> DIGITAL
HEALTHCARE
HACKATHON
Barcelona 18th &19th May

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GUIDELINES
2019 HACKATHON

❝ The **Digital Healthcare Hackathon** is almost here! Below you can find some information about what you are expected to deliver and how your algorithms will be evaluated ❝

The expected result will be a <u>Prediction Curve</u> from T_0 to a given horizon

The error metric that will be used to assess your models will be the <u>Weighted Brier Score</u>. A quick explanation of its formula can be found in the next slide
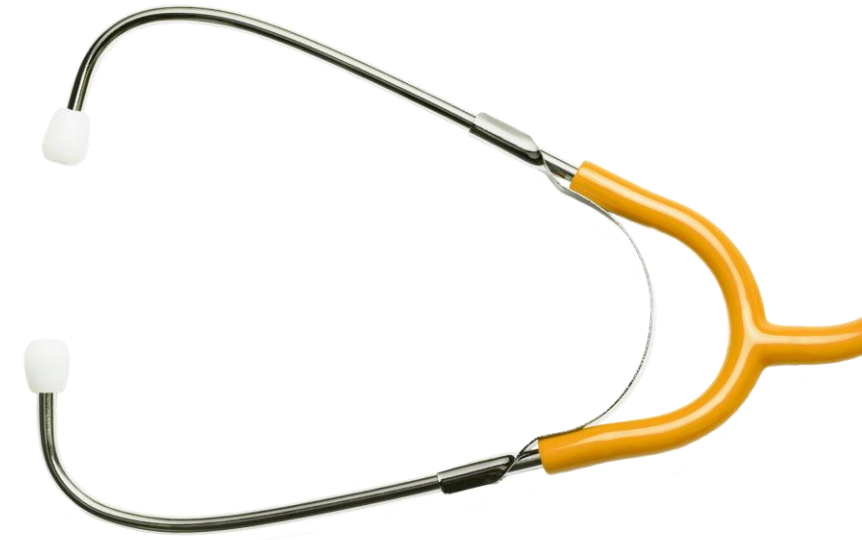
Must have

Machine Learning & Survival Analysis knowledge

Programming language skills (R, Python, …)

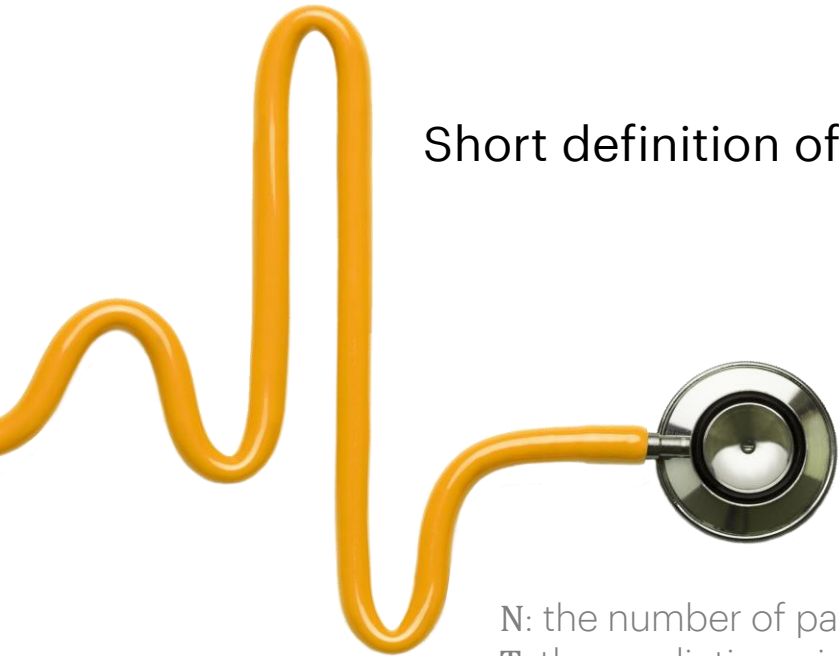Predisposition to have fun & meet people!

Nice to have

Missing values imputation in medical datasets

Data Visualization familiarity

WEIGHTED BRIER SCORE

All teams will be evaluated based on the best prediction/model submitted using the Brier Score with Inverse Probability Censoring Weights (the lower the better).

Short definition of the **Brier Score** with **Inverse Probability Censoring Weights**:

$$ErrorScore = \frac{1}{NT}\sum_{i=1}^{N}\sum_{j=1}^{T} W_i(t_j)\left|\hat{Y}_i(t_j) - Y_i(t_j)\right|^2$$

N: the number of patients in the test set
T: the prediction window
$\hat{Y}_i$: the prediction at time t of analysis, i.e. the probability that the i-th patient is alive

Y_i: the actual value at time t in the test set: $\begin{cases} 0 & \text{if is dead} \\ 1 & \text{if alive or censored} \end{cases}$

W_i: the inverse weight attributed to this Y_i value: $\begin{cases} 1 & \text{if dead or alive (not censored)} \\ W & \text{if censored} \end{cases}$