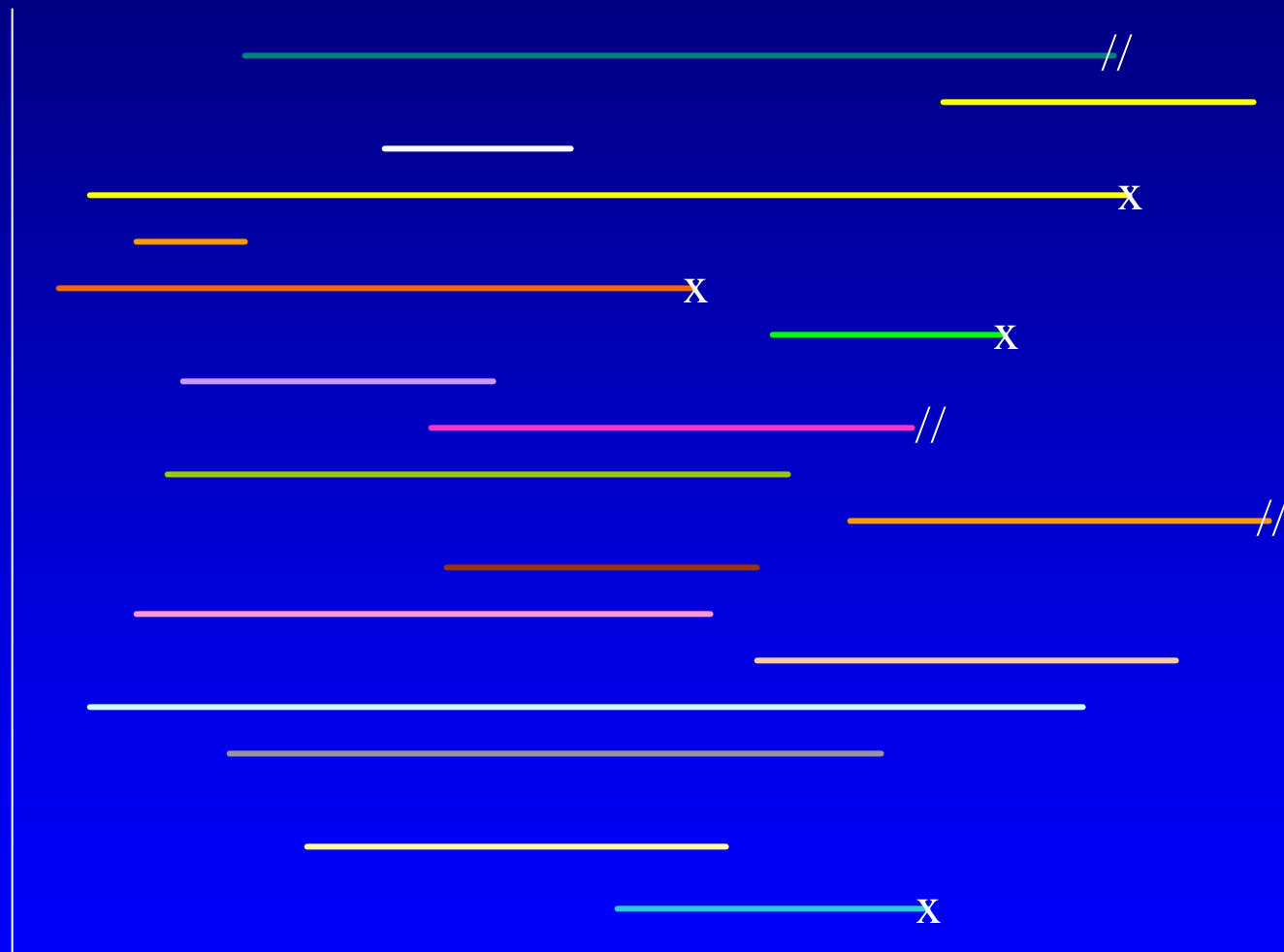
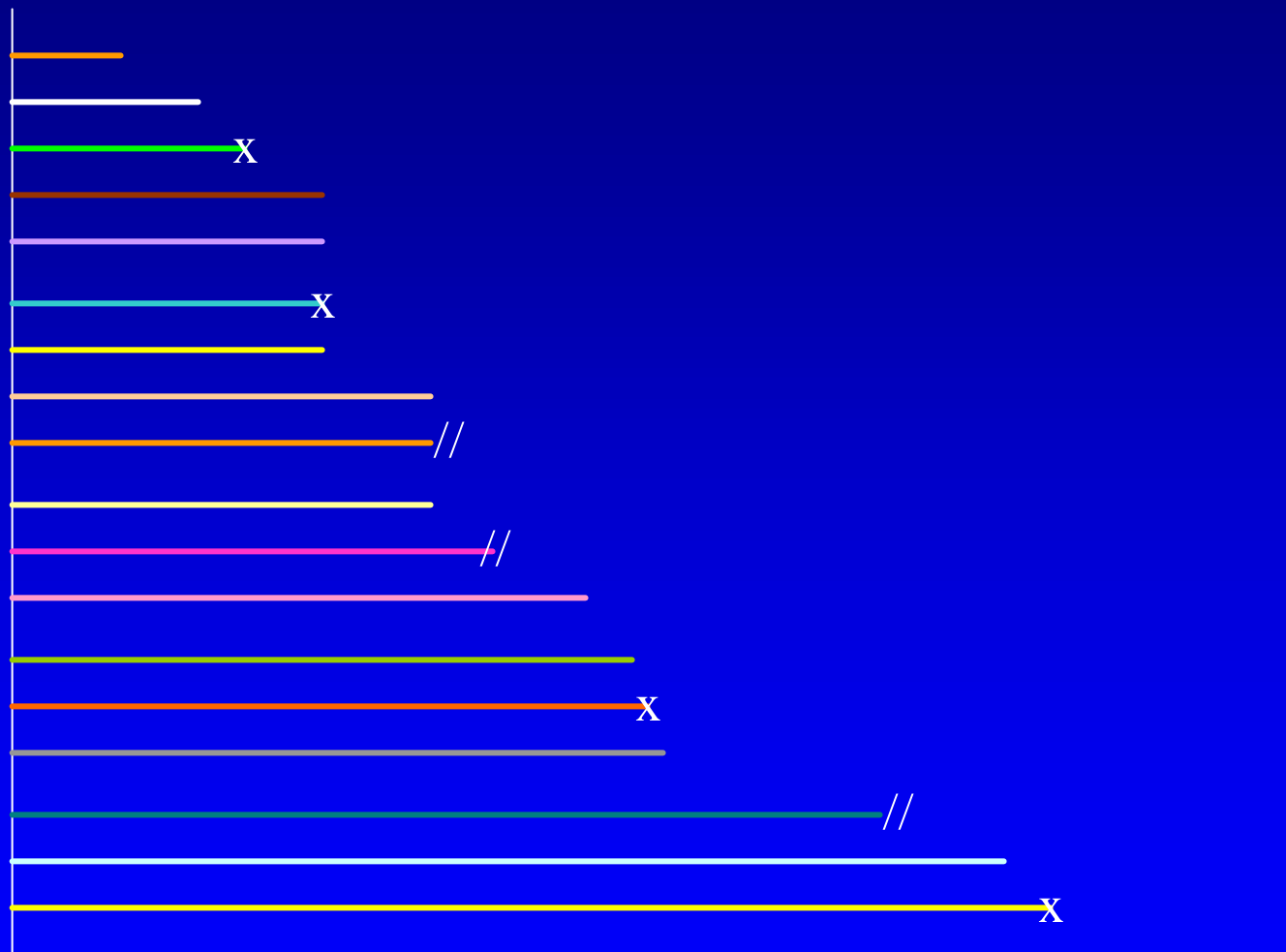


Why Use a Kaplan-Meier Analysis?

- The goal is to estimate a population survival curve from a sample.
- If every patient is followed until death, the curve may be estimated simply by computing the fraction surviving at each time.
- However, in most studies patients tend to drop out, become lost to followup, move away, etc.
- A Kaplan-Meier analysis allows estimation of survival over time, even when pts drop out or are studied for different lengths of time.



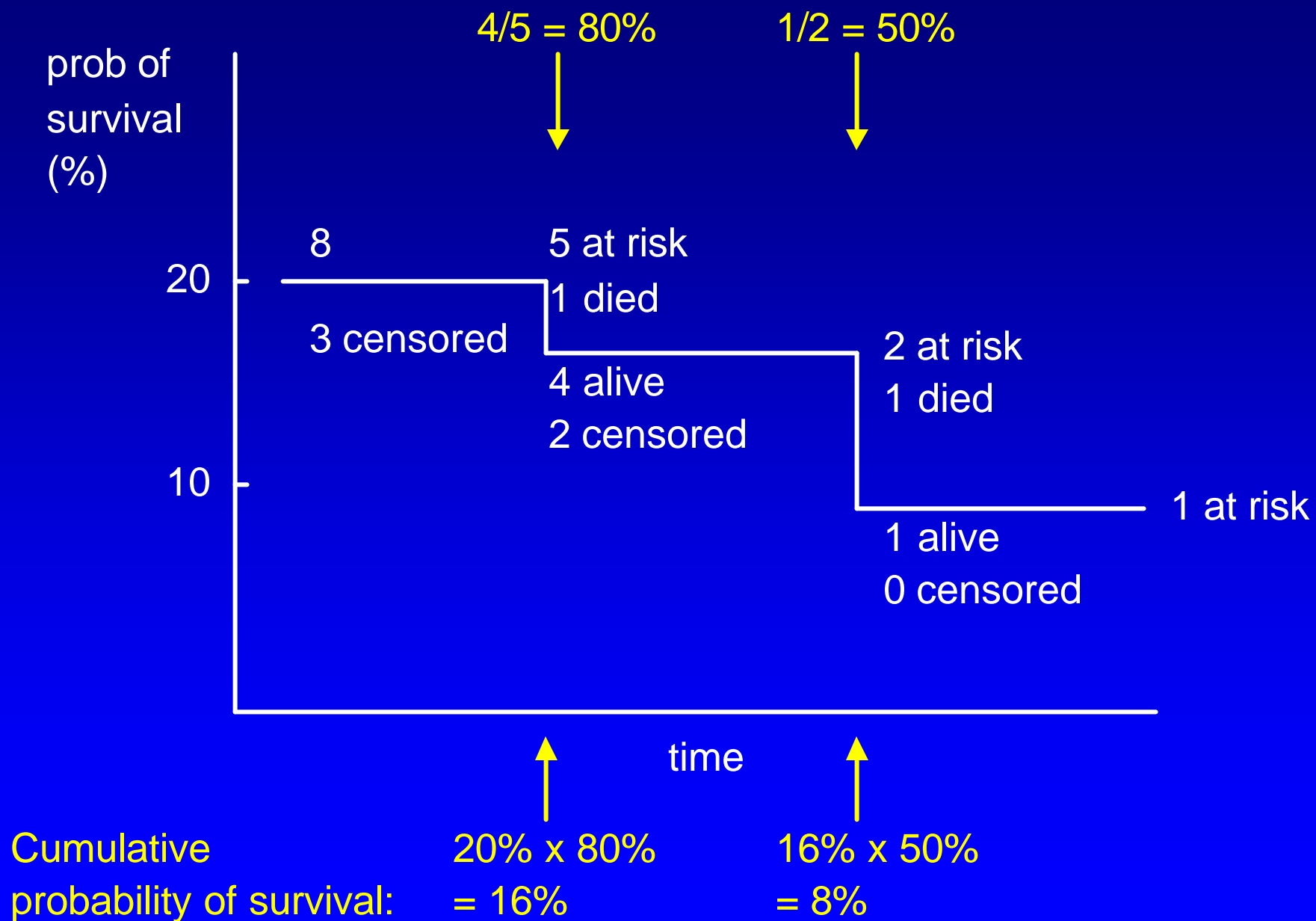
time



time

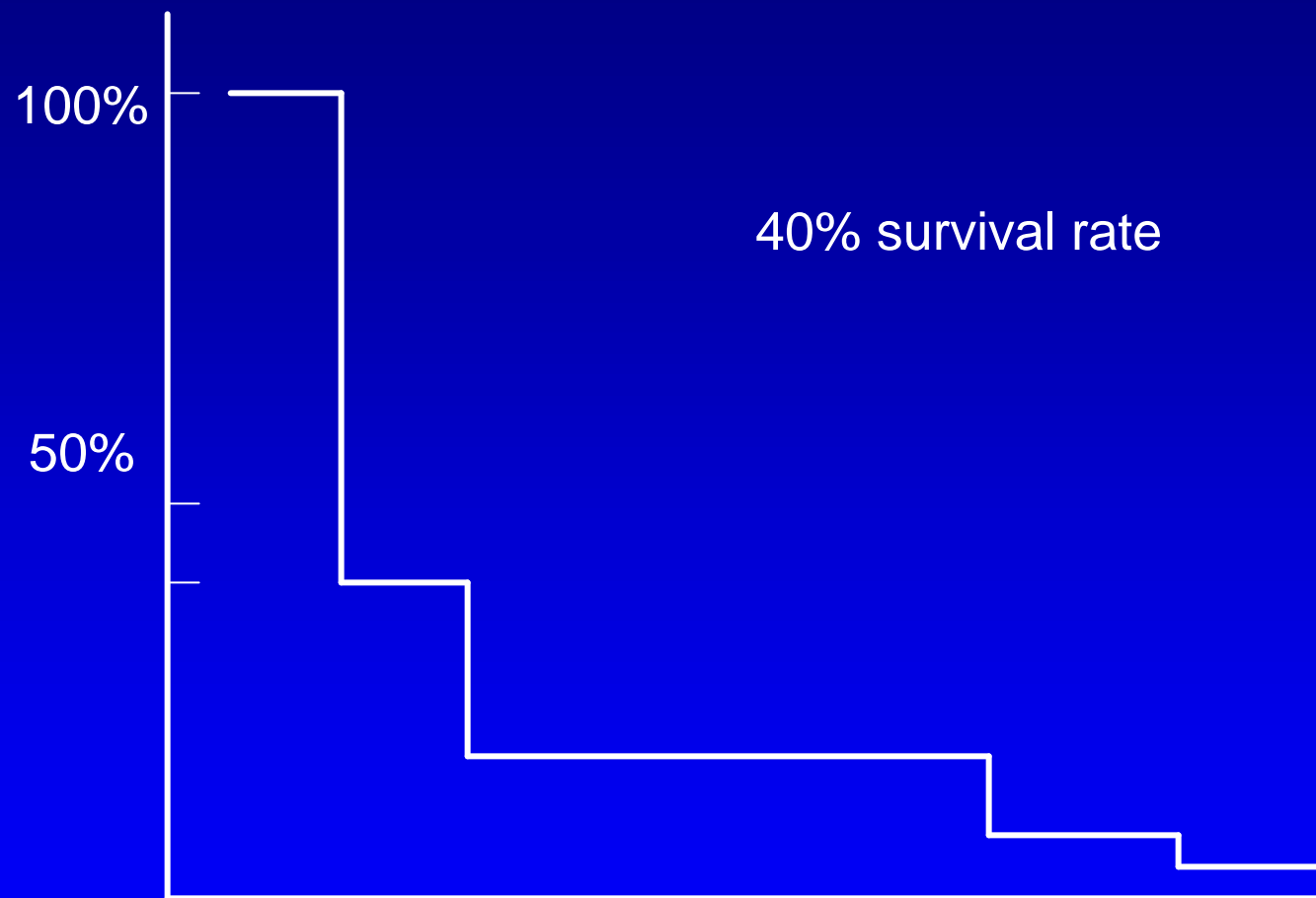
How Does a Kaplan-Meier Curve Work?

- For each interval, survival probability is calculated as $\frac{\text{\# pts surviving}}{\text{\# pts at risk}}$. Pts who have died, dropped out, or not reached the time yet are not counted as “at risk.” Pts who are lost are considered “censored” & are not counted in the denominator.
- Probability of surviving to any point is estimated from cumulative probability of surviving each of the preceding time intervals (calculated as the product of preceding probabilities) .
- Although the probability calculated at any given interval isn't very accurate because of the small # of events, the overall probability of surviving to each point is more accurate.



Interpretation of Kaplan-Meier Curves

- Vertical axis represents estimated probability of survival for a hypothetical cohort, not actual % surviving.
- Precision of estimates depends on # observations; therefore, estimates at left-hand side are more precise than at right-hand side (because of small #'s due to deaths and dropouts).
- Curves may give the impression that a given event occurs more frequently early than late, because of high survival rate and large # people at beginning.



40% survival rate