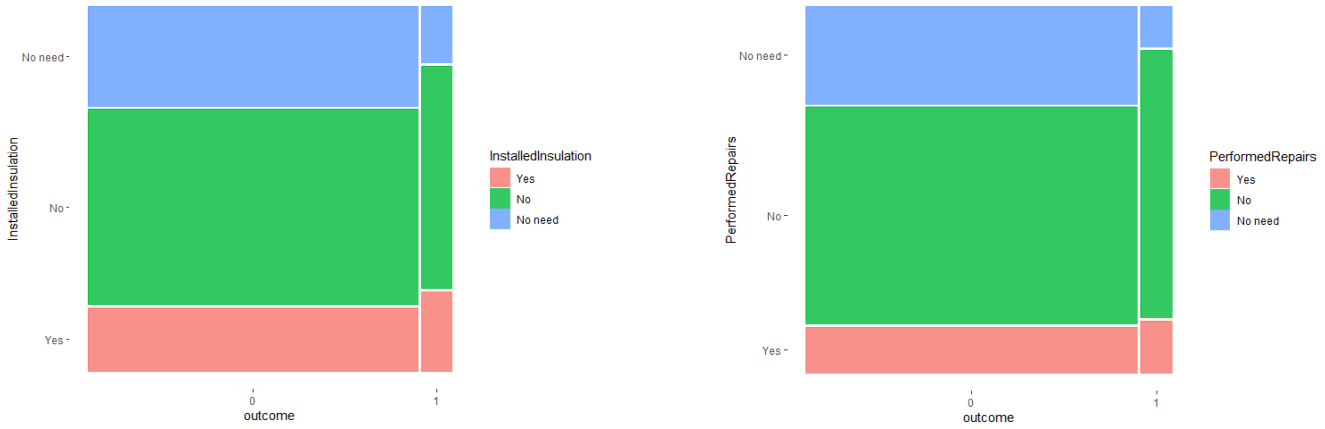

Figure S1: Mosaic Plot

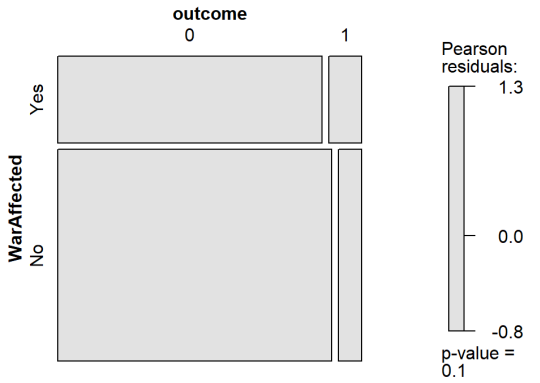

Figure S2: Permutation test for conditional independence

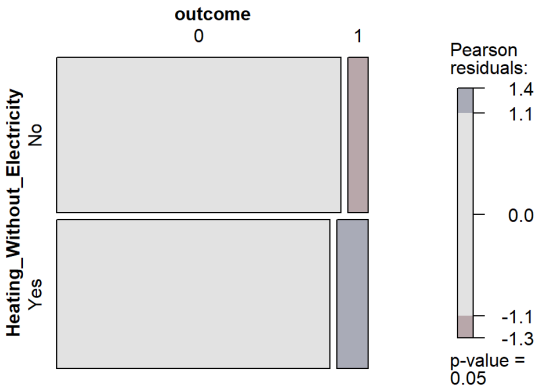

Figure S3: Permutation test for conditional independence

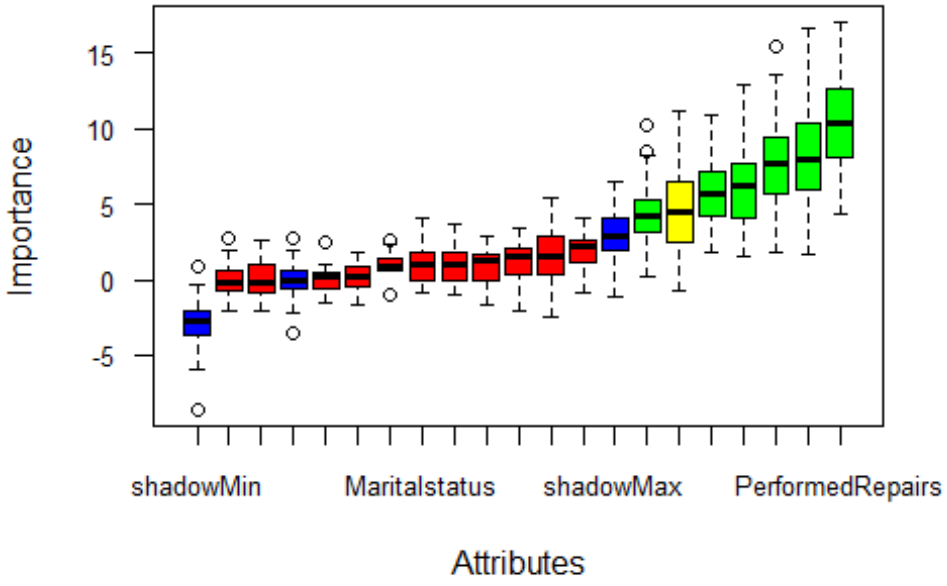

Figure S4: Random forest-based feature selection

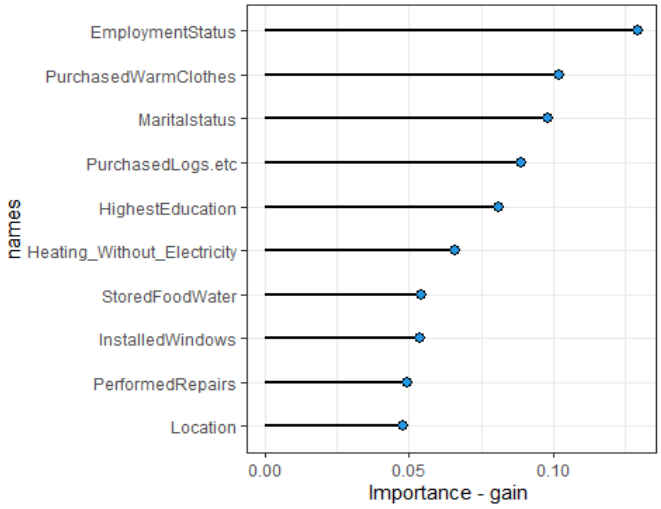

Figure S5: Gradient boosting mode (LightGBM) results for variable importance based on gain

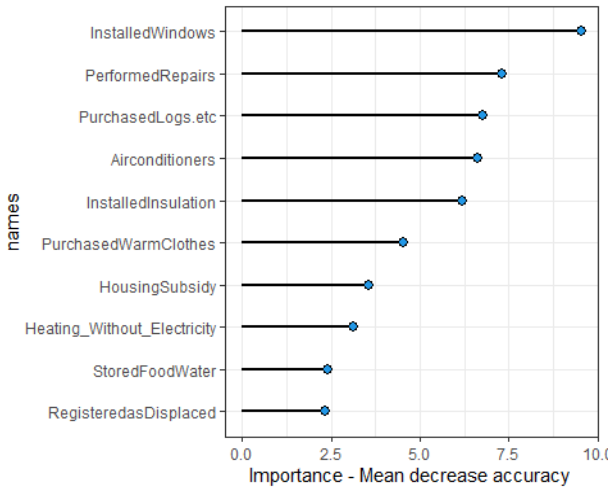

Figure S6: Random Forest analysis with permutation importance

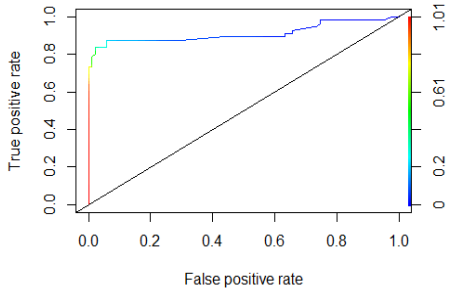

Figure S7: ROC with AUC (0.911) for K-Nearest Neighbor Classification

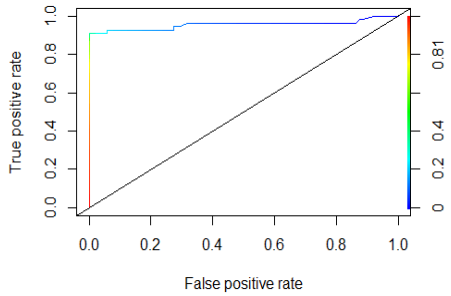

Figure S8: ROC with AUC (0.956) for Random Forest Classification

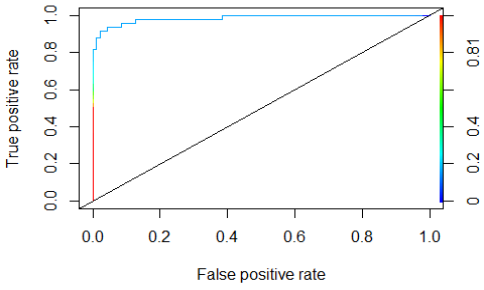

Figure S9: ROC with AUC (0.985) for SVM Classification

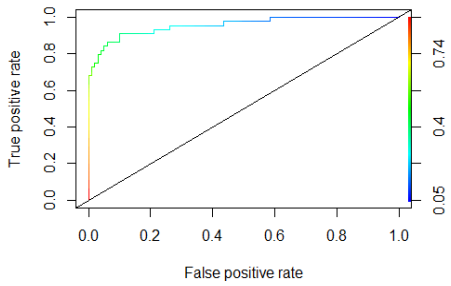

Figure S1: ROC with AUC (0.956) for gradient boosting classification

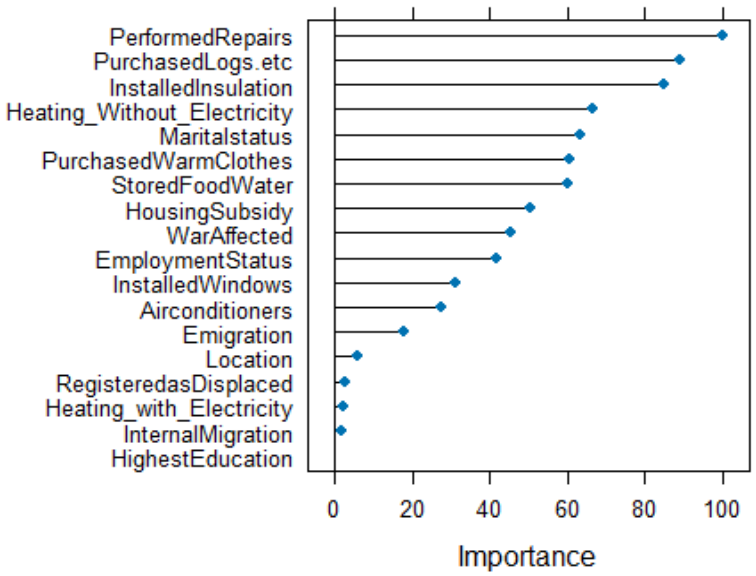

Figure S2: Model agnostic ROC-based Feature importance

Figure S3 SHAP analysis: Top-ranked predictors based on cases with cold injuries

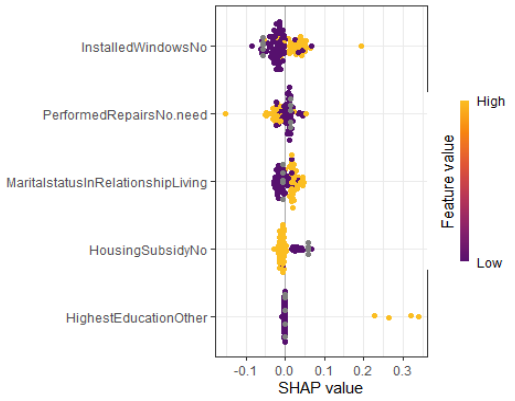

Figure S4 Beeswarm plot

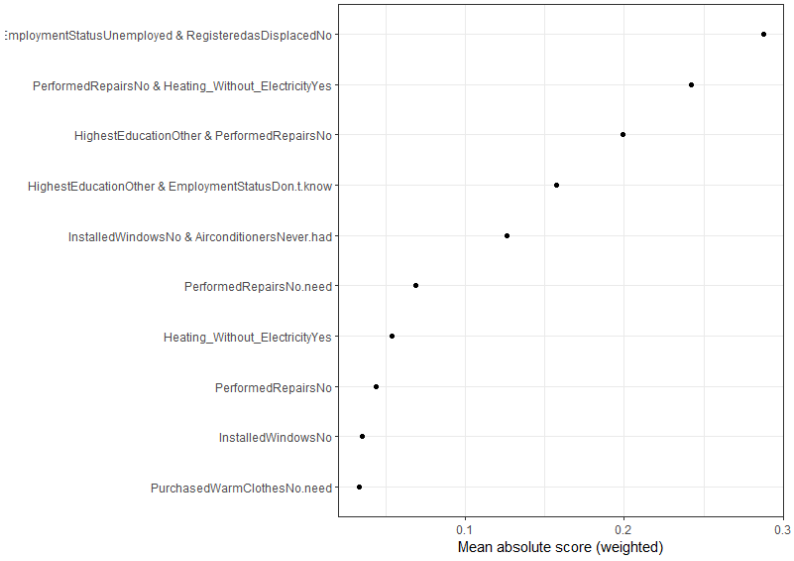

Figure S5 SHAP analysis using Explainable Boosting Machine (EBM)

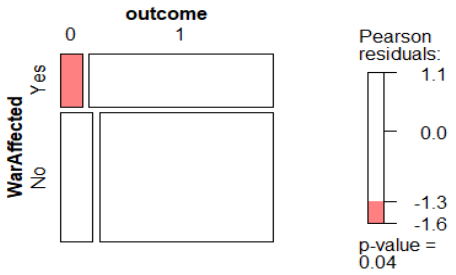

Figure S15: Permutation test for conditional independence

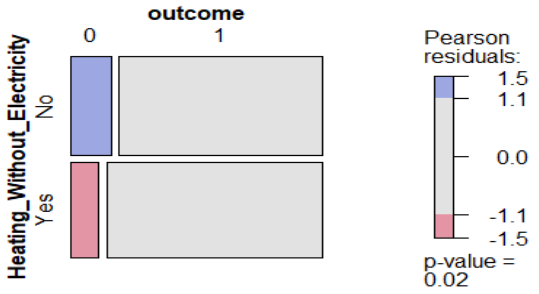

Figure S16: Permutation test for conditional independence

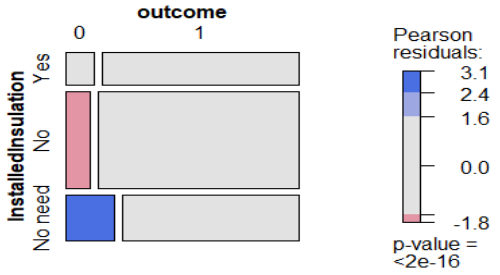

Figure S17: Permutation test for conditional independence

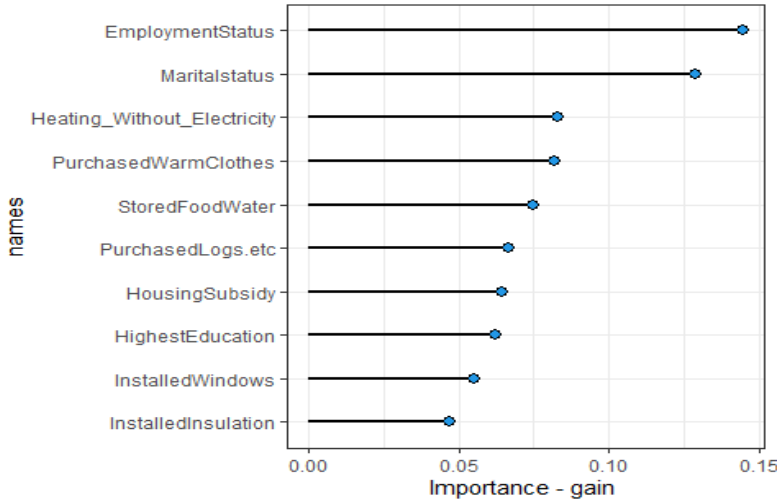

Figure S18: Gradient boosting mode (LightGBM) results for variable importance based on gain

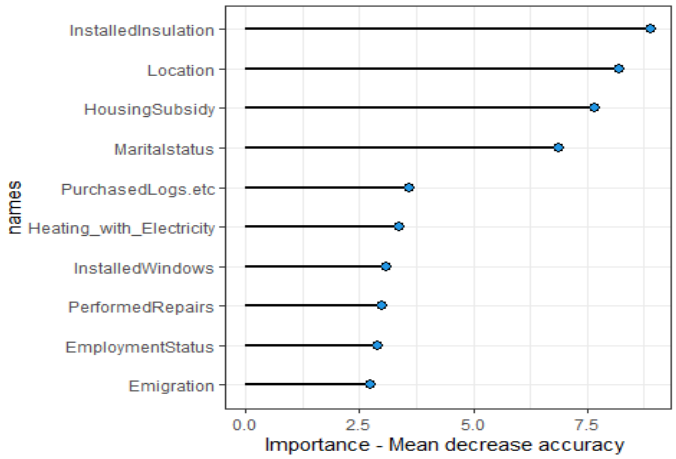

Figure S19: Random Forest analysis with permutation importance

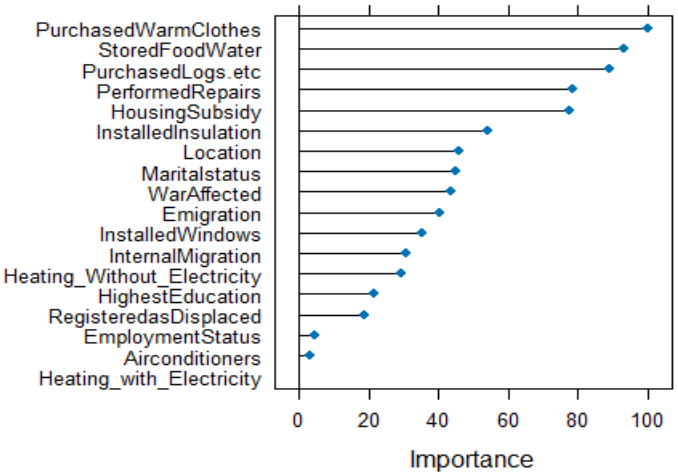

Figure S20: Model agnostic ROC-based Feature importance

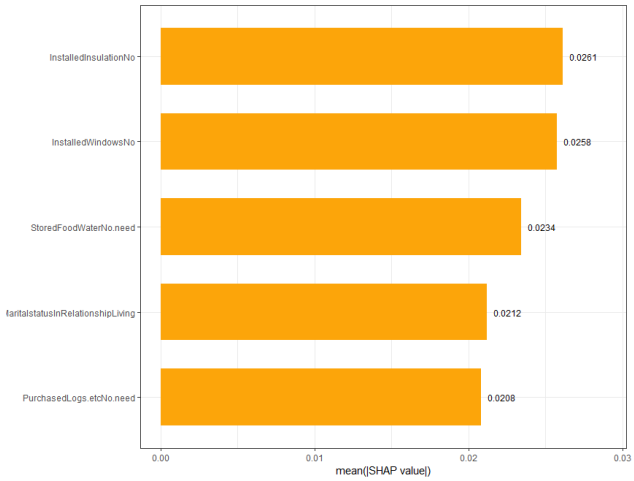

Figure S21: SHAP analysis: Top ranked predictors based on cases with common cold

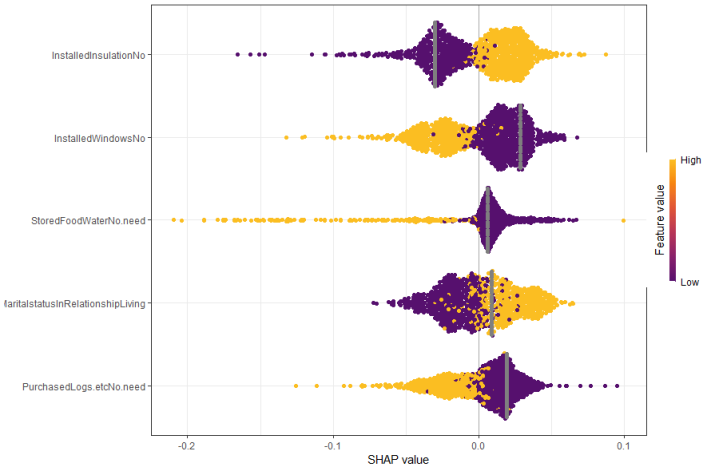

Figure S22: Beeswarm plot

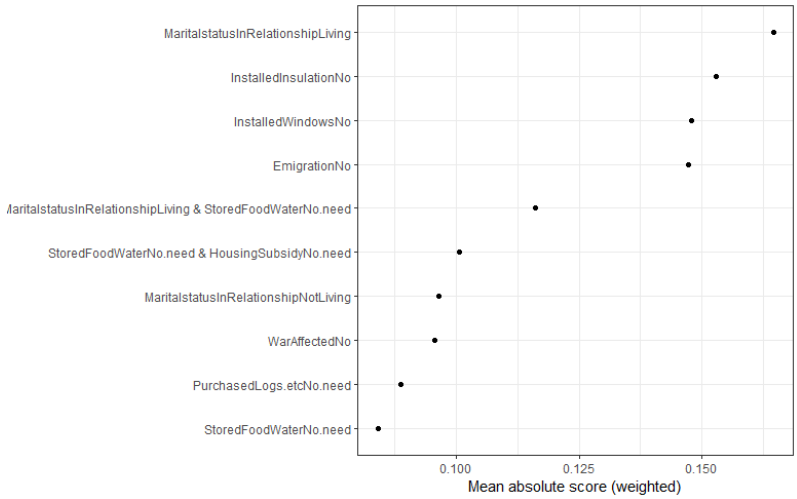

Figure S23: SHAP analysis using Explainable Boosting Machine (EBM)