ADMINISTRATIVE MEDICINE

Part I Examination

Monday 11 June 2018
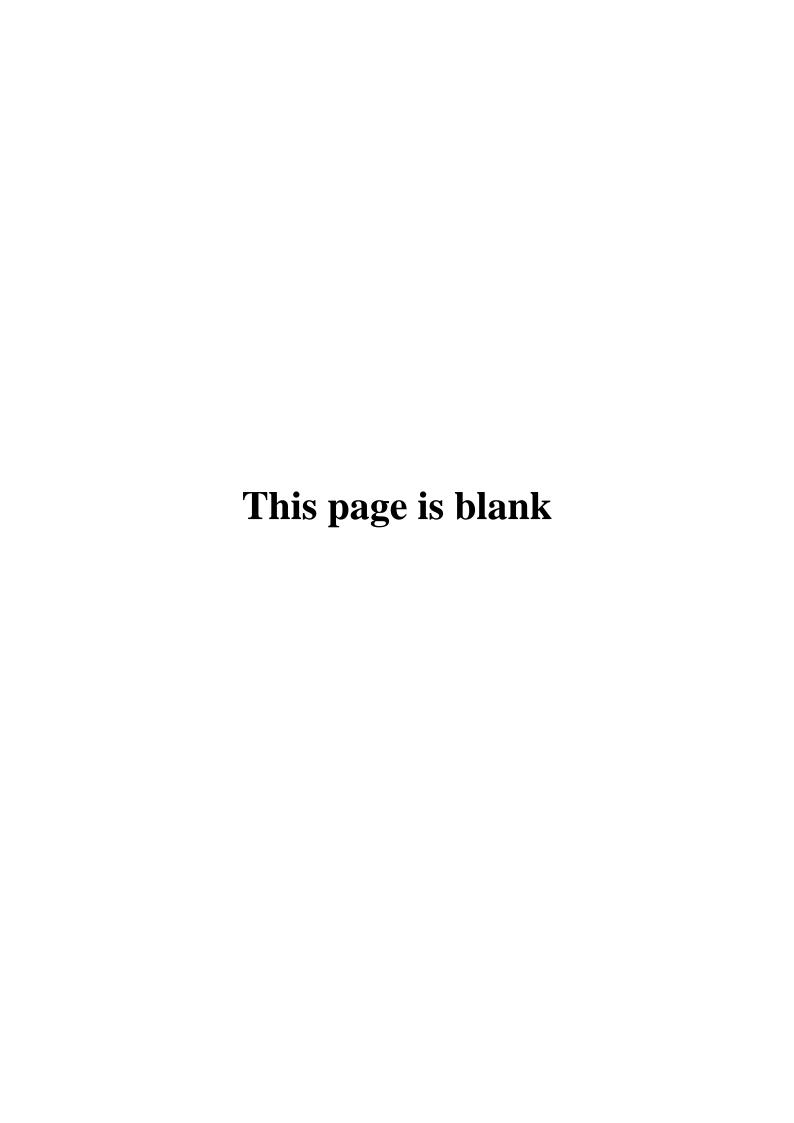
15:30 – 18:00 (2½ hours)

Paper IA

Candidates must answer all parts of this questions

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.
Weighting of marks for each part of the question is shown in parenthesis.

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1. Since the removal of alcohol duty in Province Y, there are several news reports on the increasing alcohol problem among secondary school students in the capital, City X. You are asked to conduct a cross sectional study on the prevalence of alcohol misuse amongst the students, and you have decided to use simple random sampling as most secondary schools are located in the same district.

    a. What <u>FOUR</u> pieces of information you will need for estimating sample size required for this cross sectional study? (2 marks)

    b. Describe an alternative sampling method for a cross sectional study on students from secondary schools located in sub-urban and rural areas of Province Y. (3 marks)

    (5 for overall understanding and coherence of the answers)

QUESTION CONTINUES

2. A retrospective study was done to identify the risk factors related to all-cause mortality for Chinese patients with type 2 diabetes mellitus who had received public primary care services in Hong Kong. Table 1 below shows the results of the final model for male patients using a Cox regression model.

Table 1: Cox regression model for predictors* of developing all-cause mortality

Predictors	Hazard Ratio (95% C.I.)		P-value
Age, years	1.13	(1.11, 1.16)	<0.001
Smoker (Ref: Non-smoker)	1.71	(1.56, 1.88)	<0.001
Anti-hypertensive drug usage (Ref: No)	1.39	(1.23, 1.59)	<0.001
Insulin usage (Ref: No)	1.25	(1.01, 1.55)	0.043
Lipid-lowering agents usage (Ref: No)	0.79	(0.72, 0.88)	<0.001
BMI, kg/m2	0.77	(0.71, 0.84)	<0.001
HbA1c, %	0.86	(0.75, 1.00)	0.046
SBP, mmHg	0.96	(0.93, 0.98)	<0.001
log (Urine ACR+1), mg/mmol	1.21	(1.17, 1.25)	<0.001
eGFR (Ref: >90 ml/min/1.73m^2)			
60-89 ml/min/1.73m2	1.31	(0.54, 3.15)	0.546
30-59 ml/min/1.73m^2	40.35	(10.55, 154.34)	<0.001
<30 ml/min/1.73m2	23.93	(1.08, 532.01)	0.045
Goodness-of-fit			
C statistic	0.768		

*Otherpredictors not shown in the table: interactions between age and clinical parameters (BMI, HbA1c, SBP and eGFR), and second orderterms of BMI, HbA1c and SBP

(Source: E.Y.F. Wan et al. Prediction of five-year all-cause mortality in Chinese patients with type 2 diabetes mellitus – A population-based retrospective cohort study. Journal of Diabetes and Its Complications (2017) 31(6): 939-944.)

QUESTION CONTINUES

a. A Kaplan-Meier curve can also be used to estimate the survivorship. Suggest one limitation of a Kaplan-Meier curve when compared to a Cox regression model. (1 mark)

b. Describe step-by-step how stepwise selection works. State two more variable selection methods. (4 marks)

c. What is hazard ratio? Interpret the hazard ratio of smoker and comment on its significance (3 marks)

d. What is C statistics? Comment on the goodness-of-fit of the above model based on the C statistic.(2 marks)

3. Hong Kong has an ageing population. Many residents> 65 years live in Residential Care Homes for the Elderly (RCHE) rather than in their own home or with family. Most elderly residents of RCHE however, at the end of their lives, are sent to hospitals and die there, instead of dying in RCHE or dying at home.

a. Describe 4 socio-medical reasons for Hong Kong elderly residing in RCHEs. (2 marks)

b. List and explain 4 barriers that are preventing Hong Kong elderly, who may wish to die at home or in RCHE, from doing so? (2 marks)

c. Describe at least 6 measures which can be applied to support End of Life (EOL) Care and dying in place for elderly residents of RCHEs. (6 marks)

4. Clinical Practice Guideline (CPG) is a tool to get research evidence into clinical practice.

   a. What are the purposes of developing CPG? (2 marks)

   b. Write short notes on the processes of development of CPG. (4 marks)

   c. Discuss 4 key success factors in implementing CPG. (4 marks)

5. You are the Deputy Hospital Chief Executive of a 400-bed acute general hospital.   Your Patient Relations Officer (PRO) is uncertain about how to handle a complaint case made by the daughter of an elder patient against the case doctor.   The complainant immigrated to Hong Kong from the mainland a decade ago, and is now a primary school teacher.   She lives with the patient, her widowed mother, and is the only child.

The complainant is extremely upset that the case doctor has disclosed to her mother (the patient) last week of a bronchoscopy biopsy result, which is positive for lung adenocarcinoma. In the complaint letter, the daughter stated that: (1) in previous hospitalizations every time a case doctor discussed significant medical information, it was always with her present. This time it is in her absence; (2) her mother has been eating very little since knowing the result and is "losing the will to live"; (3) her mother wishes any discussions of her medical condition to go through the complainant.

QUESTION CONTINUES

The case doctor when approached by the PRO noted that it was during a regular round (daughter absent) when the patient asked him about the examination result and he had duly answered and explained the findings. There is no agreement or promise anywhere stated in the hospitals notes that communication of patient's condition should route through the daughter. In any case, he considers it wrong to route through the daughter.

a. List three issues in this case and among these identify the key ethical issue. (4 marks)

b. Identify two ethical principles relevant to the formulation of a position to respond to the daughter. (3marks)

c. Besides considering the ethical dimension in this case, what other actions may help to handle the case well? (3 marks)

6. The Chief Executive of the Hong Kong SAR announced that a pilot district health centre will be set up in the Policy Address 2017.

a. Describe any two of the policy objectives of setting up the district health centre. (2 marks)

b. Describe the possible benefits and challenges in setting up such centers to the Hong Kong public health care system (4 marks)

c. Who are the key stakeholders involved and how can these stakeholders be engaged? (4 marks)

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