



The University of Fiji
(An Entity of Arya Pratinidhi Sabha of Fiji)



UMANAND SCHOOL OF MEDICINE AND HEALTH SCIENCES
Semester 2, 2025

FINAL EXAMINATION PAPER

CMED 305: COMMUNITY AND FAMILY MEDICINE

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with pen) and **180 minutes (3 Hours) to complete this paper**.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. This paper contains three (3) sections A, B and C. All questions are compulsory to answer **except** section A having choice.
6. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
7. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u> <u>n</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1 – 30	Multiple Choice	30	50 minutes
B	31 – 34.	Short Answer Questions	40	70 minutes
C	35 – 36	Long Answer Questions	30	60 minutes
		TOTAL	100	180 Minutes

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Registration Certificate Number (RGN0020/11)*

SECTION A.

Answer ALL Questions.

TOTAL MARKS – 30

1. In the investigation of an epidemic the most appropriate measure to describe the frequency of occurrence of illness is the:
 - A. Prevalence
 - B. Incidence rate.
 - C. Case-fatality rate.
 - D. Attack rate.
 - E. Mortality rate.

2. In practice the existence of an epidemic is most often determined by:
 - A. The identification of more than 10 new cases per week.
 - B. A current incidence rate that is more than two standard deviations higher than the previous year.
 - C. A clear case definition.
 - D. An incidence of disease that is clearly in excess of that expected.
 - E. Most laboratory specimens testing positive.

3. Which of the following factors is most important when considering the validity of the results of a clinical trial?
 - A. There are equal numbers of people in the intervention and control groups
 - B. A relatively high incidence of the outcome of interest in the study population
 - C. Inclusion of people of all ages
 - D. Random allocation of participants to the intervention and control groups
 - E. 100% compliance with the intervention.

4. The following are all characteristics of the prevalence of a disease except one, which one?
 - A. It includes all of the existing cases of disease in a community
 - B. It depends on the duration of the disease process
 - C. It can be used to help determine the health care needs of a community
 - D. It depends on the incidence of disease
 - E. It is always measured over time

5. A case-control study of oestrogen use and uterine (endometrial) cancer showed an attributable fraction of 60%. Assuming the relation between oestrogen use and uterine cancer is causal this suggests that:

- A. 60% of all uterine cancers can be attributed to oestrogen use.
- B. 60% of women who use oestrogen will develop uterine cancer.
- C. 60% of uterine cancers in oestrogen users could potentially have been prevented if they had not used oestrogen.
- D. The proportion of cases that had used oestrogen is 60%.
- E. The proportion of controls that had used oestrogen is 40% (100% – 60%).

6. 1000 adults who presented to their local emergency department with a possible heart attack and had a blood sample collected for laboratory tests. It was later found that 300 of these people had not had a heart attack and the levels of triglycerides in the blood of this group were compared with the levels among the 700 who had had a heart attack giving the following results:

	Heart attack	No heart attack
High triglycerides	600	100
Low triglycerides	100	200
Total	700	300

The odds ratio for the association between high triglycerides and heart attack is:

- A. 3.0
- B. 6.0
- C. 12.0
- D. 2.3
- E. It cannot be calculated from the data shown

7. The association in the question above was statistically significant and persisted after adjusting for age, sex, gender and blood cholesterol levels so the investigators concluded that people with high triglyceride levels were at higher risk of having a heart attack. This conclusion is:

- A. Justified because the association did not change when the investigators adjusted for possible confounders.
- B. Justified because the association was statistically significant.
- C. Not justified because it was not a population-based sample.
- D. Not justified because the groups were not matched for potential confounders.
- E. Not justified because having a heart attack might lead to increased triglyceride levels.

8. Which is the best way to prevent confounding from occurring in a study?

- A. Randomisation.
- B. Measurement.
- C. Observation.
- D. Placebo.
- E. descriptive analysis.

9. Which of the following is true of a case-control study?

- A. Good for studying rare diseases.
- B. Generally, less expensive than cohort studies.
- C. Retrospective.
- D. A, B and C are all true.
- E. None of the above statements is true.

10. If an ecological study shows a strong positive correlation between per capita alcohol consumption and breast cancer incidence rates in European countries we can draw the following conclusion:

- A. Alcohol consumption is a risk factor for breast cancer.
- B. Breast cancer rates are higher in countries with higher alcohol consumption.
- C. We cannot draw any conclusions because the association could be due to selection bias.
- D. We cannot draw any conclusions because the measurement of alcohol consumption is likely to be unreliable.
- E. Women who drink more alcohol are more likely to develop breast cancer but this does not mean that the association is causal.

11. Over the last 15 years PSA screening to detect asymptomatic prostate cancer has become more widespread. As a result, survival, measured by the time from diagnosis to death among men with prostate cancer, has increased. Using only this information, which of the following statements is correct?

- A. PSA screening has been effective in reducing mortality from prostate cancer
- B. Screening men more often would detect more cancers and reduce mortality
- C. Survival from time of diagnosis to death might have increased without any decrease in mortality
- D. A, B and C are all true
- E. None of the above statements is true

12. In a series of 1000 women with breast cancer, 32 were pregnant. From this we can conclude:

- A. Pregnancy increases the probability of breast cancer
- B. Pregnancy is rarely associated with breast cancer
- C. In this particular series of women with breast cancer, 3.2% were pregnant
- D. A, B and C are all true
- E. None of the above statements is true

13. To determine attack rates for a respiratory disease of unknown origin among people attending a conference, random samples of guests staying at four hotels were surveyed for subsequent illness. Because it was not feasible to survey all guests, random sampling provided the best information because:

- A. It would identify all cases of disease.
- B. It would avoid selection bias.
- C. It would reduce measurement bias.
- D. It would eliminate sampling error.
- E. It would eliminate confounding.

14. A double-blind study of a vaccine is one in which:

- A. Neither the observers or the participants know the nature of the placebo.
- B. Neither the observers or the participants know who received the vaccine and who received the placebo.
- C. The participants in the vaccine group do not know the participants in the control group.
- D. A, B and C are all true.
- E. None of the above statements is true.

15. Controls are needed in a case-control study because:

- A. They may be followed to determine if they have the disease in question.
- B. They increase the sample size so that statistical significance can be achieved.
- C. They provide a comparable estimate of the frequency of exposure in the absence of disease.
- D. They are matched to cases on suspected risk factors.
- E. They are needed to fill the contingency table.

16. The "Iceberg Phenomenon" of disease describes:

- A. The concept of subclinical and undiagnosed cases.
- B. Seasonal variation of infectious diseases.
- C. Disease burden is fully submerged.
- D. The geographic distribution of a disease.
- E. The natural history of disease.

17. The most common mode of transmission for Hepatitis B is:
- A. Fecal-oral.
 - B. Airborne.
 - C. Parenteral.
 - D. Vector-borne.
 - E. Abrasions.
18. The Directly Observed Treatment Shortcourse "(DOTS)" strategy is used in the control of:
- A. Malaria.
 - B. Tuberculosis.
 - C. HIV/AIDS.
 - D. Dengue.
 - E. Malaria.
19. The period between the entry of the pathogen and the onset of symptoms is called:
- A. Prodromal period.
 - B. Period of communicability.
 - C. Incubation period.
 - D. Convalescence.
 - E. Window period.
20. Which of the following is a droplet infection?
- A. Typhoid.
 - B. Tuberculosis.
 - C. Tetanus.
 - D. Cholera.
 - E. All of the above.

21. The primary method for preventing Typhoid is:
- A. Vaccination.
 - B. Vector control.
 - C. Isolation of cases.
 - D. Improved sanitation and safe water supply.
 - E. Clean up campaign.
22. The "Window Period" in HIV infection refers to the time when:
- A. The patient is asymptomatic.
 - B. The virus is dormant.
 - C. Antibodies are not yet detectable.
 - D. The patient is no longer infectious.
 - E. Infectivity rate is low.
23. A disease that is constantly present in a particular geographic area is called:
- A. Epidemic.
 - B. Endemic.
 - C. Pandemic.
 - D. Sporadic.
 - E. All of the above.
24. The key intervention under the National AIDS Control Programme (NACP) for prevention is:
- A. Contact tracing.
 - B. Promotion of condom use and stop the use of reused needles.
 - C. Isolation.
 - D. Mass drug administration.
 - E. Surveillance.

25. The primary level of prevention includes:
- A. Early diagnosis and treatment.
 - B. Disability limitation.
 - C. Health promotion and specific protection.
 - D. Rehabilitation.
 - E. Surveillance and reporting.
26. A mosquito that breeds in clean and stagnant water is:
- A. Anopheles.
 - B. Culex.
 - C. Mansonia.
 - D. Aedes.
 - E. All of the above.
27. The main objective of a "Sanitary Latrines" is to:
- A. Prevent contamination of water, soil, and food.
 - B. Provide comfort.
 - C. Save water.
 - D. Produce manure.
 - E. Secondary prevention.
28. Health behavior can be best defined and describe as:
- A. The psychological factors that impact the individual wellbeing.
 - B. Genetic predispositions only that determine the individual's health outcomes.
 - C. Actions and habits that influence the health dietary choices and exercise routines and health of an individual.
 - D. The medical interventions that directly improve an individual's health status.
 - E. All of the above.

29. Which of the following best describes why public health or community medicine need to understand the importance of health behaviours is?
- A. It helps in genetic research.
 - B. It allows targeted disease and public health prevention strategies.
 - C. It can be used for individual physician practices.
 - D. It supports pharmaceutical industry and drug dispensing.
 - E. Helps behavioural change.
30. Which of the following best describes the role of behaviours in relation to health and diseases?
- A. Unhealthy behaviours have no effect on disease.
 - B. Only genetic factors play a significant role in the development of diseases.
 - C. Diseases progress independently of individual behaviours.
 - D. Behaviour can directly lead to disease and assist in managing existing conditions.
 - E. All of the above.

SECTION B

LONG ANSWER QUESTIONS.

TOTAL – 40 MARKS.

31. A retrospective cohort study was conducted to determine which food was the most likely cause of the outbreak of food poisoning: Food Number of people who ate that food
Number of people who ate the food and got sick

Food	Number of people who ate that food	Number of people who ate the food and got sick
Cold chicken	86	34
Potato salad	54	38
Egg sandwiches	76	40
Fruit pie and cream	32	12
Cheese	48	12

- 31.1 Draw up a table of exposures and outcomes to reflect the data in a 2by x contingency table. 10 Marks.

	Food Poisoning (+)	Food Poisoning (-)	Totals
Cold Chicken	34		86
Potato Salad	38		54
Egg Sandwiches	40		76
Fruit Pie and Cream	12		32
Cheese	12		48
	136		

Calculate the appropriate measure of association for the following:

- 31.2 Cold chicken. 2 Marks
RR =
- 31.3 Potato salad. 2 Marks.
RR =
- 31.4 Egg sandwiches 2 Marks.
RR =
- 31.5 Fruit pie and cream. 2 Marks.
RR =
- 31.6 Cheese. 2 Marks.
RR =

The p-values for the above measures of association were as follows:

Food	p-Value	Confidence Interval
Cold Chicken	0.08	0.61, 1.09
Potato Salad	0.00003	1.38, 2.19
Egg Sandwiches	0.08	0.93, 1.57
Fruit Pie and Cream	0.159	0.50, 1.27
Cheese	0.0007	0.304, 0.835

- 31.7 Which food is likely to have been associated with the outbreak?
Justify your answer with reference to the p-value and Confidence interval.
2 Marks

- 32 An orthopaedic surgeon was interested in the best way to manage patients with hip fractures. He read a paper that presented the following data from a series of 204 patients:

Number of:	Surgical treatment	Conservative management	Total
Patients	139	65	204
Survivors	103	34	137
Deaths	36	31	67
Percent mortality	26.5%	47.7%	32.9%

A statistical test comparing the mortality rates in the two groups gave $p < 0.01$. Which of the following statements is/are true and why?

Provide an explanation in support of your answers as “True or False”:

- 32.1 The mortality rate was significantly lower in the group treated with surgery. 1 Mark.
- 32.2 The much larger number of patients in the group treated with surgery distorts the results. 1 Mark
- 32.3 We cannot draw any conclusions from these data because it was not a randomized trial. 1 Mark
- 32.4 We cannot draw any conclusions from these data because there was no control group. 1 Mark
- 32.5 Patients managed conservatively may be older and sicker than those selected for surgery. 1 Mark
- 32.6 Discuss in brief what is Incidence vs. Prevalence: 3 Marks
33. Outline the chain of infection for Dengue. 4 Marks
34. Discuss in brief three (3) key elements in the public health approach to the control of dengue in the Pacific. 6 Marks

SECTION C.

ANSWER ALL QUESTIONS.

TOTAL – 30 MARKS.

35. The heartbeat of the delivery of effective health is a functioning health system.

35.1 Describe the organizational structure of health services in your country from the district to national level.

6 Marks

35.2 What are the roles and responsibilities of a Health Centre (HC) in regards to primordial, primary and secondary prevention?

9 Marks.

36. Surveillance is an important tool in Disease Control and Prevention.

36.1 Discuss in brief what Surveillance is.

3 Marks

36.2 Briefly discuss the role of Passive, Active and Syndromic surveillance and its importance in Disease Control and Prevention.

12 Marks

