomes.
- Differences in health between ethnic groups may be due to specific factors for particular diseases (e.g. associations between those classified as South Asians and heart disease, those classified as Afro-Caribbean and hypertension).
- Differences may be partly due to other confounders, e.g. the experience of discrimination leading to poorer educational, employment and life opportunities (e.g. reduced mental well-being).
- Evaluation of interventions to reduce inequalities in health
- In order to fully understand the extent of the problem and which groups are affected.
- To enable analysis of health needs data by ethnic group and better inform the development of preventative and treatment services to address needs.
- Any other relevant and appropriate point will also receive credit.

1 mark for each reason discussed, with a maximum of 4 marks.

(c)

- Problems of definition. Ethnicity is not the same as racial origin, skin colour, or country of birth.
- Problems in recording: If it is self-reported, it is now common to ask individuals to identify their own ethnic group from a standard list, which may be restrictive (e.g. that defined by the national census in many countries).
- As there may be small numbers in some groups, there is a tendency to lump heterogeneous categories together (e.g. Asian, Black), which may mask differences.
- Focusing on ethnic group may miss other deprived groups that cross ethnic boundaries in the population (e.g. children living in poverty).
- Inadequate control of confounding factors (e.g. social class, social disadvantage, poorer education and lower income).
- Selective analysis. Ethnicity data tend to be used most when they can help to show that ethnicity gives rise to health 'problems'. However systematic unbiased analysis may often show better health outcomes for certain categories.
- Inappropriate use of analyses. Epidemiological analyses often focus on differences, rather than trying to understand the underlying processes.
- Transient nature of the ethnic groups makes recording trends difficult and small numbers etc.
- Temporal changes in coding and recording – coding has become more refined.
- Any other relevant and appropriate point will also receive credit.

1 mark for each challenge discussed, with a maximum of 4 marks.

Examiner Comments on how candidates performed

In this question, candidates were asked to consider the importance of one element of information that is commonly collected by health and other public services. The rationale for data collection and then its use in public health practice was reasonably well described by most candidates.

In what way did candidates perform particularly well?

Reasons for recording ethnicity.

In what way did candidates perform poorly?

Average answers overall.

What were the common pitfalls in answering the question?

In part 1, some candidates compared health of migrant groups to the indigenous population in general, rather than focusing on differences between first & subsequent generations of migrants compared with the indigenous population. In addition, some other candidates did not compare health of migrant groups to the indigenous population, but gave a global answer about health of migrants.

Many candidates made the assumption that 'healthy migrant effect' means that migrants are healthier than the indigenous population – rather than healthier than the general population in their country of origin. A few candidates confused 'indigenous population' as referring to that of country of origin, rather than country of destination.

Pass mark: 5.5 marks

Question 6:

A local teaching hospital reports 3457 admissions with COVID-19 infection, 619 of whom died within 28 days of admission over a period of 9 months.

- (a) Calculate the 28-day mortality rate for patients admitted with COVID-19. (1 mark)
- (b) Outline three factors that might cause this to be an inaccurate estimate of local mortality from COVID-19. (3 marks)
- (c) Rates in a similar sized hospital in a neighbouring city recorded a mortality rate of 12.6% over the same period.
 - i. Outline four possible explanations for this difference (4 marks)
 - ii. How might estimates be improved? (2 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

This section is asking for the 28 day overall (i.e. all cause) case fatality rate among individuals admitted to hospital with COVID-19 over the 9 months examined.

This case fatality rate is $619/3457 = 17.9\%$.

1 mark

(b)

Relating to the numerator (COVID-19 deaths)

- Not all individuals with COVID-19 who die within 28 days of becoming infected are admitted to local hospitals (deaths before admission, deaths in care homes, deaths in patients transferred out of area)
- Not all deaths within 28 days of developing COVID-19 will be due to COVID-19 (incidental deaths)
- Some individuals will die due to COVID-19 more than 28 days after becoming infected (delayed deaths)
- Some deaths due to COVID-19 will not be identified/recorded as such (misclassification of cause of death)

Relating to the denominator if calculating a COVID-19 case fatality rate (cases of COVID-19)

- How 'individuals admitted with COVID-19' has been defined. This group may include individuals admitted due to clinically significant COVID-19, individuals admitted for another reason that are incidentally found to be infected on routine admission screening, and/or individuals who acquire nosocomial COVID-19 during an admission
- Not all individuals with COVID-19 are admitted to hospital (community cases)
- Not all individuals with COVID-19 are identified (asymptomatic, not testing, false negative test results)

Relating to the denominator if calculating a population-based, COVID-19-specific mortality rate (population denominator)

- Information on the local population, e.g. small area mid-year population estimate, required.

We have given half marks to general comments on why the rate may be an inaccurate measure of COVID-19 mortality, such as 'data quality'. Any other relevant and appropriate point will also receive credit.

3 marks

(c)

i. Possible explanations:

This section is asking candidates to consider why the crude 28-day case fatality rates for individuals admitted to 2 different hospitals with COVID-19 are different.

We have given credit for responses making reasonable, specific comments, including the following

- Admission thresholds (does one hospital have critical care facilities)
- Approach to screening for SARS-CoV-2 on admission (which may add asymptomatic/mild cases to the denominator)
- Case mix of admitted patients (age, ethnicity, comorbidities)
- Quality of care provided during admission

Marks were not awarded for a response stating (without further explanation) that the difference could be due to the hospitals serving areas with different infection rates. This would influence the population-based, COVID-19 specific mortality rate, but not case fatality rates (unless the infection rates differed specifically between groups at high risk of severe disease following infection, or case rates were so high they overwhelmed the local health service).

half marks applied to general comments on why the case fatality rates may differ, such as 'data quality' or 'chance'.

4 marks

ii. How might estimates be improved?

Full marks to correct responses to the question, specifically

- Clearer definitions for numerator (relevant deaths among admitted cases) and denominator (relevant admitted cases)
- Statistical approaches that deal with confounders e.g. production of standardised rates

Half marks to general responses suggesting how the COVID-19 case fatality or mortality rate may be better estimated, e.g.

- Larger sample sizes
- Capturing all relevant deaths and cases (not just admitted)

2 marks

Examiner Comments on how candidates performed

Candidates who performed highly were able to relate key epidemiological concepts to the specific question context instead of merely repeating them without regard to application.

In what way did candidates perform poorly?

When asked to consider reasons for different mortality rates in different areas, poorly performing candidates reiterated the chance/bias/confounding/true mantra, without showing understanding of how these may pertain to the particular situation.

Pass mark: 6.5 marks

Specimen Paper B Questions and Mark Scheme
Paper IB

D: Medical Sociology, Social Policy and Health Economics

Question 7:

Describe each of the following concepts, providing a definition (1 mark), an explanation of the theoretical basis (2 marks) and an illustration of the concept from a public health perspective (2 marks).

- (a) The Sick Role (5 marks)
- (b) Social iatrogenesis (5 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Definition: The sick role is a theoretical concept that identifies widely shared expectations that govern behaviour in relation to health. Individuals who wish to 'claim' the sick role are entitled not to be considered responsible for their health problem and are exempted from normal responsibilities. In return there are obligations: to want to get well as soon as possible and seek proper help. Doctors play a key role in determining entitlement to sick role.

1 mark for any definition that captures the concept of the sick role as defining rights and responsibilities /obligation for those 'claiming' a sick role.

Theoretical basis

Parsons (**1951**) - developed the ideal type of the sick role from functionalist theory.

The concept of the sick role emerged from the defining of illness as a form of 'deviance', disrupting the social system because illness prevents the performance of a person's normal social role and responsibilities.

Deviance from the social role due to illness may not be preventable, so the behavior associated with illness has to be controlled through defining a set of social roles for someone who is ill-the sick role.

The role consists of two sets of rights (To be exempted from blame for the condition; and exemptions from usual social role responsibilities) and two sets of obligations (to seek technically competent help; to want to get well).

These are complemented by obligations and privileges accorded to the healthcare professional, who has the power and authority to grant and remove the legitimacy of the sick role from a person. The health professional is expected to do this on objective criteria, applied universally.

Critique of the concept (as additional information for the theoretical basis) has focused on:

- Blame may be attached to some illnesses or conditions (e.g. HIV/AIDS; other STDs; RTA5)
- There may be variability in exemption from normal role responsibilities e.g. women, children, men.
- The concept assumes medical science can offer technically competent help.
- The obligations of the sick role may not be appropriate for patients with terminal illness.

Example

Because the sick role can be 'assigned' by a health professional, there can be aspects of blame attached to some conditions that exclude people from the sick role and instead may give rise to stigma. There can be dispute over whether conditions such as obesity or addiction should merit the 'sick role', and the rights associated with the role. These conditions may be perceived as 'self-inflicted' and avoidable, therefore not

entitled to the sick role, and this can exclude people from support and care. These conditions are, however, strongly linked to other consequences, including diabetes, heart disease and, in the case of addictions, problems with, for example, employment and providing support for children. The implications therefore of not giving people access to the 'sick role' can have wide-ranging consequences, but some may argue that 'legitimising' these conditions within the sick role leads to over-medicalisation of the response and a loss of self-efficacy in addressing them.

Other examples of relevance of sick role equally acceptable, as long as explained and justified.

Definition = 1 mark

Theoretical basis = 2 marks

Example of relevance to public health = 1 for basic example, 2 for good, well-described example

(b)

Definition: A concise definition would be that of Thompson - "the ways in which the social organisation of healthcare becomes a causal factor in the experience of ill health".

1 mark for a definition that captures this connection.

Theoretical basis

Illich described social iatrogenesis as the expanding nature of medicine that accompanies the industrialization of society. This will create an artificial need of industry for its product which will encourage people to become consumers of curative, preventive, industrial and environmental medicine. This will result in medicine undermining people's ability to manage their own health, and to cope with pain, suffering and death.

The answer may make mention of clinical iatrogenesis – whereby medical treatment worsens existing illness or indeed creates new illness. There is a higher risk of this when people become increasingly dependent on medicines, procedures and hospital admission to manage poor health.

Structural iatrogenesis may also be mentioned, linking the role of the healthcare professional to the increasing reliance of people on technology and professionally led response to illness, pain and death and diminishing the value of other lay-informed responses.

Example

Using the example of obstetric care, social iatrogenesis can be seen as contributing to the creation of a society where childbirth only within a hospital setting becomes the norm and vaginal delivery rates fall in favour of operative delivery. There is a loss of acceptance that childbirth is, in most circumstances, a function that women's bodies can achieve in a less medicalised setting, resulting in lower risk of some of the potential complications of operative delivery and the costs of hospital admission.

Other examples might be the potential for over-medicalisation of some childhood behavioral problems, medical interventions for overweight and obesity or, more broadly, the impact that social iatrogenesis can have on ever-increasing healthcare spend as people seek technological solutions to health and wellbeing issues that might previously have been self-managed.

Definition = 1 mark

Theoretical basis = 2 marks

Example of relevance to public health = 1 for basic example, 2 for good, well-described example

Examiner Comments on how candidates performed

Candidates performed less well on this question. A key discriminant between high-scoring and low-scoring answers was the presence of a structure that reflected knowledge of sociological principles. As with other questions, demonstrating application beyond mere recall was important to achieve a higher mark.

In what way did candidates perform particularly well?

High scoring answers were structured well. Many answers were poorly structured which made it difficult to pick up distinct points.

In what way did candidates perform poorly?

Few candidates were able to demonstrate a detailed grasp of relevant theory e.g. few could explain iatrogenesis in detail.

Candidates answered the subsection on the sick role better than they did the subsection on iatrogenesis.

What were the common pitfalls in answering the question?

Some candidates confused social iatrogenesis with the social aspects of wider determinants of health.

Pass mark: 5.5 marks

Question 8:

A recent systematic review (Masters et al, J Epidemiol Community Health. 2017; 17:827-834) included the following introduction:

“Public sector austerity measures in many high-income countries mean that public health budgets are reducing year on year. To help inform the potential impact of these proposed disinvestments in public health, we set out to determine the return on investment (ROI) from a range of existing public health interventions.”

From the perspective of evaluating public health interventions, define and briefly explain each of the following terms, using appropriate examples to illustrate your answer.

- (a) Return on investment (2 marks)
- (b) Opportunity cost (2 marks)
- (c) Discounting (3 marks)
- (d) Time horizon (3 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Return on investment (ROI) is a form of economic evaluation that values the financial return, or benefits, of an intervention against the total costs of its delivery. It is calculated as the benefit minus the cost, expressed as a proportion of the cost.

For example, a public health intervention that averaged an ROI of 4 would indicate that every £1 invested yielded a return of £4 plus the original investment back.

1 mark for the definition of return on investment.

1 mark for correct and clear explanation, using an example from a public health intervention

(b)

Opportunity cost is defined as the benefit foregone by not investing in the next best alternative. Scarce resources (money, staff, equipment etc) can only be spent once. Resources are wasted if they could have been used to greater effect on an alternative intervention.

1 mark for the definition of return on investment.

1 mark for correct and clear explanation, using an example from a public health intervention

(c)

Discounting is standard practice in economic evaluation. It reflects the fact that in an ideal world we would choose to have benefits now and costs in the future. If we can spend money in the future rather than in the present day we could earn interest on the money in the meantime. There is also an opportunity cost to spending money now.

GDP increases over time which means that a pound today has a higher comparative value than a pound tomorrow, even after allowing for inflation.

Discounting future costs is not controversial. There is an argument that we should not discount future health benefits because health, unlike money, cannot be invested to produce future gains.

The choice of discount rate may affect the relative ranking of interventions. A high discount rate tends to disadvantage public health interventions compared to healthcare interventions, as the benefits from public health interventions tend to occur over a longer time period than healthcare interventions.

1 mark for each separate point, correctly explained and in the context of public health interventions, to a maximum of 3 marks. Any other relevant and appropriate point will also receive credit.

(d)

Time horizon is the duration over which costs and benefits are calculated.

Compared to healthcare interventions, public health interventions often have a longer time horizon over which the benefits are realised.

Use of too short a time horizon will undervalue the benefits of preventative interventions.

Use of discounting, where future benefits are values lower than current ones, also exacerbates undervaluing of interventions with long time horizons.

Any other relevant and appropriate point will also receive credit.

1 mark for each separate point, correctly explained and relevant to public health interventions, to a maximum of 3 marks.

Examiner Comments on how candidates performed

Questions were generally answered well, although candidates who provided less specific, more generic answers did not score as well. Some candidates, while providing a correct definition, demonstrated through their example, that they did not actually understand the concept defined.

In what way did candidates perform particularly well?

Often recited definitions quite well e.g. opportunity cost.

In what way did candidates perform poorly?

Examples did not demonstrate understanding. Often, they actually contradicted or confused the answer.

Many did not understand the term 'time horizon'.

What were the common pitfalls in answering the question?

Tendency for minimal explanation of any examples that were given. Particularly in relation to opportunity cost.

Very few candidates included the formula for discounting $1/(1+r)^n$ where r is the discount rate and n is the number of years.

Pass mark: 5 marks

E: Organisation and Management of Health Care, and Health Care Programmes

Question 9:

- (a) Describe what is meant by the term risk management and how it is relevant to a healthcare organisation. (3 marks)
- (b) Using examples, describe approaches for managing risk in a healthcare organisation. (7 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Risk management:

- Involves preparing an organisation to deal with avoidable or preventable incidents, or indeed unexpected incidents that may not be preventable. Incidents may occur either inside or outside the organisation (e.g. natural disaster such as an earthquake).

Organisations need to prepare for various avoidable/preventable risks by considering:

- The probability of a given risk occurring
- The impact of that risk should it occur

Relevance of risk to healthcare organisation (HCO):

- Underpins patient care and health and wellbeing of its staff and visitors;
- Enables delivery of HCO's vision through best use of health care system resources;
- Corporate responsibility to lead;
- Everyone's business to understand;
- Key component of well managed programmes;
- Essential component of good governance and assurance processes

Could also mention national litigation mitigation schemes (e.g. NHSLA) and links to good governance and overall reputation of the health care system.

Note answer may be discussed in connection with any of the following:

- Risks to patients - infections HCAI etc
- Risk to practitioners - health, safe environment and knowledge
- Risk to organisation
 - Reputation
 - Financial
 - Business-Critical Deliverables
 - Safety
 - Staffing Issues
 - Estates
 - IT
 - Confidentiality

Any other relevant and appropriate point will also receive credit.

Up to 1 mark is available for defining risk (0.5 marks for considering the probability of an event occurring and 0.5 marks for considering the impact of that event) and up to 2 marks available for clearly describing how this is relevant to healthcare using well explained and separate reasons/examples (0.5 marks available per separate reason/example).

(b)

Techniques to minimise risk:

Identifying, analysing, assessing, rating, treating, monitoring and minimising risk

1. Systematic and structured risk management framework.

- Use of agreed methodology to analyse range of potential consequences and likelihood of risks using the standard classification 5x5 likelihood vs impact matrix.
- Recognition of spectrum of risk: low-moderate-high-very high.
- Action plans to manage / minimise significant levels of risk (high or very high)
- Root cause analysis to identify system factors, and human factors to manage risks

2. Collation of risk information in a consistent format

- Use of risk registers
- Appropriate reporting mechanisms to provide assurance of effective management of risk

3. Cultural factors within organisation

- Open and transparent practices
- Clear policies
- 'No blame' culture
- Accurate, timely data which is actively used by staff and management (scrutiny culture)
- Clear accountabilities
- Upwards reporting systems are clear
- Audit and feedback with demonstrable success in reducing risk

Any other relevant and appropriate point will also receive credit.

1 mark: for a relatively brief mention of one example and one suitable technique to manage risk

2 marks: for mentioning a number of examples and discussing in detail one approach to managing risk, or several approaches but with little adequate detail.

3 marks: as in 2, but with at least two risk management strategies described in good detail

4 marks: as in 3, but with at least three risk management strategies described in good detail linked to relevant examples.

5 marks: as in 4, but with at least three risk management strategies described in good detail linked to relevant examples with a clear public health context, and/or including discussion of cultural factors relevant to risk management within the organisation.

6-7 marks: as in 5, with three risk management strategies described in good detail with relevant examples with a clear public health context and including discussion of cultural factors relevant to risk management within the organisation.

Examiner Comments on how candidates performed

This question asked candidates to consider a topical and key aspect of management within a healthcare organisation. In general, candidates provided good answers and scored well, particularly those who considered a variety of different strategies. However, some candidates did not apply their answers to the specific setting or did not describe how techniques might be applied (in addition to just listing them), and these candidates received less credit for their responses.

In what way did candidates perform particularly well?

Some candidates referred to other budgeting approaches to draw out the advantages and disadvantages of the one being asked about. Examples often came across as particularly convincing when they related to examples from the candidates' own practice or examples in the literature.

In what way did candidates perform poorly?

Candidates lost marks in some cases because they did not give a full explanation of the budgetary approach asked about (e.g., for weighted capitation not mentioning it is based on size of the population and weighted for measures of population need). Some made generic comments about resource limitations or fairness, without showing how these related directly to what had been asked, and these comments received no marks.

What were the common pitfalls in answering the question?

Please see preceding comments – pitfalls were not giving a full answer, not answering all the elements (definition, PH relevance, pros, cons, example)

Pass mark: 5.5 marks

Question 10:

A national audit body proposes to audit health spending in your country.

- (a) Name two reasons why a national audit of health care spending is important (1 mark)
- (b) In conducting the national audit, the auditing body proposes to use a range of indicators. For each of the following, give a brief description and describe one strength and one weakness of the indicator as part of such an audit:
- i. Health expenditure per capita (3 marks)
 - ii. Life expectancy (3 marks)
 - iii. Patient-reported outcome measures (3 marks)

(Total 10 marks)

Key Points and Mark Scheme

(a)

Enables comparison with other countries; enables trends in spending over time to be examined; helps identify areas in which better value for money could be delivered; informs management and allocation of resources; enables comparison of health expenditure with spending in other sectors or as proportion of GDP; allows national-level assessment of relationships between health spending and health outcomes.

Any other relevant and appropriate point will also receive credit.

0.5 mark for any of the above.

(b)

(i) *Health expenditure per capita* is the average (mean) amount of spending on health for each member of the population OR the total national expenditure on health divided by the number of people in country [either of these, or a similar variation, earns a mark]. Strength of this indicator: relatively easy to calculate; weakness of this indicator: doesn't capture inequalities or (by itself) identify inefficiencies in spending.

(ii) *Life expectancy* is the length of time that a person in a defined population can expect to live, usually based on birth year, current age, and factors such as sex. Strength of indicator: it is a good summary measure of the health of a population; it is easy to compare across populations or to look at change over time. Weakness of indicator: life expectancies are calculated based on historical data so either refer to a cohort that has been followed to extinction (e.g. people born in 1900 - cohort life expectancy) OR (more usually) is calculated based on observed period data (e.g. over a year) for people of different ages and then project forward (period life expectancy) - such estimates don't take into account background changes in mortality rates and only reflect mortality patterns at one point in time. Alternatively: life expectancy figures are averages and don't capture mortality risks at different ages, such as high levels of infant mortality.

(iii) *Patient-reported outcome measures* are arrived at by asking patients about their experiences of interactions with healthcare or whether their care provided them with what they wanted (or a variation on this wording). Strength of this indicator: it is patient-centred and gives insight into whether patients think they are getting the care they need and want; weakness is that expectations may vary in different settings so comparison across countries may be difficult to interpret (i.e., it is subjective)

For each: 1 mark for an appropriate description, 1 mark for an appropriate strength, and 1 mark for an appropriate weakness. Any other relevant and appropriate point will also receive credit.

Examiner Comments on how candidates performed

In what way did candidates perform particularly well?

Questions were generally well answered, with good use of examples.

Most provided each element of the question e.g. a definition, a strength and a weakness.

In what way did candidates perform poorly?

A surprising number of candidates could not give definitions for very common methods/terms e.g. life expectancy.

What were the common pitfalls in answering the question?

Not providing all elements asked for e.g. a definition AND a strength AND a weakness.

Candidates should also ensure that if they are asked for a definition, a strength and a weakness, that they provide all three elements, and if they are asked for X number of examples, again they provide this number.

Numbering, bulleting, underlining and generally breaking up the answers is very helpful for the marker.

Pass mark: 6 marks