Diagnosis

1. Is this evidence about diagnosis valid?
    a. Was there an independent, blind comparison with a reference ("gold") standard of diagnosis?
    b. Was the diagnostic test evaluated in an appropriate spectrum of patients (like those in whom it would be used in practice)?
    c. Was the reference standard applied regardless of the diagnostic test results?
    d. Was the cluster of tests validated in a second, independent group of patients?
2. Is this valid evidence about diagnosis important?

		Target Disorder		Totals
		Present	Absent	
Diagnostic Test Result	Positive	a	b	a+b
	Negative	c	d	c+d
Totals		a+c	b+d	a+b+c+d

    a. Sensitivity = a/(a+c)
    b. Specificity = d/(d+c)
    c. LR+ = sensitivity/(1-specificity)
    d. LR- = (1-sensitivity)/specificity
    e. PPV = a/(a+b)
    f. NPV = d/(c+d)
    g. Prevalence = (a+c)/(a+b+c+d)
    h. Study Pre-test odds = prevalence/(1-prevalence)
    i. Post-test odds = pre-test odds * LR
    j. Post-test probability = post-test odds/(post-test odds + 1)
3. Can we apply this valid, important evidence about a diagnostic test in caring for our patient?

a. Is the diagnostic test available, affordable, accurate, and precise in our setting?
b. Can we generate a clinically sensible estimate of our patient's pre-test probability?
    i. From personal experience, prevalence statistics, practice databases, or primary studies?
    ii. Are the study patients similar to our own?
    iii. Is it unlikely that the disease possibilities or probabilities have changed since this evidence was gathered?
c. Will the resulting post-test probabilities affect our management and help our patient?
    i. Could it move us across a test-treatment threshold?
    ii. Would our patient be a willing partner in carrying it out?
    iii. Would the consequences of the test help our patient reach his or her goals in all this?

Pre-Test Probability:

1. Is this evidence about pre-test probability valid?
    a. Did the study patients represent the full spectrum of those who present with this clinical problem?
    b. Were the criteria for each final diagnosis explicit and credible?
    c. Was the diagnostic work-up comprehensive and consistently applied?
    d. For initially undiagnosed patients, was follow-up sufficiently long and complete?
2. Is this valid evidence about pre-test probability important?
    a. What were the diagnoses and their probabilities?
    b. How precise were these estimates of disease probability?

Screening and Case Finding

1. Guides for deciding whether a screening or case-finding maneuver does more good than harm
    a. Is there RCT evidence that early diagnosis really leads to improved survival, quality of life, or both?
    b. Are the early-diagnosed patients willing partners in the treatment strategy?
    c. How do benefits and harms compare in different people and with different screening strategies?
    d. Do the frequency and severity of the target disorder warrant the degree of effort and expenditure?