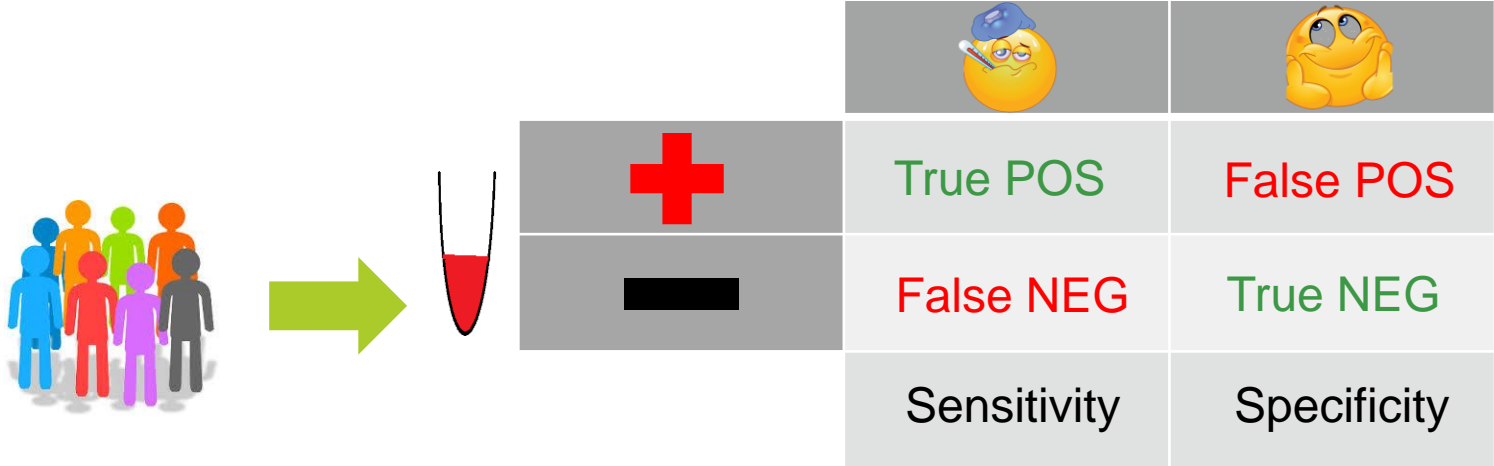


# Bayes conference 2019

Bayesian method to predict the probability to comply to the criteria for a future study or to monitor a new study



# CONTEXT: DEVELOPMENT OF A DIAGNOSTIC TEST ABLE TO DETECT PRESENCE/ABSENCE OF A DISEASE



Criteria: sensitivity/specificity  $\geq$  XX%



RISK PERCEPTION

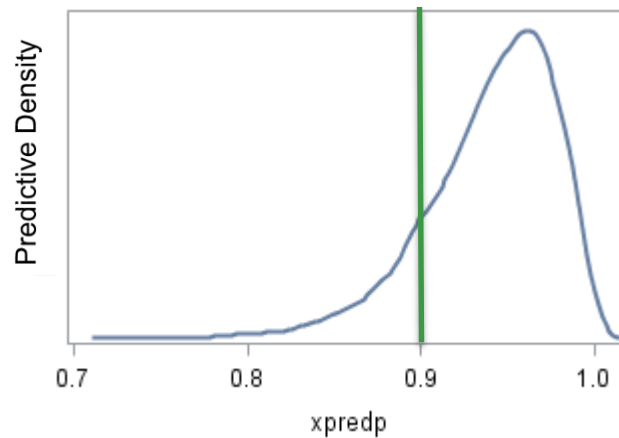
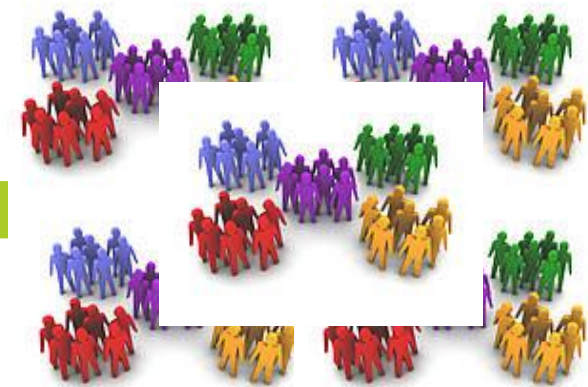
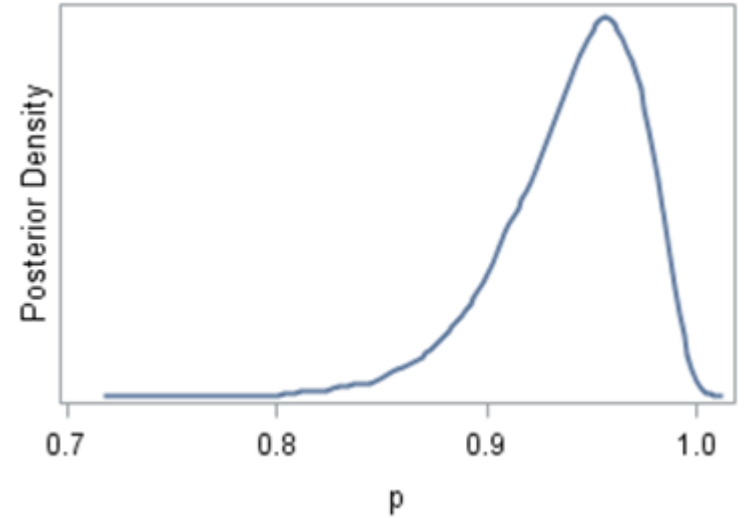
Could I reach the criteria on my future study ?



# BAYESIAN WORKFLOW



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**Probability of 87% to reach the criteria**



# HELP THE DECISION MAKING AND THE RISK MANAGEMENT



RISK MANAGEMENT

- **For a future study:**
  - Decide to pass to the validation phase
  - Or to review the design of the diagnostic test in the verification phase
  - Define the design of the future study
- **To monitor a new study:**
  - Compare the predictive distribution of the first study and the new study
  - If both distributions are different, stop the enrolment to make investigations





PIONEERING DIAGNOSTICS