Here is the general formula for the Cox Proportional-Hazards Regression Model:

In its most basic form, for a single predictor variable, the model is expressed as:

$$\lambda(t) = \lambda_0(t) * \exp(\beta * X)$$

where

$\lambda(t)$ represents the hazard rate at time t for an individual.

$\lambda_0(t)$ is the baseline hazard function, which represents the hazard when all predictor variables (X) are equal to 0.

β is the coefficient associated with the predictor variable X.

X is the value of the predictor variable.

For multivariate Cox models, the formula extends to:

$$\lambda(t) = \lambda_0(t) * \exp(\beta_1 * X_1 + \beta_2 * X_2 + \ldots + \beta_n * X_n)$$

where

$\lambda(t)$ is the hazard rate at time t for an individual.

$\lambda_0(t)$ is the baseline hazard function.

$\beta_1, \beta_2, \ldots, \beta_n$ are the coefficients associated with each of the predictor variables $X_1, X_2, \ldots, X_n$.

The formula for estimating the Kaplan-Meier survival probability at a specific time point, say "t," is as follows:

$$S(t) = \Pi [1 - (d_i / n_i)]$$

where

S(t) represents the estimated survival probability at time "t."

Π denotes the product over all time points "t_i" where "t_i" is less than or equal to "t."

d_i represents the number of events (e.g., deaths or failures) that occurred at time "t_i."

n_i represents the number of subjects or patients who were at risk (i.e., still under observation and had not experienced the event) just before time "t_i."