



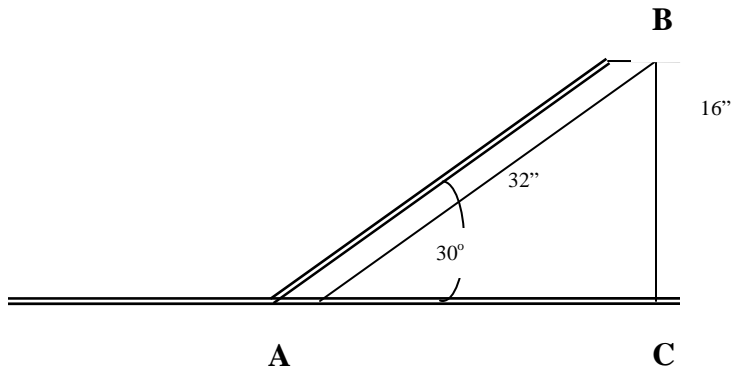
AUDIT OF HOB ELEVATION IN INTUBATED PATIENTS

Steps for determining unit compliance with the HOB elevation:

1. Every day, randomly select times during 3 eight hour time periods to assess each intubated patient in the unit. To randomly select times, place 8 slips of paper, each with a number from 1 to 8, in a container. Withdraw one number and add that number to the time the eight hour period began. For example, if the first eight hour period begins at 0700 (7:00 am) and the number drawn is 6, then the audit would be done at 1300 pm (1:00 pm).
2. At the designated time, begin assessing each intubated patient in the unit according to the following criteria :
 - A. Are there contraindications present which would preclude HOB elevation? (contraindications: hypotension, physiologic instability, low CI, medical order for no HOB elevation, medical/nursing procedure in progress where HOB elevation would be inappropriate, prone positioning) If contraindications present, indicate on audit tool and skip the next two steps for that patient.
 - B. Measure the elevation of the backrest (see suggestions below for ways to measure backrest elevation if the bed does not have a built-in angle measure) and note on the audit sheet.
 - C. Indicate whether backrest elevation is 30 degrees or higher on the audit sheet (0 = no, 1 = yes)
3. Determine the % compliance with HOB elevation at 30 degrees or higher: divide the number of audits where the HOB was elevated to 30 degrees or higher by the total number of HOB elevations audited. For example, if 10 audits were done on several patients with no contraindications for HOB elevation, and if 7 of those were elevated to 30 degrees or higher, the % compliance with the practice standard would be 70%. (Note: if numbers are input into the Excel spreadsheet "HOB Elevation Audit" this calculation will be automatically done, as well as an average of the actual backrest elevation for all audits done)

Methods for Estimating HOB Elevation:

- Use the built-in angle measurement for HOB elevation if available.
- Measure the HOB elevation with a simple protractor positioned on the horizontal frame of the bed and the frame of the backrest at the pivot point of the backrest. Protractors can be purchased at any office supply store.
- Calculate the angle of the backrest elevation by measuring the length of the backrest from the pivot area (A on the diagram below) to the top of the backrest (B). Then measure from the top of the backrest (B) straight down to the horizontal frame of the bed (C). Divide the distance from B to C by the distance from A to B and take the arc sin of that product. Angle of backrest = $\text{arc sin of } (A \text{ to } B) / (B \text{ to } C)$. (Note: if numbers are input into the Excel spreadsheet "HOB Elevation Audit" this calculation will be automatically done)



Example: The angle of backrest elevation for a backrest (A to B) which is 32 inches which is 16 inches above the frame (B to C) is equal to the arc sin of $32/16 = 30$ degrees.

Obtain from hospital databases:

- VAP rate = # VAP / 1000 days of ventilator use (check with Infection Control nurse or committee)
- Length of intubation = days of intubation / # intubated patients (check with Respiratory Therapy and/or Critical Care Committee)
- ICU LOS = days of ICU admission / # ICU patients (check with Critical Care Committee and/or appropriate hospital department which tracks length of stay)