Department of Surgery
2026 Research Day
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Title:
Trends in Personal Protective Equipment Usage and its Relationship with Ocular Exposures Among Otolaryngology Residents

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Background:
The risk of ocular exposures in surgeons is always present, but studies have disagreed on their frequency. Additionally, little data exists on the relationship between personal protective equipment (PPE) use and exposure frequency. In light of increased hospital PPE requirements during the COVID-19 pandemic, this study aims to examine how PPE use both during and post-pandemic impacts the frequency of ocular exposures in current otolaryngology residents.

Methods:
A REDCap survey was distributed to all U.S. otolaryngology residents in the 2024-25 academic year. Questions included number of ocular exposures experienced in each Postgraduate Year (PGY), PPE use during the pandemic (2020-23) in the Operating Room (OR) and at bedside, PPE use in the OR post-pandemic (2023-25), and settings in which exposures occurred. PPE use in the OR and total ocular exposures during and post-pandemic were compared. Exposures in those with low PPE use in the OR and at bedside during the pandemic and in the OR post-pandemic were compared to those with respective high PPE use. Multivariate analysis characterized the relationship between ocular exposures and PPE use in the OR and at bedside during the pandemic, PPE use in the OR post-pandemic, and PGY level.

Results (or Preliminary Results):
50 out of 94 respondents (53.2%) reported ocular exposures, most often occurring during bedside procedures (58%), followed by handling of bodily fluids (30%). There was no difference in OR PPE usage during the pandemic versus post-pandemic ($p = 0.620$). Negative binomial regression in those PGY3 and up showed no difference in the number of exposures during the pandemic versus post-pandemic (IRR 1.35 95% CI 0.55-3.27 $p = 0.512$). In those PGY3 and up, negative binomial regression showed that low PPE usage in the OR during the pandemic was associated with significantly higher levels of exposure (IRR 7.40, 95% CI 2.66-20.60 $p < 0.001$), but the odds of exposure were not increased (OR 6.46, 95% CI 0.75-55.86, $p = 0.074$).

Conclusions (or Preliminary Conclusions):
While there was no significant difference in OR PPE usage during and post-pandemic, there was a 35% increase in ocular exposures in the OR and at bedside post-pandemic. While not statistically significant, these findings could suggest trends of PPE laxity after a period of strict requirements. Low rates of OR PPE compliance was associated with increased ocular exposures, illustrating the importance of eye protection in both OR and bedside settings.