Young patients performance in LGI model

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When applying he LGI model in Geisinger ages 45-50 no flag was produced.

We tested by comparing scores with THIN and with MHS and had the following conclusions:

1. Scores are highly dependent on age. So is the sensitivity in different age groups. Here is a plot of sensitivity as function of age in THIN (we do not have labeled data from Geisinger so we are unable to show it there).

A graph showing the growth of the age

Description automatically generated

1. There is no transition point at age 50 and probably there is no bug that discriminates young patients. This point was also supported by the finding of 3 flagged patients in young Geisinger population after this work was done.
2. Geisinger population has lower score across all age groups and therefore the effect of reduced sensitivity in young ages makes none of them reach threshold. This can be seen in many features distributions such as Hemoglobin. This may be explained as Geisinger population is only patients that declined screening while MHS and THIN are general population.
3. We should consider optimizing “years saved” rather than PPV. For this we will have to adjust threshold by age. This is also reasonable because colonoscopy risks also increase with age. The price will be reduced number of positive colonoscopies.