HANDWRITTEN NOTES

DAMS

PREVENTIVE & SOCIAL MEDICINE

CRISP, CONCISE, CONCEPTUAL

Integrated Edition

Studentfirst @DAMS

DAMS Publications

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HOW TO MAKE BEST USE OF NOTES?

A Message by Mentor Duo Specially for you,

- *Read the notes thoroughly, they are absolutely concise, crisp & conceptual and hence it is best advised not to add a lot of extra information to them as that will dilute the quality.*
- *Images have been provided alongside to aid in better understanding and also help you solve image-based questions, these images have been specially picked by the faculty so have a high probability of being asked in exams.*
- *Notes are handwritten in a way to help make them easier to retain, a lot of tables, graphs and algorithms have been used to simplify the learning.*
- *While reading notes try and use the CFAQ technique —*
  - *A. Use the C to denote concept part in the notes and ensure you are clear with this part in the first go if not then it's advisable to listen to this part of the video from your course.*
  - *B. Use the F To denotes facts in your notes, it is okay if you can't remember them in first go but will need repeat reading. But these facts are important for exams as they could be integrated to clinical questions.*
  - *C. Use A to denote applied parts, this is how concepts and facts are asked indirectly in exams. This will also help you develop MCQ solving skill.*
  - *D. Use Q to denote areas where faculty has said it's a direct question or a PYQ or a potential question.*
- *This technique will help you summarize your notes In way that your second reading will become easy and faster.*
- *Active space has been provided with these notes to make your own annotations alongside and this will help you maintain one single notebook for one subject.*
- *Try and solve MCQs with every topic from DQB. Your goal should be to start with at least 30 MCQs every day and then increase to at least 50 MCQs every day. Also, when you do a topic wrong write it alongside the notes that this topic needs to be read again but mark only the specific area that you have done wrong not the whole topic.*
- *After the topic is covered then in the active space try and summarize the topic in the form of mind map. This will help in active recall and make your revision easier.*

Best Wishes & Happy Learning!!!!!

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DAMS

WORKBOOK

PSM

2025- 26

EDITION

(UPDATED TILL INICET MAY 2025)

NAME	
COLLEGE OF MBBS	
YEAR OF MEDICAL SCHOOL	
DREAM PG COLLEGE	
DREAM BRANCH	
PHONE NUMBER	
EMAIL ID	
ADDRESS	

RULES FOR THE CLASS

1. **The class is absolutely non-formal so you are free to:**
   a. Sit the way you want
   b. Go to washroom whenever you want except for the time when I am explaining you
   c. Eat in the class
   d. Mobile calls (max 45 seconds)
2. **Feel free to ask your doubts**
   a. Your doubts are the question of the coming year
   b. Please don't wait for the class break to ask doubts
   c. Please feel free to raise your hand and ask
   d. If you feel hesitant; then just message or what's app at ***9968859773***; I will answer them keeping your identity anonymous
3. **PSM is a paradoxical subject**

	MBBS	PG Exams
Reference Textbook	Park 28th edition	No reference book as there are many recent updates
Important Chapter's	Nutrition, Environment, Health program (theoretical)	Epidemiology, Statistics, Screening, Health Program (recent), Infectious disease, Vaccines
Basic Study Framework	Theory, Mug up, Boring	**75% concepts**, 15% one liners and 10% mug up
Importance	Easily pass in theory and practical's	***10% share in any exams***

INPUT OUTPUT RATIOS

	Input (No. of pages of book)	Output: Number of Q in Exam	Output: Number of Correct Q which can scored
Medicine	8000	25	16
Surgery	5000	25	18
OBGY	3000	25	20
PSM	1000	25 (20 core + 5 overlap)	22

Subject with BEST Input Output Ratio: _____

4. **Timings of the Class**: 9 am to 7 pm
   (May extend for 60 to 90 minutes either way based on discussions we have)
5. **The subject is divided into 5 parts:**

Part	Importance	No. of Chapter	Chapter Name	Number of Q in NEET	Number of Q in INICET
I	Conceptual	3	1. Screening 2. Statistics 3. Epidemiology	5- 7	7-10
II	Important One Liners	9	1. Health & Dis. 2. NCD 3. Demography 4. Obs and paeds 5. Health sys. in India 6. Nutrition 7. Environment 8. Hospital waste 9. Planning & Mx	5- 7	3-4
III	Unimportant One Liners	11	1. Disaster 2. International health 3. Sociology 4. Occupational health 5. Communication	1-2	1
IV	Health Programs	1	Health programs	5	2
V	Infectious Diseases	1	Infectious Disease	5	3
Total		25		20-25	15-20

IMPORTANT TOPICS IN PSM

Chapter Name	No. of Topics	Important Topics
2. Health and Disease	4	Socio Developmental Indicators (5) - GHI/ MDPI/ PQLI/ HDI/ HPI
		Disability Indicators (4) - DFLE/ DALY/ QALY/ HALE
		Disease leads to IDH (Impairment/ Disability/ Handicap)
		Prevention
3. Epidemiology	6	Types of bias including third factor
		Morbidity indicators
		Mortality indicators
		Study designs
		Doll and Hill criteria
		Systematic review and Meta analysis
4. Screening	5	2 by 2 table
		Interpretations (6)
		Time in screening
		Principles of screening
		ROC (INICET)
5. Infectious disease	3	Basic concepts - Types of epidemics/ elimination/ time period/ quarantine/ isolation/ SAR
		Diseases - Measles/ Diphtheria/ Rabies/ Tetanus
		Vaccines - NIS/ Unimmunised child/ VVM/ Cold chain/ Open vial policy/ Guidelines in pregnancy
6. NCD	2	Obesity
		Cancers
7. Health Programs	8	RMNCHA
		Infectious disease programs - TB/ HIV/ NVBDCP/ Polio/ Leprosy
		Nutrition program - PM POSHAN Shakti Nirman
		NCD program – NPCDCS
		Ayushmann Bharat
		IDSP- IHIP
		ESI
		Ujala/ Ujjwala/ Ujjawala
8. Demography and Family Planning	6	Fertility Indicators
		Pearl Index
		Couple Protection Rate
		Demographic cycle
		Population Pyramid
		Sources of Data - SRS/ Census/ CRS/ NFHS
		Contraception (OBGY)
9. Preventive Obstetrics and paediatrics	5	ANC visits/ ANC calculation
		dT in pregnancy
		MMR
		Paediatric mortality (calculation/ causes)
		Growth charts/ Malnutrition
	3	Health system of India

10. Health Care of Community		Health care committees
		Primary Health care concept (Alma Aty)
11. Nutrition	3	RDA
		Food adulteration
		Iodine and Fluorine
		Vitamins (Biochemistry)
12. Sociology	2	Levels of learning
		Socio economic scales
13.Tribal Health	0	
14.SDGs	0	
15. Environment	3	Water: Chlorination/ Water contamination
		Air: Kata thermometer/ Air pollution
		Entomology: Vectors and disease/ Insecticides
16.BMW	2	Colour coding
		Blood/ mercury Spills
17.Disaster	3	Triage
		Vaccination and Disaster
		Disaster cycle
18.Occupational Health	0	Occupational Cancers (Patho)
		Pneumoconiosis (Patho)
		Lead poisoning (FMT)
19.Mental Health	0	
20.Genetics	0	
21.Biostatistics	10	Measure of central tendency (Mean/ Median/ Mode)
		Measure of dispersion (SD/SE/COV/ Z score)
		Distribution of data (Normal/ Non-Normal)
		Variable and Scales of Measurement
		Graphical Representation of data
		Scatter diagram (INICET)
		Sample size (INICET)
		Sampling
		Confidence (INICET)
		Statistical Tests
		Hypothesis testing (INICET)
22.Communication	1	Types
23.Planning & Management	3	Definitions (Target/ Objective/ Goal/ Mission/ Monitoring/ Evaluation/ Surveillance)
		Planning cycle
		Quantitative methods of management
24.Essential & Counterfeit Medicines	0	
25.International Health	1	UNICEF – GOBIFFF
Total	70	

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Let the

Class

Begin

PART I

CONCEPTUAL PART

Chapter 4: SCREENING

Chapter 21: STATISTICS

Chapter 3: EPIDEMIOLOGY

CHAPTER 4

SCREENING OF DISEASE

TOPIC 1 – TWO BY TWO TABLE

	Column1	Column2
ROW1		
ROW2		

2 columns * 2 rows

Degree of Freedom (df):

Formulae: (Column -1)x (ROW-1)

(NEET Q)

Example: 9×10 table => (9-1) X(10-1) =72

INICET: A study is done where heart break of Ranveer with Deepu in Chai with Karn has a degree of freedom = 1; which table is it referring to?

Answer: 2X2 table ——> (C -1) X(R -1)
= (2-1) X(2-1)
= 1 (degree of freedom)

What is Degree of Freedom? (NOT an MCQ)

Number of factors on which a VARIABLE depends.

Example: My height depends on
1. My parents height
2. My exercise
3. My diet

Screening of Disease

		Gold standard		
		+	-	Total
Screening test	+	TP	FP	
	-	FN	TN	

1	TP	Positive with Gold Standard and Positive with Screening Test
4	TN	Negative with gold standard and negative with screening test
2	FP	Negative with Gold Standard and Positive with Screening Test
3	FN	Positive with gold standard and negative with screening test

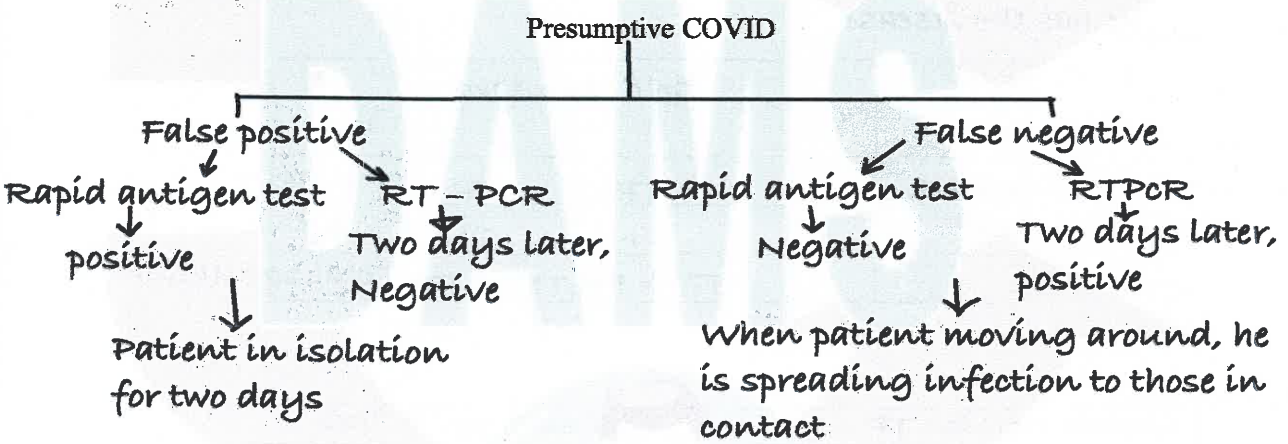
Which is more dangerous?

FP or FN

WHY? FN = actually has the disease

(INI- CET2020)

Clinical Scenario:



Sensitivity (Sn)	Specificity (Sp)
Have disease	Don't have disease
Probability	
Positive Predictive Value (PPV)	NPV
Have disease	Don't have disease

Sn: Ability of a test to detect a diseased person

PPV: If a person is found positive with a test, what is the probability he has the disease

		Gold standard		
		+	-	Total
Screening test	+	TP	FP	TP + FP
	-	FN	TN	TN + FN
		TP + FN	TN + FP	Total population

Sensitivity (Sn) $= \frac{TP}{TP + FN}$	**Specificity (Sp)** $= \frac{TN}{TN + FP}$
PPV $= \frac{TP}{TP + FP}$	**NPV** $= \frac{TN}{TN + FN}$

Likelihood Ratios (LR):

LR + $= \frac{\text{Sensitivity}}{1 - \text{specificity}}$	**LR -** $= \frac{1 - \text{sensitivity}}{\text{Specificity}}$

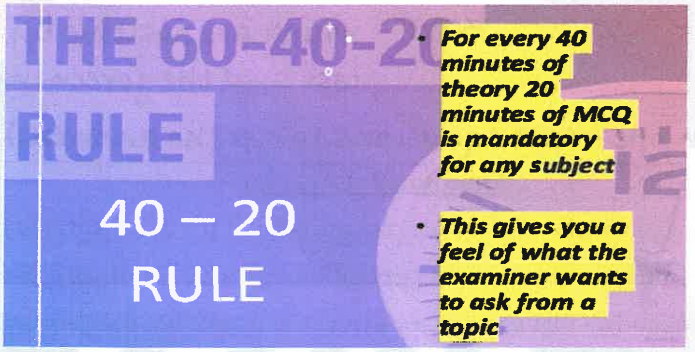
Baye's Theorem:

PPV $= \frac{\text{sensitivity} \times \text{prevalence}}{\text{Sensitivity} \times \text{prevalence} + (1 - \text{specificity})(1 - \text{prevalence})}$

NPV (homework)

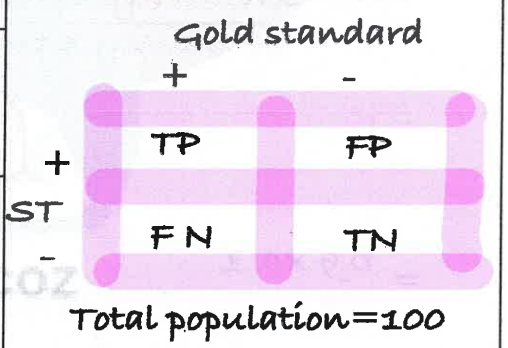
$$\frac{\text{Specificity} \times (1 - \text{prevalence})}{\text{Specificity} \times (1 - \text{prevalence}) + (1 - \text{sensitivity}) \times \text{prevalence}}$$

PV is called DIAGNOSTIC POWER of TEST



Practical Approach to Q on 2 by 2 table:

No.	Step
1	Draw the 2 by 2 table and label it properly
2	• Write the total population. • If not given, then we take most commonly as 100.
3	We fill the COLUMN "1" total: a. Those positive with gold standard b. Those marked as disease c. Counted as prevalence
4	Fill the 4 cells and apply the given formula.



Let's Practice

Question 1: Level 1

In a test of 150 people for HIV, Western blot found that 50 people are suffering from HIV & 100 were not suffering from HIV. Out of this 50, 30 had positive results with ICT kit & only 70 were found to be negative as per the kit from the 100 labelled as negative from the western blot. What is the sensitivity, specificity, PPV & NPV?

Answer:

	Gold standard	
Screening test	30	30
	20	70

The important point in this question was that ICT kit is a screening test and western blot is gold standard. True positive values means patients which are positive by the gold standard test and the screening test.

(Put the values in the above equations to get the answers)

Question 2: Level 2

A diagnostic test for a particular disease has a sensitivity of 0.9 & a specificity of 0.9. A single test is applied to each subject in the population in which the disease prevalence is 10%. What is the probability that a person positive to this test, has the disease?

Answer:

using bays theorem,

$$PPV = \frac{\text{sensitivity} \times \text{prevalence}}{\text{sensitivity} \times \text{prevalence} + (1-\text{specificity})(1-\text{prevalence})}$$

(Please note, convert sensitivity and specificity to percentage or convert prevalence to decimals, and then put the values in the equation.)

$$= \frac{0.9 \times 0.1}{0.9 \times 0.1 + (1-0.9)(1-0.1)}$$

= 50% or 0.5 or 1/2 (answer)

Question 3: Level 3 (AIIMS May 2016)

		ICT Kit		
		Positive	Negative	Total
MP slide	Positive	30	30	60
	Negative	20	70	90
	Total	50	100	150

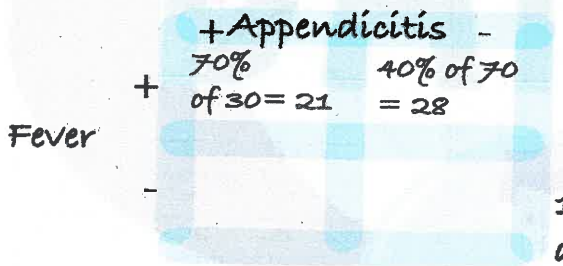
Calculate the Sn, Sp, PPV, NPV

Answer: The key point in this question was that the gold standard test and screening test positions were interchanged. For ease of solving, flip the readings and proceed as in the above question.

Question 4: Level 2 (Old AIIMS Question)

In a group of patients presenting to a hospital emergency with abdominal pain, 30% of patients have acute appendicitis. 70% of patients with appendicitis have a temperature greater than 37.5 C & 40% of patients without appendicitis have a temperature greater than 37.5 C. Calculate PPV.

Answer:



$PPV = \frac{21}{21+28} = \frac{3}{7}$ (answer)

INICET: Comparing Screening Test with Gold Standard: **Bland Altmann Plot** is used

TOPIC 2: INTERPRETATION OF SCREENING TEST RESULTS

1. . Sensitivity $\propto \frac{1}{\text{Specificity}}$ PPV $\propto \frac{1}{\text{NPV}}$

2. Predictive value:
   - Diagnostic power of a test.
   - depends on:

   1) prevalence (Single Best answer)
   2) sensitivity
   3) specificity

Predictive value does not depend on incidence.

3. .

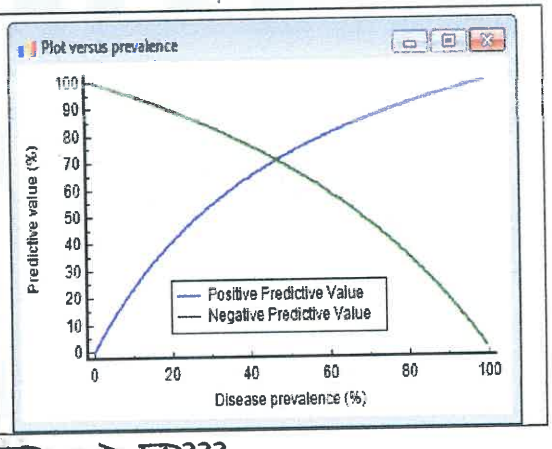
OLD NAME	Pretest/ Prior Probability	Post test Probability
NEW NAME	Prevalence	Predictive value

4. .

Prevalence↑ PPV ↑ NPV↓

Prevalence↓ PPV ↓ NPV ↑

Specificity and sensitivity are constant because it is an intrinsic property of a test.



5. INICET Q. ↑sensitivity ——> ↑TP ——> FP???

		Gold standard		
		+	-	Total
Screening test	+	TP	FP	
	-	FN	TN	
		TP + FN	TN + FP	