Submission Id: 3544

Title

The development of a multilevel risk prediction model to identify risk of failure to complete CRC screening

Priority 1 (Research Category)

Screening, prevention, and health promotion

Presenters

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Abstract

Context

The use of predictive analytics can help health systems target the right services to the right patients at the right time while improving population health. Multilevel data, or data at the interpersonal, organizational, community, and policy levels, is rarely sought after but may be used to improve risk prediction by providing information about a patient and the many groups to which they belong. Colorectal cancer screening promotion can be expensive and not all patients need it.

Objective

This study sought to develop a risk prediction model using individual data available in the EHR, and then compared a multilevel risk prediction model using publicly available multilevel data.

Study Design and Analysis

Retrospective data was used to develop a risk model, using logistic regression, first in data available in the EHR, and then adding multilevel data.

Setting or Dataset

This retrospective data only study was conducted at Kaiser Permanente Northwest.

Population Studied

Patients were eligible who were 50-75 years old, had been members at KPNW for at least a year before their birthday in 2018, and if they were due for screening.

Results

The individual level model was sufficient and included 14 characteristics, and had a bootstrap corrected C-statistic of 0.722. The multilevel model added 9 variables, and the bootstrap corrected C-statistic was 0.724.

Conclusions

The performance of the model after adding multilevel data did not improve. Adding multilevel data did not provide any benefit to the performance of the model.