S5 Health Management and Social Care Practice Paper 1 | BMI, epidemiology, cost-effectiveness, ageing

Senior Secondary Health Management and Social Care

S5 Health Management and Social Care practice paper with answers: BMI, epidemiology, cost-effectiveness, dependency ratio and community care.

1. BMI and health risk assessment (16 marks)

Show the working and give answers to one decimal place.

#	Question
1	(a) A person weighs 68 kg and is 1.70 m tall. Calculate the BMI to two decimal places and classify it under the Asian adult standard, where 18.5 to 22.9 is normal.
2	(b) Another person weighs 52 kg and is 1.60 m tall. Calculate the BMI to two decimal places and find the weight range that corresponds to the normal BMI band, to one decimal place.
3	(c) A person is 1.75 m tall and weighs 82 kg. Calculate the BMI to two decimal places and state the class; how many kilograms must be lost to bring the BMI down to 23.0, to one decimal place?
4	(d) State two limitations of using BMI to assess health risk.

2. Incidence, mortality and comparison of rates (18 marks)

Express rates per 1000 population and show the working.

#	Question
5	(a) A district has a population of 250,000 and records 1,500 new cases in a year. Find the incidence rate per 1000 population.
6	(b) In the same year the district records 1,750 deaths and 12,000 confirmed cases in total. Find the crude death rate per 1000 and the case fatality rate as a percentage to one decimal place.
7	(c) District A has an ageing population and a crude death rate of 7.0 per 1000; district B has a young population and a rate of 5.0 per 1000. After age standardisation the figures are 6.2 for A and 6.8 for B. Explain the difference between the two sets of figures and the purpose of standardisation.
8	(d) Distinguish life expectancy from healthy life expectancy and explain why the latter matters for planning long-term care.

3. Health care cost and cost-effectiveness analysis (16 marks)

Show the working and the units; express money in dollars.

#	Question
9	(a) Option A costs 480,000 dollars and gains 6 QALYs; option B costs 720,000 dollars and gains 8 QALYs. Find the average cost per QALY for each and state which option should be adopted first under a fixed budget.

#	Question
10	(b) Taking option A as the baseline, calculate the incremental cost-effectiveness ratio (ICER) of option B. If the local threshold is 150,000 dollars per QALY, is the extra spending on option B justified?
11	(c) A drug costs 3,500 dollars a month and the patient co-pays 20 per cent. Find the monthly co-payment; if a monthly cap of 500 dollars applies, how much does the patient actually pay and how much does the government subsidise?
12	(d) Describe three common measures for controlling health care costs and identify the equity concern raised by one of them.

4. Population ageing and dependency ratios (18 marks)

Express ratios as percentages to one decimal place.

#	Question
13	(a) A place has 10 million people: 1.2 million aged 0 to 14, 2 million aged 65 or above and 6.8 million aged 15 to 64. Find the total dependency ratio in percentage points.
14	(b) Find the current old-age dependency ratio. If in ten years the older population rises to 2.8 million and the working-age population falls to 6.4 million, find the new ratio and the increase in percentage points.
15	(c) Of the 6.8 million people aged 15 to 64, 6.46 million are employed. Find the employment rate; if average health spending per older person is 24,000 dollars a year, find the total annual spending for 2.8 million older people in ten years, in hundred million dollars.
16	(d) Suggest three policy directions for responding to population ageing and state the target group of each.

5. Estimating community care needs and service planning (16 marks)

Show the working; give places and beds as whole numbers.

#	Question
17	(a) A district has 48,000 people aged 65 or above, of whom 12 per cent have functional limitations. Find the number needing long-term care.
18	(b) The planning standard is 4.5 day care places per 100 older people. Find the number of places required and the shortfall against the 1,900 places now available.
19	(c) Assume 20 per cent of older people need residential care places. Find the number of places required; if 1,800 places exist and 600 can be added each year, find the number of years needed to close the gap.
20	(d) Compare home care with residential care in terms of cost, autonomy and carer burden.

6. Health promotion and behaviour change (16 marks)

Give outcome figures in percentages to one decimal place.

#	Question
21	(a) A smoking cessation programme has 2,500 participants and 500 quit after one year; in a comparison group of 1,250 people, 250 quit without the programme. Find the quit rate in each group and comment on the added effect of the programme.
22	(b) The programme costs 1,200,000 dollars in total. Find the average cost per participant and the average cost per successful quitter.
23	(c) Using the health belief model, explain three factors affecting the intention to quit smoking, each with an example of community promotion.
24	(d) State two indicators for evaluating health promotion and one limitation of each.

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