

**International Institute of Health Management Research (IIHMR)**  
**NEW DELHI**  
**Batch- 2018-20**  
**Term Exam**

Time – 3 Hrs

Total marks: 70

**HEM 702: Applied Epidemiology**

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- I. Read the excerpts of the two articles provided (abstract and methodology) and give your critical comments. With reasons, state which article you would rate better for its methodological rigor.**

*[Morrow RL, Dormuth CR, Paterson M, et al. Tramadol and the risk of seizure: nested casecontrol study of US patients with employer-sponsored health benefits. BMJ Open 2019;9 and*

*Najafpour, Z., Godarzi, Z., Arab, M., Yaseri, M. Risk Factors for Falls in Hospital In-Patients: A Prospective Nested Case Control Study. International Journal of Health Policy and Management, 2019; 8(5): 300-306]*

**(15 + 15 =30 marks)**

- II. Consider the following scenario and answer the questions as you read through:**

Rumours of an outbreak of unusually severe respiratory illness in two villages in a remote province reach the Ministry of Health in one of the World Health Organization's (WHO's) Member States. A team is dispatched to the province which identifies at least 50 cases of illness in all age groups over the previous month. Most of the patients had a severe onset of fever and cough, progressing to shortness of breath in less than a day. Twenty patients are currently in the provincial hospital. Five people have already died of pneumonia and acute respiratory failure.

- 1. Can you call this an outbreak? Substantiate.**
- 2. Should this situation be reported? To whom? Why?**
- 3. Suggest standard case definitions for suspected and probable cases.**

Surveillance in surrounding areas is increased, and new cases are identified throughout the province. Respiratory specimens collected from several patients are tested at the national laboratory and are found to be positive for type A influenza virus, but they cannot be further subtyped. The isolates are sent to the WHO Reference Centre for Influenza for further characterization, where they are characterized as influenza A(H6N1), a subtype never isolated from humans before. Gene sequencing studies further indicate that most of the viral genes are from a bird influenza virus, with the remaining genes derived from a human strain.

- 4. Do you want to re define the standard case? Who is a confirmed case?**

Cases start to appear in surrounding towns and villages. The new influenza virus makes headlines in every major newspaper, and becomes the lead story on news networks.

- 5. Is this a Public Health Emergency of International Concern (PHEIC)? How would you decide?**
- 6. What are the next steps for the country under International Health Regulations?**

**(3 + 2+ 4 + 4 + 6+ 6= 25 marks)**

- III. Mr. Singh is a 48 year old office goer who is on medications to control his blood pressure. His blood pressure is under control. He always tells his colleagues, " By God's Grace I am as healthy as when I was in college, except for my blood pressure". That year, annual health check up for employees was introduced in his office and Mr. Singh too went through it. He was confident of his tests returning normal but to his horror, his blood sugar values were reported to be higher than normal.**

- 1. What would you call the annual health check up in Mr. Singh's office – screening or diagnostic check ups? Why?**
- 2. If the prevalence of diabetes mellitus is 10% in the community and the blood test that Mr. Singh took had a sensitivity of 70% and a specificity of 90%, what are the chances that Mr. Singh has diabetes mellitus?**

**(5 +10 =`15 marks)**