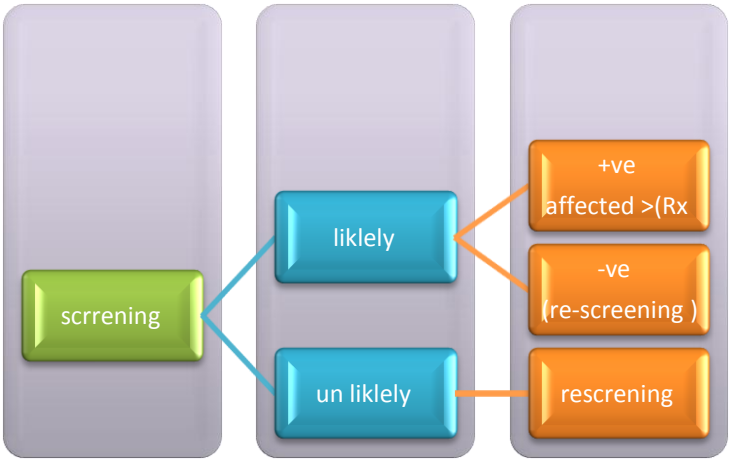
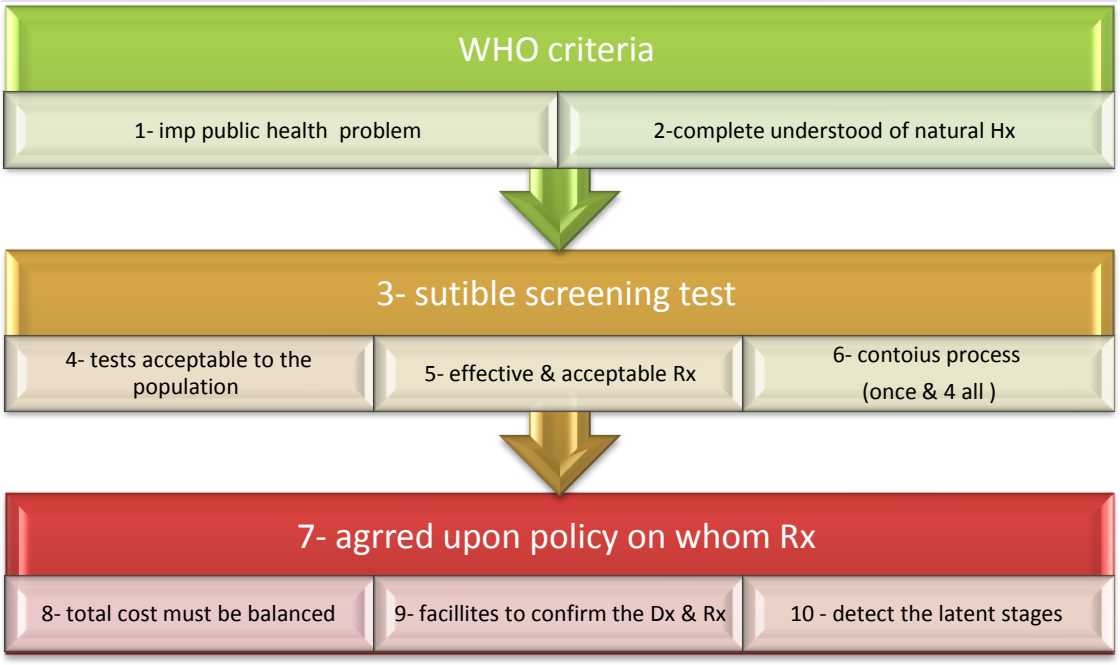
Screening :

➢**Detection of the diseases in apparently healthy ppl →**
so it's not formally diagnose illness
➢**it's type of control→ so it's not primary prevention**
➢**it deals with sub clinical cases (preclinical cases)(asymptomatic pts)**



Comparison b/w screening & diagnostic tests

Screening	Diagnostic
In asymptomatic pt	In symptomatic pt (signs + symptoms)
Group of individuals	Only single person
Based on WHO criteria	Based on # of signs , symptoms & Ix
Not conclusive	Conclusive & final
Less accurate	More accurate
Less expensive	More expensive
Not basis for Rx	Basis for Rx



Characteristics of screening :

Validity (sensitivity . specfity) حساس
Reliability (repeatability ,precision) دقيق
Yield (predictive value of the test تخمين

Screening test	Gold standard (Dx test)		Total
	Positive	Negative	
Positive	TP	FP	PS
Negatives	FN	TN	NS
Total	TD	TH	GT

	+	-
+	a	b
-	c	d

TP= total positive = a
FP= false positive= b
FN= false negative=c
TN =total negative= d
TD= total disease
TH= total health
PS = positive screening
NS = negative screening
Now …

To calculate the validity values → uses the vertical columns

How ??

The **1st column** to measure the **sensitivity** as the following**: a/a+c**
Cuz the sensitivity describes the total disease (TD) so we must use the (TP)= a

The **2nd column** to measure the **specfity** as the following : **d/b+d**
Cuz the specfity describes the total health (TH) so we must use the (TN)=d

Also ..
Since the **FP= b** →the false positive rate = **b/b+d**
FN=c →the false negative rate = **c/a+c**

& the prevalence = (a+c)/(a+b+c+d) = (TD/GT): باختصار

To calculate the predictive values →use the horizontal rows

PV+ = a/a+b
PV- = c/c+d

هده هي الحسابات ببساطة .. :

☺

Now open the last pg ..

Answer the question ..

The correct answers will be :

Sensitivity = 18/20 = 0,9
Specfity = 931/980=0,95
PV+ = 18/67=0,27
PV - = 2/933= $2.1x10^{-3}$
False positive rate = 49/980 = 0,05
False negative rate = 2/20 = 0,1
Disease prevalence = 20/1000 = 0,02

That all ..
Hope I hv been help full
Yalla .. d3watik