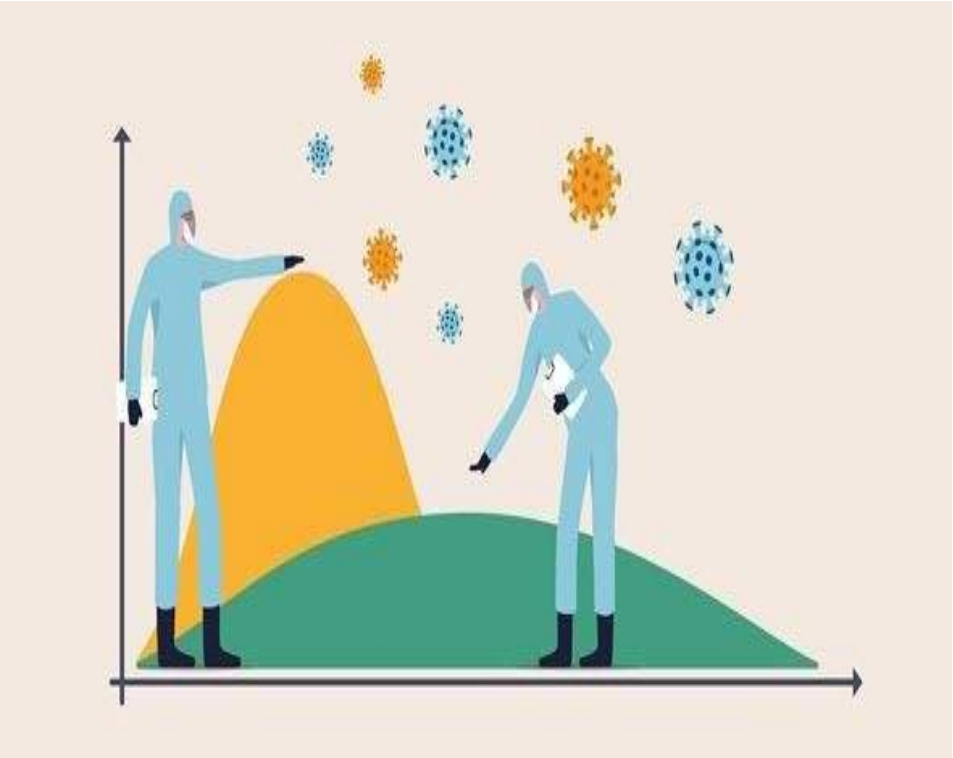
Student study guide

Investigation and Discovery/Scholarly Project
Epidemiology and data management



Block IDP-337

2024-2025

Prepared by

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Under supervision of

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Block specification

A-Basic Information:

Program on which the course is given: Bachelor of Medicine and Surgery (M.B., B.Ch.).

Elements (major or minor) of the program: (undergraduate):

Departments offering the course: (Education development center)

Academic year/level: 3rd year, 5th semester. Date of specification approval: 2022/2023

- Title: Investigation and Discovery/Scholarly Project Epidemiology and data management
- Code: IDP -337
- Credit points: 1.5
- Lecture: 10 hours
- Practical: 5 hours
- Student learning activities: hours {self-directed learning (SDL), group discussion & quiz} 15hours
- Total: 30 hours

Block Map of: Principles of studying medicine

Block	Points	days/week	Learning Activities		
			Contact hours/points	Formative assessment/feedback	Assignment
Block IDP-337	1.5	1.5 hours/week	15 hours/ 0.5 point	0.5 point	0.5 point

B- Professional Information

1- Block aims

Θ Overall aim of the block:

The aim of this block is to enable the students to acquire the basics of epidemiological methods necessary for reasoning and management of common health problems. To acquire the basics of research process.

2-Intended Learning Outcomes

At the end of this block, the students will be able to:

A- Knowledge and understanding:

A1- Define the epidemiology and epidemiological methods.

A2- Recognize research process.

A3- Describe principles and types of study design

A4-Identify Morbidity (incidence, prevalence), Birth (fertility), and Mortality.

A5- Describe different measures of risk

A6- Identify Bias, confounding, effect modification, and latent period

A7- Recognize the evaluation of diagnostic tests

B) Intellectual skills:

B1-Interpret given data related to common health problems using epidemiological methods.

B2- Select a suitable epidemiological study.

B3- Calculate and interpret sensitivity, specificity, and predictive values of a screening test

C) Psychomotor Skills:

C1-Compose a research question.

C2- Use different types of study design.

C3- Identify measures of disease risk , incidence, and prevalence C4- Identify Bias in epidemiological study

C5- Apply sensitivity, specificity, and predictive values of a screening test

D) General and transferable skills:

D1- Integrate with his colleagues, tutors, and teaching staff to accomplish group work duties effectively and solve issuing problems.

D2- Practice evaluation of their own performance.

3-NARS Competencies covered by the block

1.1 Take and record a structured, patient centered history.

1.2 Adopt an empathic and holistic approach to the patients and their problems.

1.3 Assess the mental state of the patient.

1.4 Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive.

1.5 Prioritize issues to be addressed in a patient encounter.

1.6 Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors.

1.7 Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice.

1.8 Apply knowledge of the clinical and biomedical sciences relevant to the clinical problem at hand.

1.9 Retrieve, analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM).

1.10 Integrate the results of history, physical examination and laboratory test findings into a meaningful diagnostic formulation.

2.1 Identify the basic determinants of health and principles of health improvement. ***ck IDP-337***

2.2 Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing.

2.3 Discuss the role of nutrition and physical activity in health.

2.4 Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases.
2.5 Describe the principles of disease prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity.

2.6 Recognize the epidemiology of common diseases within his/her community, and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases.

3.1 Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect.

3.2 Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate.

3.3 Respect the different cultural beliefs and values in the community they serve.

3.4 Treat all patients equally, and avoid stigmatizing any category regardless of their social, cultural or ethnic backgrounds, or their disabilities.

3.5 Ensure confidentiality and privacy of patients' information.

4.5 Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of illness/disease and explain the ways in which they operate on the body (pathogenesis).

4.6 Describe altered structure and function of the body and its major organ systems that are seen in various diseases and conditions.

5.2Respect colleagues and other health care professionals and work cooperatively with them, negotiating overlapping and shared responsibilities and engaging in shared decision-making for effective patient management.
5.6 Evaluate his / her work and that of others using constructive feedback.

4- Course Content

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Topics to be Covered			
	List of Topics	**# Weeks**	**Contact Hours**
	A. Lectures		
1	Introduction to epidemiology-Scope of Epidemiology – Research process. A1, A2, B1	1st	2 hours
2	Morbidity, incidence, and prevalence Birth, fertility, and mortality. A4, B1	2nd	2 hours
3	Epidemiological studies. Measures of risk A3, A5, B1,B2	3rd	2 hours
4	Bias, confounding, effect modification, and latent period. A6, B1	4th	2 hours
5	Evaluation of diagnostic tests . A7, B3	5th	2 hours
	TOTAL		10
	B. Practical Sessions (TBL)		
1	Introduction to epidemiology-Scope of Epidemiology – Research process. C1	1st	1 hour
2	Morbidity, incidence, and prevalence Birth, fertility, and mortality. C3	2nd	1 hour
3	Epidemiological studies. C2 Measures of risk. C3	3rd	1 hour
4	Bias, confounding, effect modification, and latent period. C4	4th	
5	Evaluation of diagnostic tests. C5	5th	
	TOTAL		5 hours
	Self-Directed Learning (SDL) {Portfolio-based}		
1	Introduction to epidemiology-Scope of Epidemiology – Research process. C1, D1, D2	4th	
2	Evaluation of diagnostic tests. D1, D2	5h	

Assignments/ learning activities:

#	Title of Activities	Week number	% of points
1	**SDL** 1	4th	
2	**SDL** 2	5th	

Formative assessment and Assignments

number	Type	week number
1	**Quiz 1**	3rd
2	**Quiz 2**	5th
3	**Quiz 3**	6th

Course components (total contact hours and credits per semester):							
	Lecture	**Practical**	***SDL**	**Tutorial (Discussion)**	**Seminars**	**Quiz**	**Total**
Contact Hours	**10**	**5**		**0**	**0**	**0**	**15**
Credit							

***Not included in contact hours.**

4- Teaching and learning Methods

1- Lectures for knowledge and intellectual skill outcomes.

2- Practical sessions to gain practical skills.

3- Self-directed learning (SDL) for the topics studied in lectures or related topics, including E learning (questions of different topics available online for student's assessments) and consulting professors for gathering of information.

5- Student Assessment

Assessment task	Proportion of Total Assessment	Marks
End of the block examination (assignments)	**30%**	**7**
Portfolio	**10%**	**2.5**
Final written Exams (25% short answer questions and Modified essay questions, 75%MCQs)	**60%**	**13**
		22.5 M

Student Assessment Plan:

1- End of block: assignments :30% of total.
2- Evaluation of portfolio: 10%.
3- Final written exam: 60%.

5- List of references (Recommended books)

1. Power point handout
2. **Essential books**
   - AMBOSS knowledge cards /USMLE step1
3. **Recommended books**
   - Kaplan step 1 2020

6- Facilities required for teaching and learning

1- Data show for power point presentations.
2- Computer club in the Faculty with net access.
3- Libraries with available textbooks for gathering of information.

Blueprint								
List of Topics		**ILOS**	**Contact Hours**	**Weight**	**End of the block**	**Portofino/ assignments**	**Final Exam**	
Lectures					**Assignments**		**MCQ %75**	**Written %25**
1	Introduction to epidemiology-Scope of Epidemiology – Research process.	A1, A2, B1. B2	2 hours	20%	1	0.5	2	X
2	Morbidity, incidence, and prevalence Birth, fertility, and mortality	A4, B1	2 hours	20%	1.5	0.5	2	X
3	Epidemiological studies. Measures of risk.	A3, A5, B1, B2	2 hours	20%	1.5	0.5	2	1
4	Bias, confounding, effect modification, and latent period.	A6, B1	2 hours	20%	1.5	0.5	2	1
5	Evaluation of diagnostic tests.	A7, B3	2 hours	20%	1.5	0.5	2	1
	Total		**10**	**100%**	**7 M 30%**	**2.5 10%**	**10M**	**3M**
Practical								
1	Introduction to epidemiology-Scope of Epidemiology – Research process.	C1	1 hour			X		X
2	Morbidity, incidence, and prevalence Birth, fertility, and mortality .	C3	1 hour			X		X
3	Epidemiological studies. Measures of risk.	C2, C3	1 hour			X		X
	Bias, confounding, effect modification, and latent period.	C4	1 hour					X
	Evaluation of diagnostic tests.	C5	1 hour					X
	Total		5 hours			X		
SDL								
1	Introduction to epidemiology-Scope of Epidemiology – Research process.	D1, D2				X		

2	Epidemiological studies.	D1, D2				X		

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100% Final Exam 25%= 5.5 marks (short answer questions and Modified essay questions) 75%= 17 marks MCQs.

1.5 points = 22.5 marks for final exam second round

7- Topic outlines

Lecture (1)

Introduction to epidemiology-Scope of Epidemiology – Research process.

By the end of the lecture the student will be able to:

- Define the epidemiology and Scope of epidemiological
- Recognize population pyramid
- Summarize process of research
- Formulating research question
- Search engines used in a literature review:

Content of the lecture

 Introduction to epidemiology-
 Scope of Epidemiology
Research process.

Sources

✞ Power point handout

Lecture (2)

Morbidity, incidence, and prevalence Birth, fertility, and mortality

By the end of the lecture the student will be able to:

- Identify morbidity, incidence, and prevalence
- Differentiate between incidence and prevalence
- Describe Birth, fertility, and mortality

Content of the lecture

 Morbidity, incidence, and prevalence
 Birth, fertility, and mortality

Sources

✞ Power point handout

Lecture (3)

Epidemiological studies.

Measures of risk.

By the end of the lecture the student will be able to:

- Identify the principles and types of study design
- Select suitable study design in medical field
- Describe measures of risk

Content of the lecture

- Principles of study design
- Types of study design in medical field
- Measures of risk

Sources

Power point handout

Lecture (4)

Bias, confounding, effect modification, and latent period.

By the end of the lecture the student will be able to:

- Identify bias, confounding, effect modification, and latent period

Content of the lecture

- Bias
- Confounding
- Effect modification
- Latent period

Sources

- Power point handout

Lecture (5)

Evaluation of diagnostic tests

By the end of the lecture the student will be able to:

- Recognize evaluation of diagnostic tests
- Calculate and interpret sensitivity, specificity, and predictive values of a screening test

Content of the lecture
Sensitivity Specificity predictive values Verifying the presence or absence of a disease Receiving operating characteristic curve (ROC curve) Two-by-two table Random error, precision, and validity
Sources Power point handout

9- Block timetable

All sessions are held in the big lecture halls

Day/Tim	1st week Thursday	2nd week Thursday	3rd week Thursday	4th week Thursday	5th week Thursday
Time		**9-11**	**9-11**	**8-11**	**9-12**
		Group	**Group**	**Group**	**Group**
		1,2 / 3,4,5	**11,12 / 13,14,15**	**6,7 / 8,9,10**	**11,12 / 13,14,15**
		Practical 1,2	**Practical 1,2**	**Practical 3,4,5**	**Practical 3,4,5**
Time		**11-1**		**11-2**	
		Group		**Group**	
		6,7 / 8,9,10		**1,2 / 3,4,5**	
		Practical 1,2		**Practical 3,4,5**	
4-6	**Online lecture**	**Online lecture**	**Online lecture**	**Online lecture**	**Online lecture**

10- Declarations

Block Contributor	Name	Signature	Date
Principle Coordinator:	Prof. Hoda Makhlouf Ass. Prof. Manal M M Darwish		**19/9/2020**

Assistant coordinator:	Ass. Prof. Taghreed Abdul-Aziz		**19/9/2020**