

CLINICAL DECISION RULE II

San Francisco Syncope Rule

Objectives:

To learn to locate and assess the clinical usefulness of a published clinical prediction or decision rules and to appropriately apply them to the care of individual patients as well as to the development of clinical policies.

This includes:

1. Determining the proper ranking in an ascending hierarchy of evidence for a particular clinical prediction or decision rule.
2. Assessing the rule's applicability to and likely impact on your clinical practice.

Assignment:

1. Read the attached scenario.
2. Devise a PICO question and electronic search engine strategy to locate applicable clinical evidence.
3. Read the attached guidelines for reading articles pertaining to clinical prediction or decision rules.
4. Use the attached worksheet as a guide to your assessment.

In approaching this exercise, it will be useful to keep in mind that the development of a prediction or decision instrument generally involves multiple studies. Study designs pertaining to issues of diagnosis, prognosis and therapy are commonly encountered, depending on the nature of the instrument, the phase of development and the inclinations of the investigators. The learner will find knowledge of the therapy, diagnosis and prognosis modules useful and prerequisite to comfortable completion of this exercise. We suggest that, after reading the scenario, you read the Users' Guides chapter and then examine the design of the Critical Review Form in relationship to the chapter before proceeding to the critical appraisal of the studies.

Clinical Scenario:

Ms. Jones is a 65 year old African American female with a history of HTN and type II DM who presents to the E.D. after a syncopal event which occurred 30 minutes prior to arrival. The event was witnessed by the patient's husband who states she had collapsed soon after getting up from her recliner to go to the restroom. He notes that she fell against the wall and landed on her buttocks. She did not hit her head and had no seizure activity. The patient regained consciousness within seconds returning to a normal mental status. The patient does not remember the event and denies any precipitating symptoms, particularly no chest pain, shortness of breath, palpitations, headache, dizziness or vision changes. She denies any recent illness and her ROS is negative. She denies any hx of CAD, CHF or CVA/TIA. She is on metoprolol and glyburide.

On exam the patient is awake, alert and oriented x 3. She is afebrile with a BP of 145/89, HR 68, RR 14 and a SaO₂ of 98% on room air. Her d-stick is 122. The remainder of her physical exam is normal. Her ECG and labs are unremarkable including a Hct of 38%, a negative D-dimer, and initial troponin.

Using the San Francisco Syncope Rule (SFSR) you decide that the patient is at a low risk for serious outcome in the next 7 days and decide to discharge the patient with primary care physician follow-up within the next week. About an hour later your medicine colleague comes down to the E.D. to inquire about the patient who turns out to be his neighbor. When told she was discharged from the E.D. he asks you about the SFSR stating “Have any studies validated that this rule is safe and effective to use in our population?” Knowing that any questions raised by your medicine colleagues are solely for improvement in patient care, you turn to the medical literature.

PICO Question:

Population: ED Syncope patients

Intervention: Use of risk stratification tools to identify high-risk syncope patients

Comparison: Unaided clinical intuition (physician gestalt)

Outcome: Serious adverse outcome within 7 days (death, MI, PE, arrhythmia, CVA, significant hemorrhage, or any condition causing a return ED visit with hospitalization for a related event.

Using the combined search terms of “syncope AND Emergency Department” you conduct a PUBMED query which yields 777 hits. Scrolling down the list the article by Adrienne Birnbaum, MD – *Failure to Validate the San Francisco Syncope Rule in an Independent Emergency Department Population* catches your eye. Clicking on “related articles” then yields another 365 hits. In order to narrow the search, a second search is conducted using “San Francisco Syncope Rule” which yields 37 hits, of which four very relevant articles are found including the one above.

Attachments:

1. Guyatt G, Rennie D, Meade MO, Cook DJ Editors, The Users' Guides to the Medical Literature, A Manual for Evidence-Based Clinical Practice. 3rd Edition. McGraw-Hill 2015, Chapter 19.4.
2. Sun, BC; Mangione, CM; Merchant G; et. al. External Validation of the San Francisco Syncope Rule. *Annals of Emergency Medicine* 2007. (Validation)
3. Quinn, J; McDermott, DA; Stiell, IG; et al. Prospective Validation of the San Francisco Syncope Rule to Predict Patients with Serious Outcomes. *Annals of Emergency Medicine* 2006 May; 47(5). (Validation)
4. Cosgriff TM; Kelly AM, Kerr D; External validation of the San Francisco Syncope Rule in the Australian context, *CJEM* 2007; 9(3): 157-161. (Validation)
5. Birnbaum A, Esses D, Bijur P, et al; Failure to validate the San Francisco Syncope Rule in an independent emergency department population, *Annals of Emergency Medicine* 2008 Aug; 52(2): 151-159. (Validation)
6. Quinn, JV; Stiell, IG; McDermott, DA; et al. Derivation of the San Francisco Syncope Rule to Predict Patients with Short-Term Serious Outcomes, *Annals of Emergency Medicine* 2004 Feb; 43(2); 224-32. (Derivation)
7. Carpenter CR; The San Francisco Syncope Rule did not accurately predict serious short-term outcome in patients with syncope, *Evidence Based Medicine* 2009 Feb; 14(1): 25.
8. Reilly BM, Evans AT; Translating Clinical Research into Clinical Practice: Impact of using prediction rules to make decisions, *Annals of Internal Medicine* 2006;144: 201-209.
9. Charlson ME, Ales KL, Simon R, MacKenzie CR; Why predictive indexes perform less well in validation studies: Is it magic or methods? *Archives of Internal Medicine* 1987; 147: 2155-2161.
10. Worksheet for evaluating an article on Clinical Prediction Rules