**Supplementary Table 3.** Performance metrics comparing gradient boosting, ROX, and ROX-HR model performances to a random classifier at a time window of 8 hours. The metrics include sensitivity, specificity, mean AUROC, mean AUPRC, positive predictive value (PPV), and negative predictive value (NPV). The PPV for ROX and ROX-HR could not be obtained, because these models predicted no true positive and false positive values.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model Name** | **Sensitivity** | **Specificity** | **AUROC** | **AUPRC** | **PPV** | **NPV** |
| Random, No-Skill Lead Time 1 hr. Lead Time 2 hrs. Lead Time 6 hrs. Lead Time 12 hrs. | 0.500 ± 0.0000.500 ± 0.0000.500 ± 0.0000.500 ± 0.000 | 0.500 ± 0.0000.500 ± 0.0000.500 ± 0.0000.500 ± 0.000 | 0.500 ± 0.0000.500 ± 0.0000.500 ± 0.0000.500 ± 0.000 | 0.020 ± 0.0000.020 ± 0.0000.020 ± 0.0000.020 ± 0.000 | 0.500 ± 0.0000.500 ± 0.0000.500 ± 0.0000.500 ± 0.000 | 0.500 ± 0.0000.500 ± 0.0000.500 ± 0.0000.500 ± 0.000 |
| Gradient Boosting Lead Time 1 hr. Lead Time 2 hrs. Lead Time 6 hrs. Lead Time 12 hrs. | 0.728 ± 0.0600.728 ± 0.0670.694 ± 0.0620.686 ± 0.065 | 0.727 ± 0.0810.687 ± 0.0810.687 ± 0.0810.677 ± 0.081 | 0.810 ± 0.0030.778 ± 0.0070.775 ± 0.0090.758 ± 0.012 | 0.153 ± 0.0280.081 ± 0.0090.192 ± 0.0380.105 ± 0.010 | 0.476 ± 0.1690.264 ± 0.0640.634 ± 0.2150.287 ± 0.066 | 0.986 ± 0.0000.988 ± 0.0000.985 ± 0.0000.988 ± 0.000 |
| ROX Logistic Regression Lead Time 1 hr. Lead Time 2 hrs. Lead Time 6 hrs. Lead Time 12 hrs. | 0.675 ± 0.0960.563 ± 0.0940.568 ± 0.0880.506 ± 0.088 | 0.414 ± 0.0810.455 ± 0.0810.495 ± 0.0810.475 ± 0.081 | 0.525 ± 0.0000.506 ± 0.0000.537 ± 0.0000.487 ± 0.000 | 0.017 ± 0.0000.019 ± 0.0000.015 ± 0.0000.015 ± 0.000 | ------------ | 0.985 ± 0.0000.987 ± 0.0000.983 ± 0.0000.988 ± 0.000 |
| ROX-HR Logistic Regression Lead Time 1 hr. Lead Time 2 hrs. Lead Time 6 hrs. Lead Time 12 hrs. | 0.617 ± 0.0940.639 ± 0.0930.620 ± 0.0890.629 ± 0.089 | 0.455 ± 0.0810.404 ± 0.0810.465 ± 0.0810.374 ± 0.081 | 0.525 ± 0.0000.502 ± 0.0000.536 ± 0.0000.480 ± 0.000 | 0.016 ± 0.0000.017 ± 0.0000.015 ± 0.0000.015 ± 0.000 | ------------ | 0.985 ± 0.0000.987 ± 0.0000.983 ± 0.0000.988 ± 0.000 |