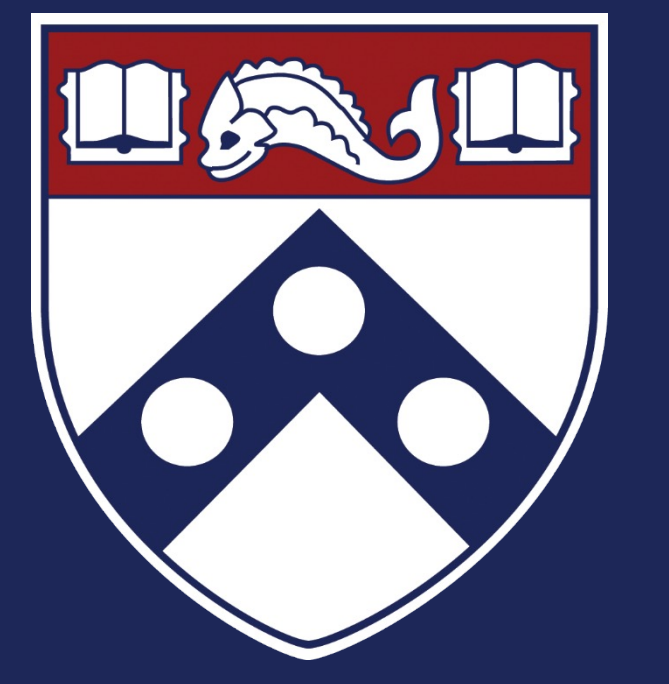


Otolaryngology Case Cancellation and Rescheduling Trends in the Covid-19 Era



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Introduction

At the onset of the Covid-19 pandemic, anticipation of an influx of patients requiring high-level care led healthcare systems to respond with implementation of protective protocols and cancellation of elective case to preserve crucial resources. Over time, new SAR-COV2 variants emerged and pre-operative Covid-19 testing became standard to protect patients and providers. Few studies have reported on otolaryngology case cancellation rates and rescheduling delays during this time. Here, we perform a retrospective review to summarize cancellation trends amongst otolaryngology cases at a high-volume academic center.

Study Objectives

- Elucidate impact of Covid-19 on ENT surgery cancellations over the course of the pandemic
- Determine differential effect of COVID-19 pandemic amongst otolaryngology subspecialties
- Characterize sequelae of cancelled surgeries throughout the course of the pandemic

Methods

Study Population

All patients receiving surgery from the Department of Otorhinolaryngology – Head and Neck Surgery at the University of Pennsylvania Health System between March 2020 to August 2022 were included in this study.

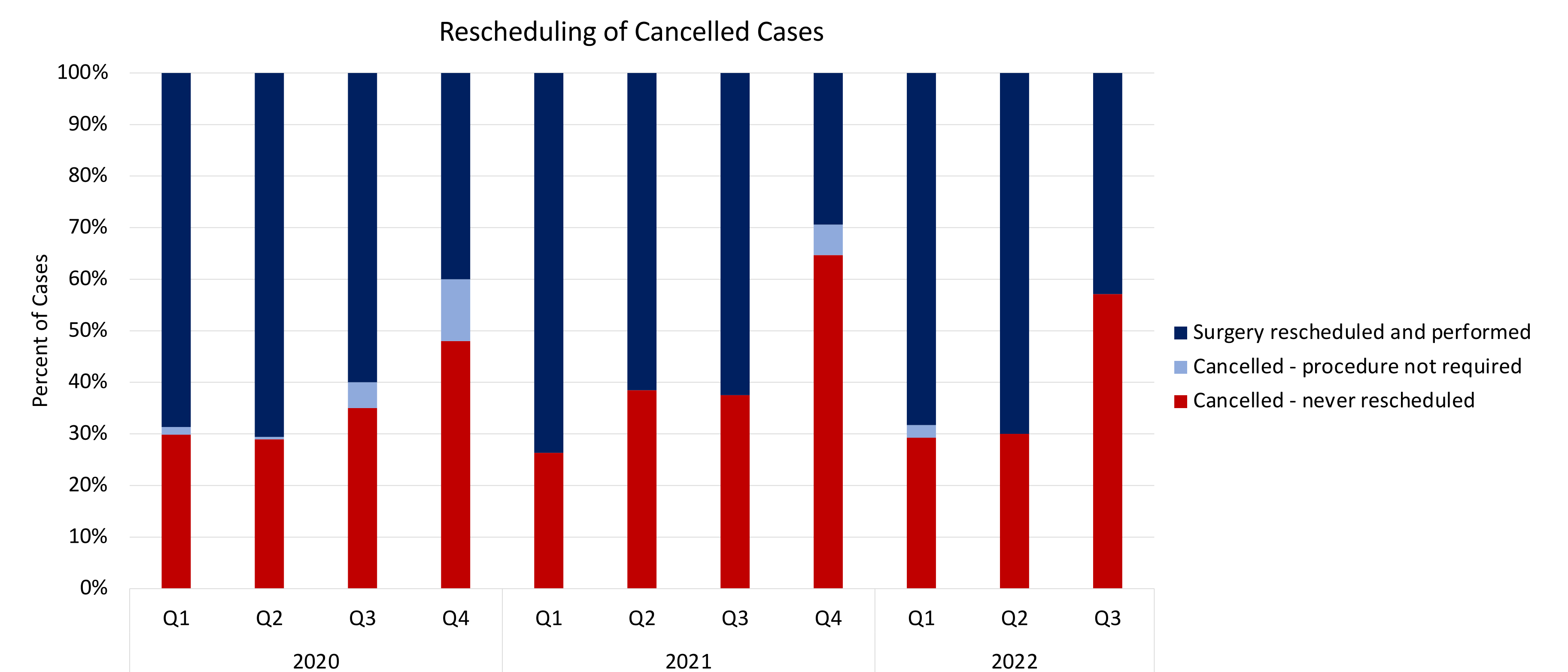
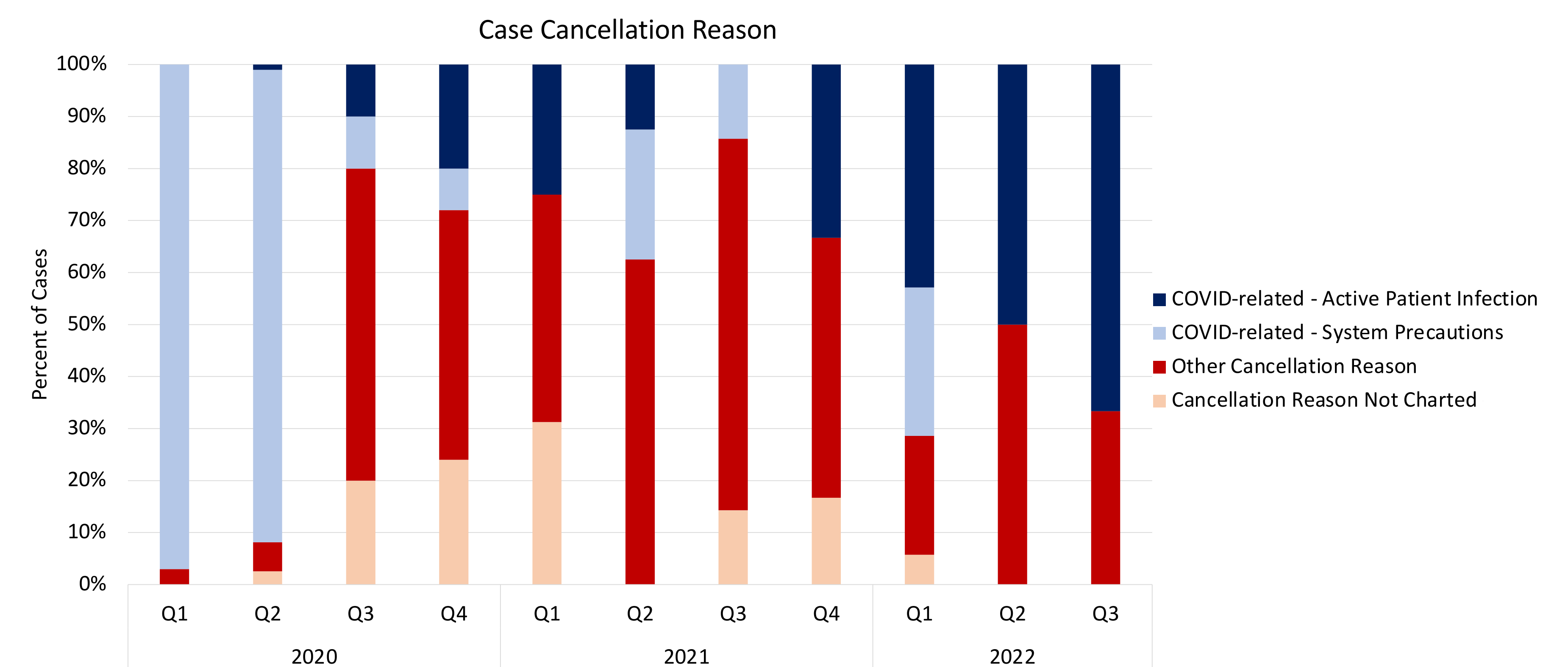
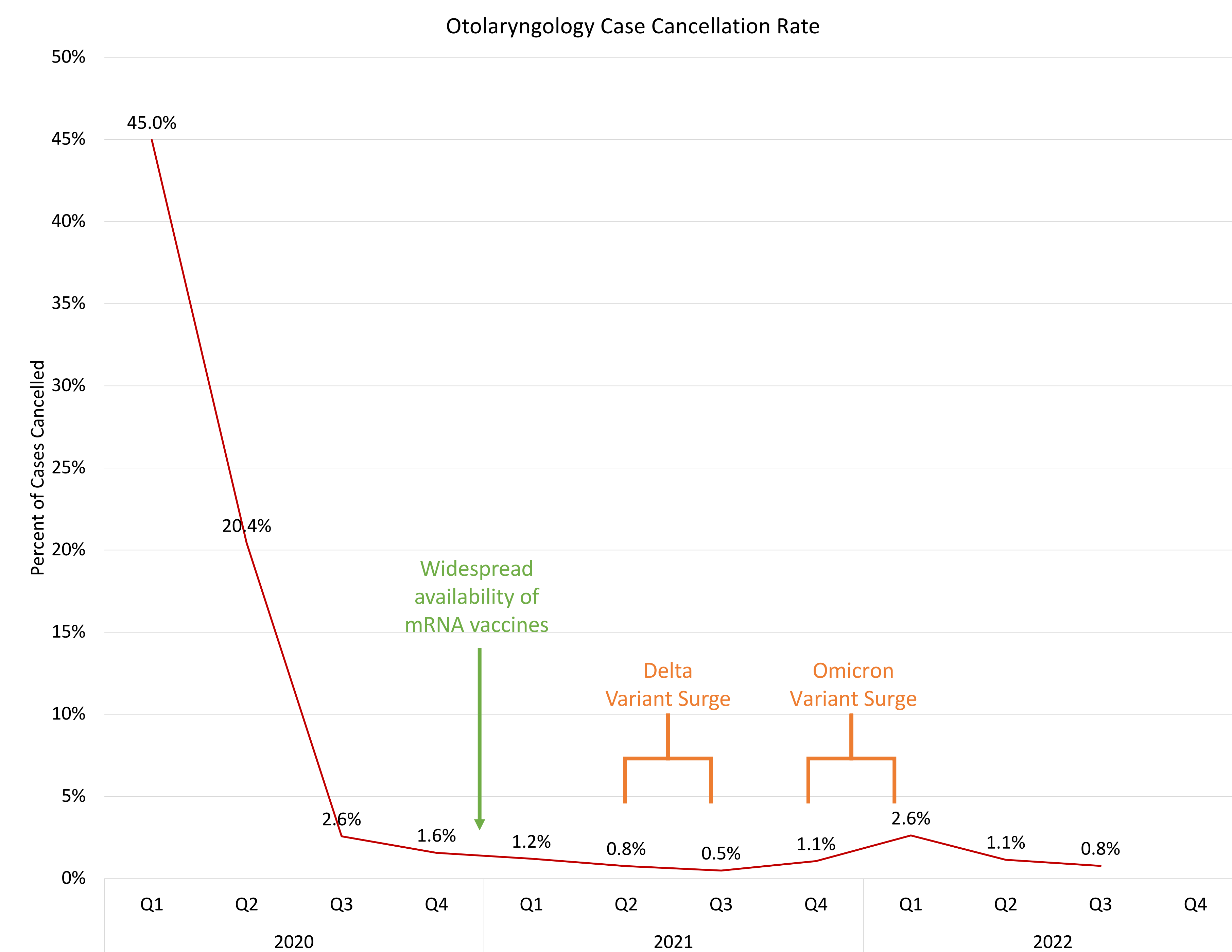
Data Collection

Original date of surgery, surgery completion status, reason for cancellation, Covid-19 test dates and results, rescheduled surgery dates, and subspecialty category of procedure were abstracted from review of the electronic medical record. Date of original surgery were categorized by calendar quarter to better understand the effects of changing policies regarding pre-procedure Covid-19 testing, vaccine availability, and system-level precautions.

Analysis

Statistical analyses were performed in R. Graphs and figures were created in Excel.

Figures



Results

14,162 cases met inclusion criteria with 195 cancelled cases. In the 15 weeks before March 15, 2020, cancellation rate was 0.5%. In the second half of March, cancellations rose to 45% and remained elevated at 20% in Q2 2020. Cancellations declined to [pre-pandemic levels, 0.5%, by Q3 2021, before rising to 2.6% in Q1 2022 and declining to 0.8% by August 2022.

From March to Q2 2020, 97% of cancellations were due to health system precautions. By Q4 2020, 52% were Covid-19 infection or exposure related, declining to 13% in Q3 2021 before rising to 47% in Q4 2021. From Q1 to August 2022, 53% remained Covid-19 related (infections, exposures, system precautions).

Median rescheduling delay pre-pandemic was 21 days compared to 63 after March 2020. Facial plastics had the shortest median rescheduling delay while the longest was in General ENT (median 38.5 days (IQR: 25-73) vs 92.5 days (52-170)). One-way ANOVA analysis and post hoc test showed significant differences between Otolaryngology and General ENT rescheduling ($p=0.024$, mean difference = 20.5 days; 95% CI = -39.4 - 1.6). **Since March 2020, 33% of cancelled cases were not rescheduled; 14% were H&N surgeries.**

Discussion

An initial surge of cancellations at the onset of the Covid-19 pandemic reflects the wider shutdown of non-essential services¹. Over time, implementation of protective protocols, such as pre-procedure testing, helped restore surgical services, along with widespread vaccine availability in early to mid 2021, which saw case cancellation rates fall back to pre-pandemic levels²⁻⁴. Despite of these measures, new SARS-COV2 variants continue to cause increases in cancellations (i.e. Q4 2021 - Q1 2022 during Delta and Omicron surges)⁵⁻⁶. Since March 2020, time to rescheduling of cancelled cases was found to take three-fold longer than before the pandemic. Of note, 14% of cancelled H&N oncologic surgery cases were never rescheduled. This finding highlights a patient population that is particularly vulnerable to both pandemic-related surges and system-driven policies given the urgency of such surgeries. Importantly, delays in care have been shown to historically be associated with poorer prognoses and advanced disease stage at presentation in head and neck cancers⁷⁻⁹.

These findings may be limited by sampling bias and EMR coding accuracy. This study evaluated factors impacting otolaryngology case cancellations at one hospital system, so findings may not be generalizable to other specialties or institutions. Ongoing work to develop strategies to reduce cancellations, encourage timely rescheduling and enhance operational resiliency in anticipation of future Covid-19 waves or pandemics should be considered to minimize delays in patient care¹⁰⁻¹¹.

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