

Abstract

The purpose of this study was to evaluate if the use of business intelligence tools with the application of predictive analytics, could predict patients at high risk of not attending an appointment in an Irish health care context. The aims of this study were to:

- Use statistical analysis tools, explore relationships between variables associated with missed appointments to help understand the most commonly affecting factors.
- Develop a statistical model with a cut-off threshold that predicts the probability a patient will miss an appointment taking the most common factors into consideration and provide a demonstration of how this was achieved
- Evaluate if it is possible to accurately predict patients at high risk of missing an appointment

Data obtained from a radiology department from an Irish hospital collected over a four-year period (2014-2018) was used for a quantitative approach involving statistical analysis to develop a model that can be used not just for this department but a general model that can be applied to any Imaging department in a hospital or clinic with a scheduling system. Patient appointment details that are available in almost every EHR and scheduling system were used for this study. All patient factors were taken into consideration after literature reviews, analysis and modelling were proven to affect patient non-attendance and targeted intervention steps were proposed to reduce the number of missed appointments.

