



What is a base rate?

A base rate is a number, usually a percentage, that represents the prevalence of a characteristic in a population. It gives you information on how frequent or likely an event might be.

This could be...

- ...how prevalent a disease is in a population: *Appendicitis affects about 7% of the US population. 7% is the base rate for appendicitis in the United States.*
- ...the percentage of students graduating with a degree in business, the most popular degree: *The base rate for business Bachelors degrees is 1 in 5 or 20%.*

Base rates are a helpful statistical feature to consider when asking yourself about the likelihood of something being true. You want to consider base rates when you are asking questions about a view or hypothesis you are considering—"Is this likely to be true?", "How true is this?", "What is most likely true?", or "How does this usually go?."

Base rate neglect/fallacy

Base rate neglect or base rate fallacy is a common tendency to neglect base rate information when pondering the likelihood of something being true. [This resource](#) goes into more detail about this phenomenon.

Example of using a base rate in our thinking:

Consider the statements "70% of hospitalized Covid patients have been vaccinated" or "7 of every 10 hospitalized Covid patients are vaccinated." Does this surprise you? Should it? Is this alarming?—the answer to these wonderings lie in the vaccination base rate.

As it relates to the Covid-19 pandemic, being inclined to factor in the percentage of a population that is vaccinated (vaccination base rate) when looking at hospitalization numbers allows us to understand these percentages with more clarity. It would make sense that we would see larger ratios of hospitalized vaccinated individuals to unvaccinated individuals if the given vaccination base rate is high. If 100% of the population was vaccinated then all hospitalizations would be for vaccinated individuals.

When you begin to factor base rates into your interpretations of the statistics you read in the headlines, you might begin to notice how statements like the one above can be used to mislead or simply be misinterpreted. Base rates are a numerical figure that we can use when we want to measure the likelihood of situations we want to consider. We evaluate how likely these other situations are by comparing them to the known base rate.

Important notes:

- Knowing what specific characterizations of a population a base rate refers to is essential. The narrower, and more clearly specified, the better. It is best to use base rates that best match the situation you are examining.
 - Using a base rate in your considerations is only useful if it is based on well known, widely collected, and sufficient data. The less robust the base rate, the less useful it is in your considerations.
 - When applying base rates to judgments of people, one should be cautious about the accuracy of those base rates, and be aware that relying on a base rate can lead to reinforcing harmful stereotypes that are not appropriate in our judgements about individuals.
-