

## PURPOSE

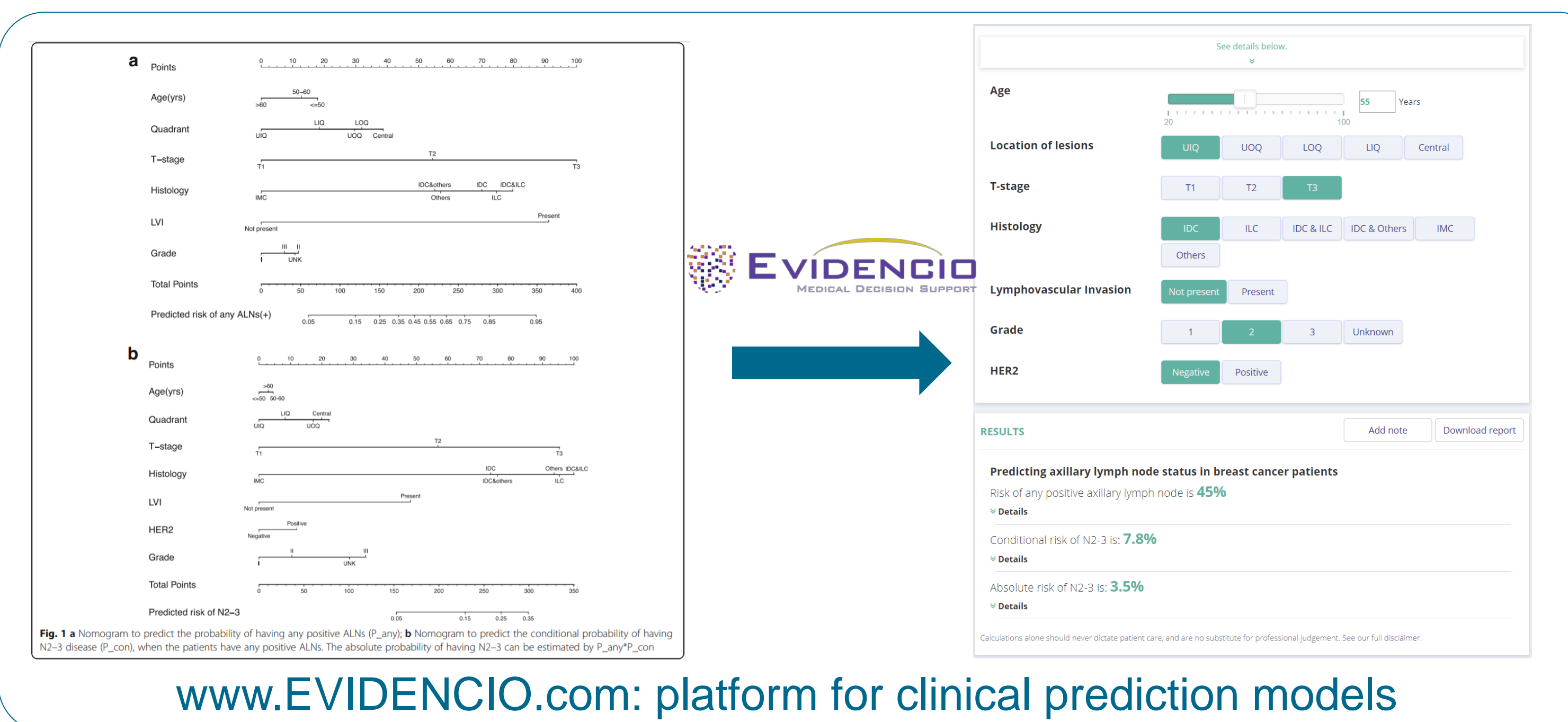
Clinical prediction models provide insight in the probability of a specified event happening based on the personal characteristics of the patient. Predicted probabilities support physicians in tailoring clinical decisions to the patients needs.

## SETTING

Throughout the past decades, the amount of developed prediction models has grown, yet the application of these models in daily medical practice falls behind. It is currently uncertain how many prediction models exist to support decision making in breast cancer care and exactly which decisions may be supported using prediction models. This study aimed to identify all developed prediction models on breast cancer care and to assess the clinical applicability of the models in the target breast cancer population.

## METHODS

A literature search was performed to identify developed risk prediction models published from January 2010 up to June 2018. Models predicting breast cancer related events were included. Identified models were assessed on the reported transparency and reproducibility and incorporated in the online platform for prediction models: Evidencio. Clinical applicability of the models was assessed using a digital implementation of the Dutch breast cancer guideline called Oncoguide. Models were assigned to location in the guideline where they may support clinical decisions.

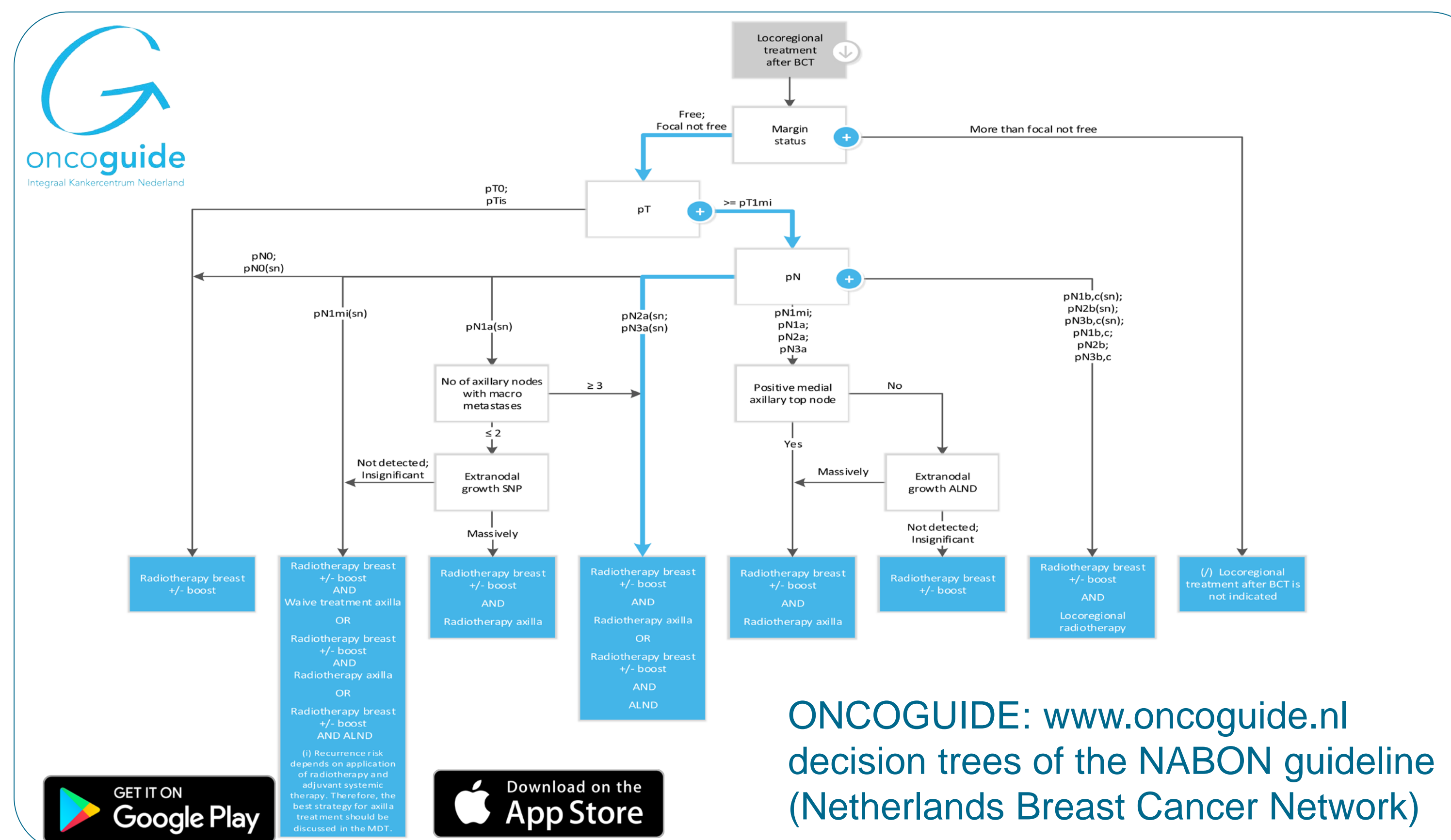


## RESULTS

A total of 91 studies describing the development of 142 prediction models were identified. Thorough assessment showed that 31 models were reported in full having the description of all the necessary parameters to reproduce the underlying statistical formula and were incorporated in Evidencio.com. For 95 models the formula could be derived through the presented nomogram, table, or online calculator. The remaining 16 models were lacking information to construct any method to predict the outcome of an individual patient and could therefore not be used in practice.

## CONCLUSIONS

A total of 142 prediction models were developed between January 2010 and June 2018. The overall quality of reporting was poor as 111 models were not described transparently. All 31 identified models were assigned to the location in the guideline of which the model may support clinical decision making. Further assessment is necessary on the clinical impact and validity of the models in the Dutch population before implementing them in the guideline.



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