Supp Fig. 1| Spearman's correlations between relative abundance and COVID-19 severity. COVID-19 Severity was categorized into three ordinal levels: controls assigned a value of 0, moderate COVID-19 cases assigned a value of 1, and critical COVID-19 cases assigned a value of 2.
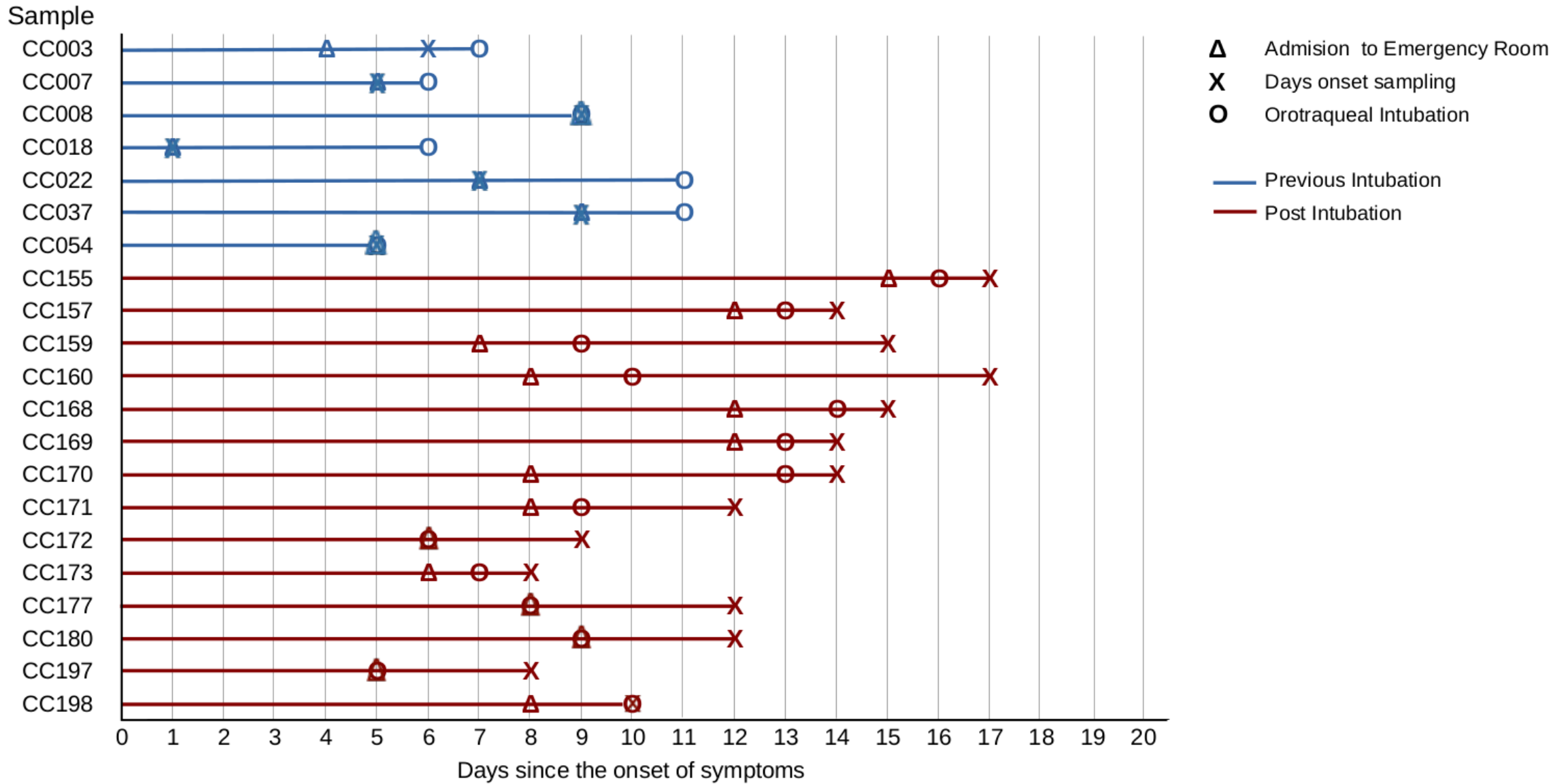
Supp Fig. 2| Study timeline illustrating key events for study participants, including the day of admission to the emergency room, the day of sample collection, and the day of orotracheal tube placement.
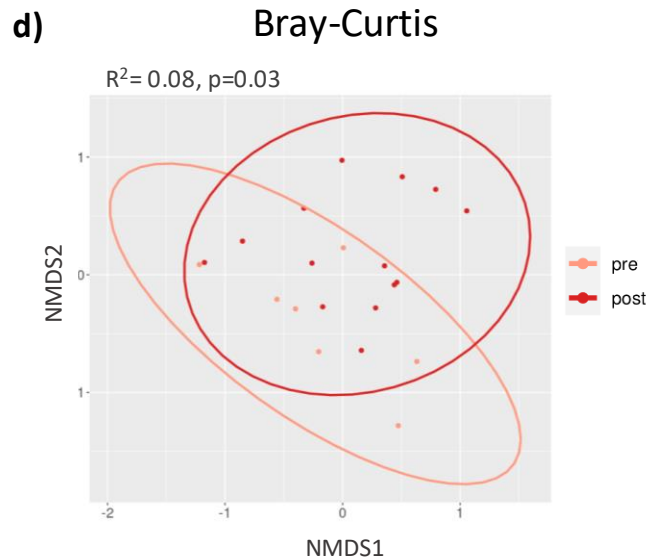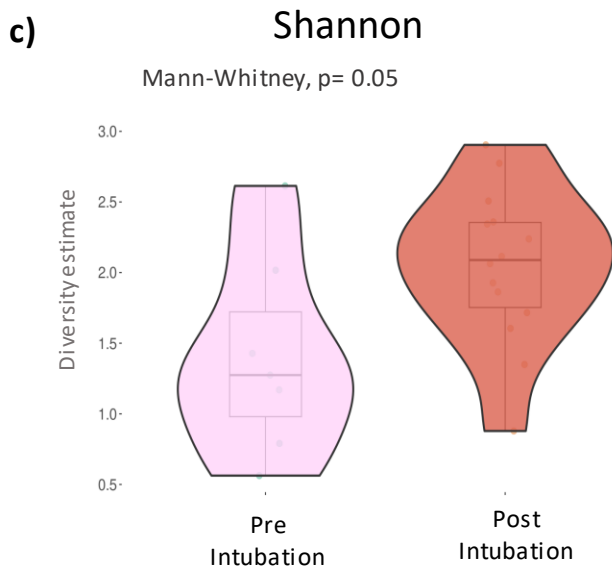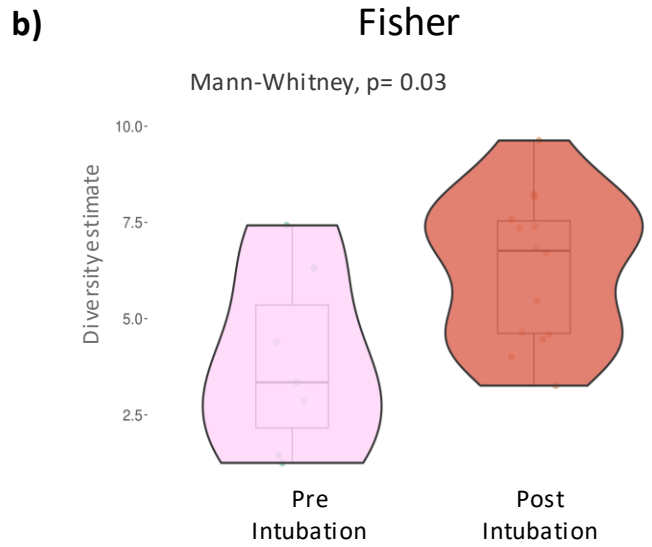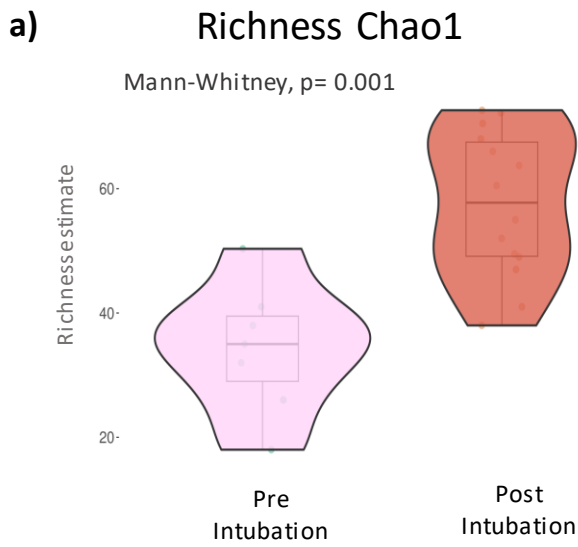
Supp Fig. 3| Richness and alpha diversity indices. a) Richness Chao1 index, b) Fisher index, and c) Shannon index show a significant difference between the pre and post orotracheal tube placement. d) Beta diversity of the nasopharyngeal microbiome among pre and post-intubation. Significance was determined using the Mann-Whitney test with a 95% confidence interval. The NMDS plot is based on Bray-Curtis dissimilarity, and PERMANOVA statistics indicate a significant difference among the groups. Each color represents a specific analyzed group.
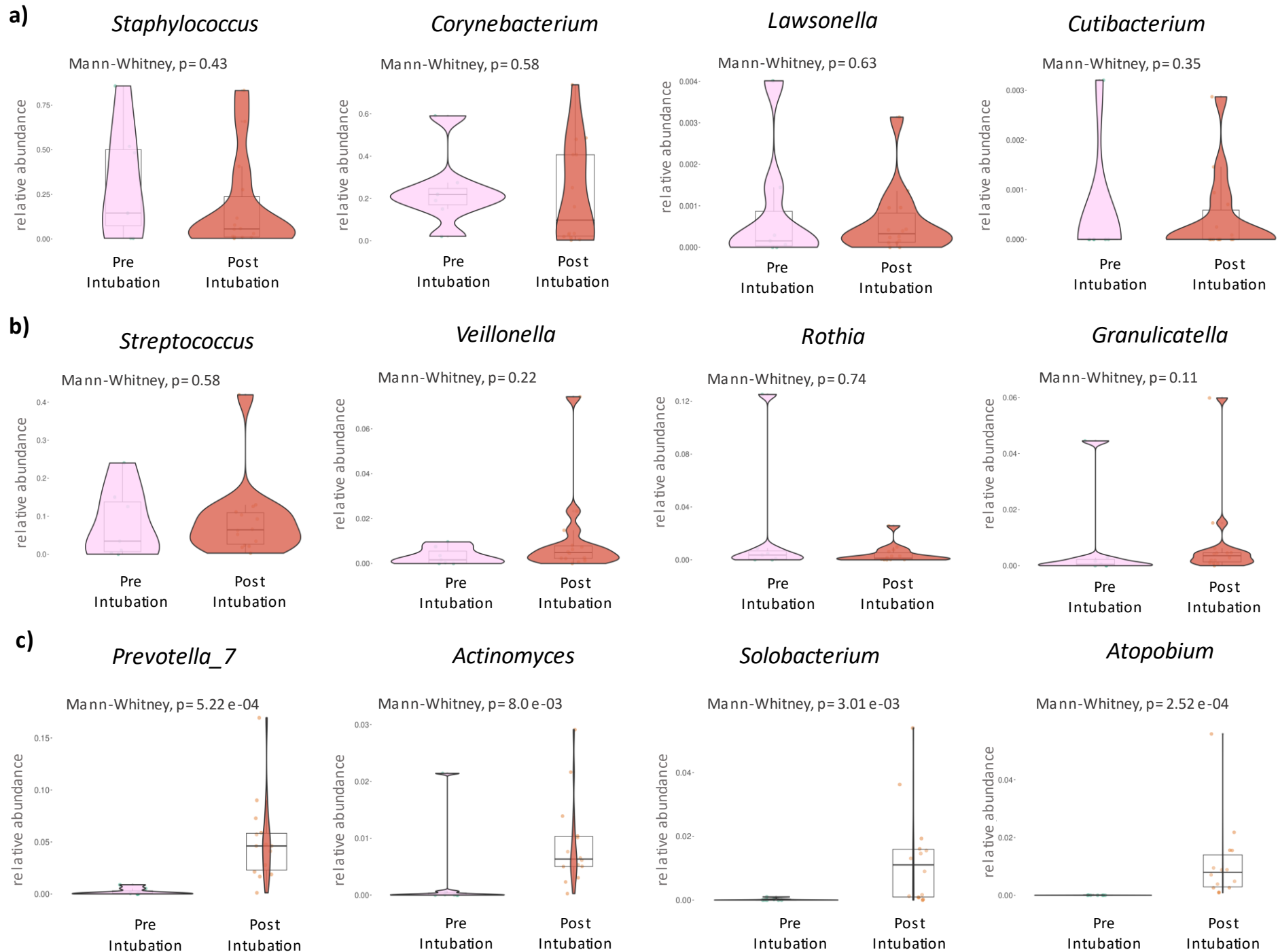
Supp Fig. 4 | Differences in the relative abundance of bacterial genera associated with orotracheal tube placement. a) Violin plot displaying the relative abundance of *Staphylococcus, Corynebacterium, Lawsonella,* and *Cutibacterium* genera. No significant differences were observed between the pre and post-intubation groups. b) Genera detected with significance in critically ill COVID-19 patients but without significant differences by intubation. c) Microorganisms increased after the intubation procedure. Significance was determined using the Mann-Whitney test with a 95% confidence interval.