



Epidemic Curves: Setting a syndrome cutoff score for more specific analysis.

RedBat Automated Reports for epidemic (epi) curves are shipped with cutoff scores of 25 (out of a possible 100) for each syndrome. This means patients with a syndrome score ≥ 25 will be counted as having this syndrome, but patients with a score < 25 will be excluded. This cutoff score is a good starting point, but you need to refine the cutoff scores for all 11 RedBat syndromes to obtain optimal results in your hospital or county.

How do you choose a cutoff score that includes the patients most likely to have a condition or disease within that syndrome? A good starting point is a cutoff score that includes only the top 5% of scores.

As you will see in the box below, 5% is not a magic number, and may need to be adjusted up or down so that your average patient count is somewhere between 1 and 3 cases per time interval. We call this the *Case Number*. If your epi curve contains less than 1 case per time interval, then you will have too few cases to set a meaningful cutoff point. If your epidemic curve contains more than 5 cases per time interval, then you are probably including patients less likely to have a condition or disease within the syndrome you are analyzing.

Here's an example to show how to set a cutoff point for the top 5% of Flu-like Syndrome cases.

In RedBat, run a customized frequency of Flu-like syndrome scores:

1. On the Focus tab, select Focus = Symptoms and Signs Tab.
2. On the General tab select Date = Arrival Date and for the date range include one year of data (or as much as you have if less than a year).
3. On the Select tab, select Field = Flu-Illness and Assign Value > 0 .
4. On the Stratify tab, select Vertical Variable = Flu-Illness and enter a range from 0 to 100 with an interval of 2.
5. Click Done, Run Report.

Then, determine the cutoff score which includes only the top 5% of your Flu-Illness scores in your background counts:

1. Multiply the Total by 0.05. This is how many cases comprise the top 5%, and is a good estimate of your Case Number.
2. After choosing an Case Number, determine the corresponding Cutoff Score as follows: Starting at the row labeled ≥ 100 and moving up the frequency table, add up the number in each row until you reach or exceed the Case Number. Either of the numbers in the interval label for this row is your cutoff score for Flu-like syndrome.

Incorporate this value into your Automated Report:

1. Run the Automated Report for the frequency Daily Flu-like syndrome by day.
2. Click on the Select tab and remove the Selection > 25 .
3. Click on the Field box to re-select the Flu-like syndrome and on Assign Value to replace it with the cutoff score you calculated.
4. Click on File>Save as Automated Report to save this value, overwriting the existing one.

Repeat these steps for the remaining RedBat syndromes.

Case Number

As explained above, the Case Number is somewhere between 1 and 3 cases per time interval. This means if you are analyzing a year's worth of data on a daily basis, you would want an Case Number of between 300 and 1200 cases per year (365 days \times 3 = 1095).

Agencies with a very large amount of data may accept higher Case Numbers or they can limit their scores to the top 3% or 4% of syndrome scores to reduce their counts.

Agencies with a very small amount of data may need to graph using a weekly interval. This requires an Case Number of only 100 cases / year (50 weeks \times 2 = 100).