

# Enhancing Patient Comfort: Reducing Anti-Anxiety Medications with Open Face Masks and SGRT in Head and Neck Treatments

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# Disclosure

VisionRT is covering travel expenses for this presentation, however, this support does not influence the content, or opinions expressed during this presentation.

# Agenda

- About DFBWCC
- Transitioning to Open Face Masks + SGRT
- H&N Open Face Mask + SGRT Pilot: Data Analysis
- H&N Pilot Data Results
- Review of Clinical Impacts
- Reduction in Prescribing Anti-Anxiety Medications Data Review
- Acknowledgements



# Dana-Farber/Brigham & Women's Cancer Center

- Boston, MA, USA
- FY 2023
  - Department treated ~50k patients
  - H&N patient population was ~6k pts
- **Machines:**
  - 4 TrueBeam- *all w/ a SGRT system*
  - 2 Clinac iX- *1 machine w/ a SGRT system*
  - 1 Ethos/Halcyon- *in-bore SGRT system*
  - 1 MR-Linac
  - 3 CT simulators
  - 1 MR Machine
  - Cobalt-60
  - 2 HDR units



# Transitioning to Open Face Masks + SGRT

**April 2021**

Trialed Open-Face Masks + SGRT for C-spine patients due to an increase in set up issues

**July 2021**

*Standard practice Open-Face Masks with SGRT for all C-spine SBRT patients*

**February 2023**

Increase in set up issues for H&N patients, team piloted Open-Face Masks with SGRT

**July 2023**

*Standard practice Open-Face Masks with SGRT for all H&N patients*





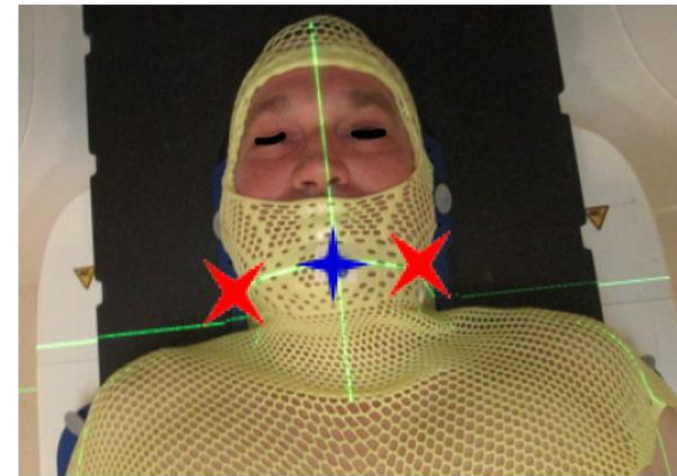
# Mask Evolution

# Open Face + SGRT Workflow

ROI- Ensure covers entire opening, not on mask

*Inside the Room:*

1. Patient lies on couch, rests in head-cup
2. Turn on AlignRT
3. RTTs move table to coordinates at isocenter
4. Move patient head/shoulders into position with deltas & postural video
5. Put on mask
6. Shift table so translational deltas are in tolerance.
7. Move head to align rotational deltas (pitch, roll, rotation)
8. Shift table again to get translational deltas into tolerance.



# H&N Open Face Mask + SGRT Pilot: Data Analysis

June – Dec  
2022

## Retrospective Closed Mask Data Collection

Sample size: 52 patients

- Average acquiring image to Beam on Time
- Average Shoulder Pulls
- Average MD Image Change Requests
- Total Fractions

March – May  
2023

## Open Face Mask with AlignRT Data Collection

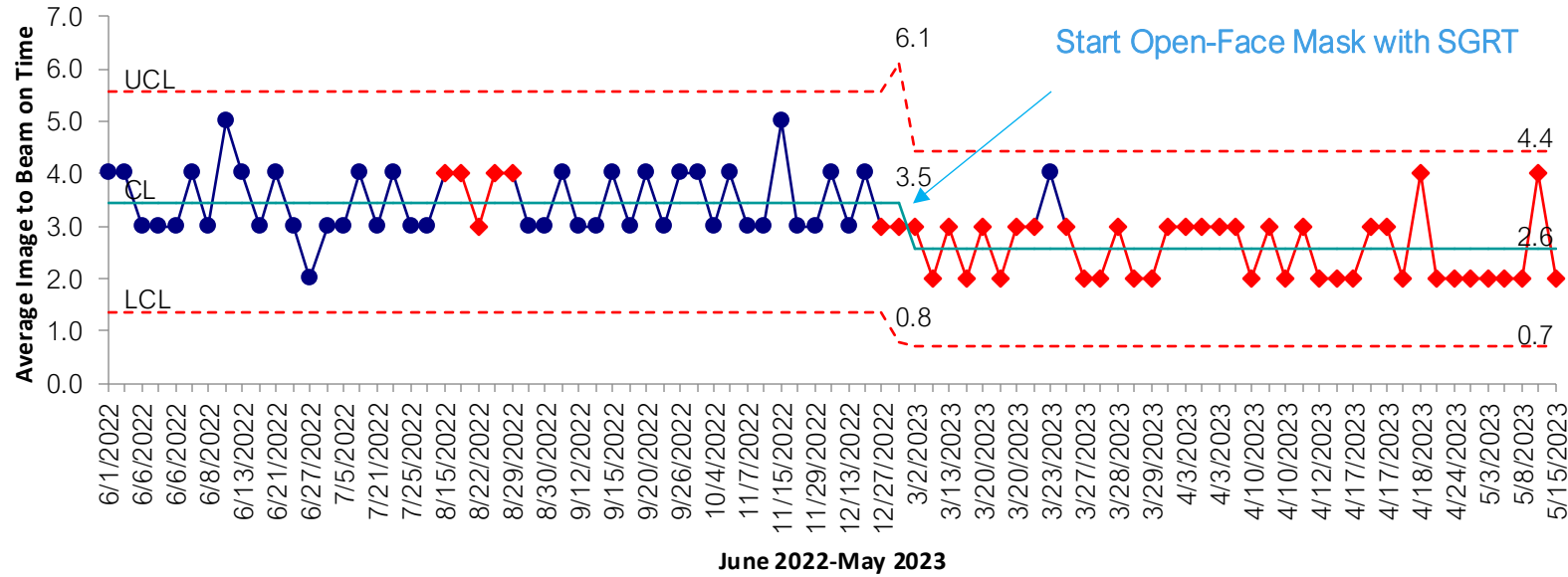
Sample size: 39 patients

- Average acquiring image to Beam on Time
- Average Shoulder Pulls
- Manual Adjustments
- Shifts
- Average MD Image Change Requests
- 6DoF capabilities
- Total Fractions



# H&N Pilot Data Results

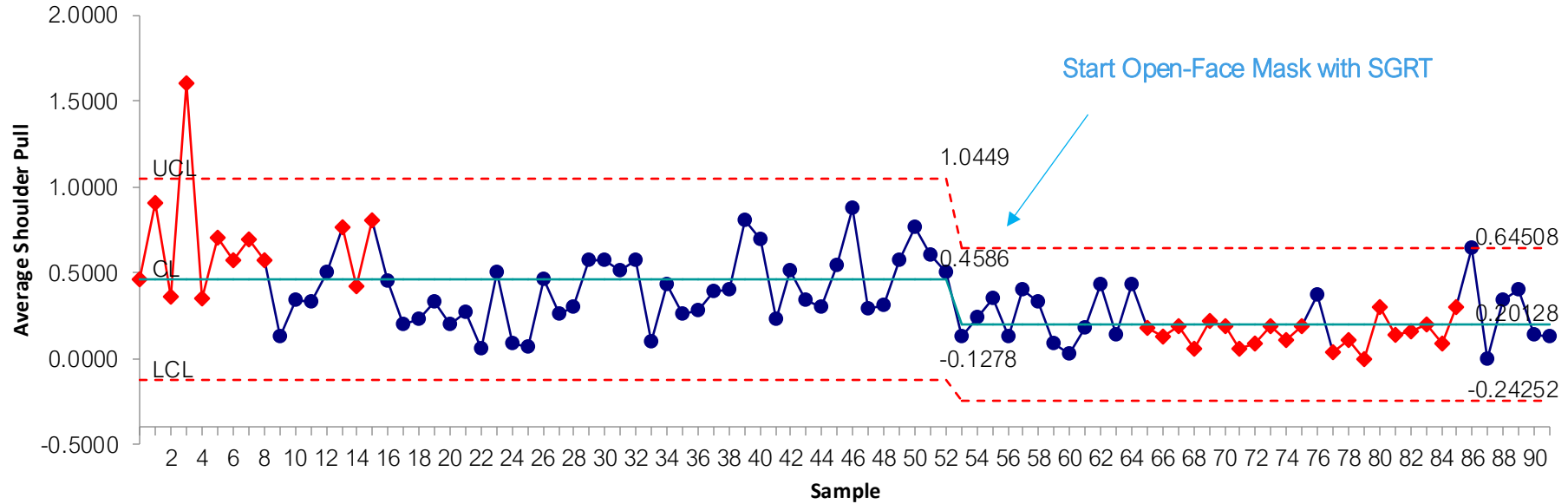
## Average Image to Beam on Time- XmR



Comparison of average time from first image to beam-on time shows a reduction from 3.5 minutes to 2.6 minutes.

# H&N Pilot Data Results

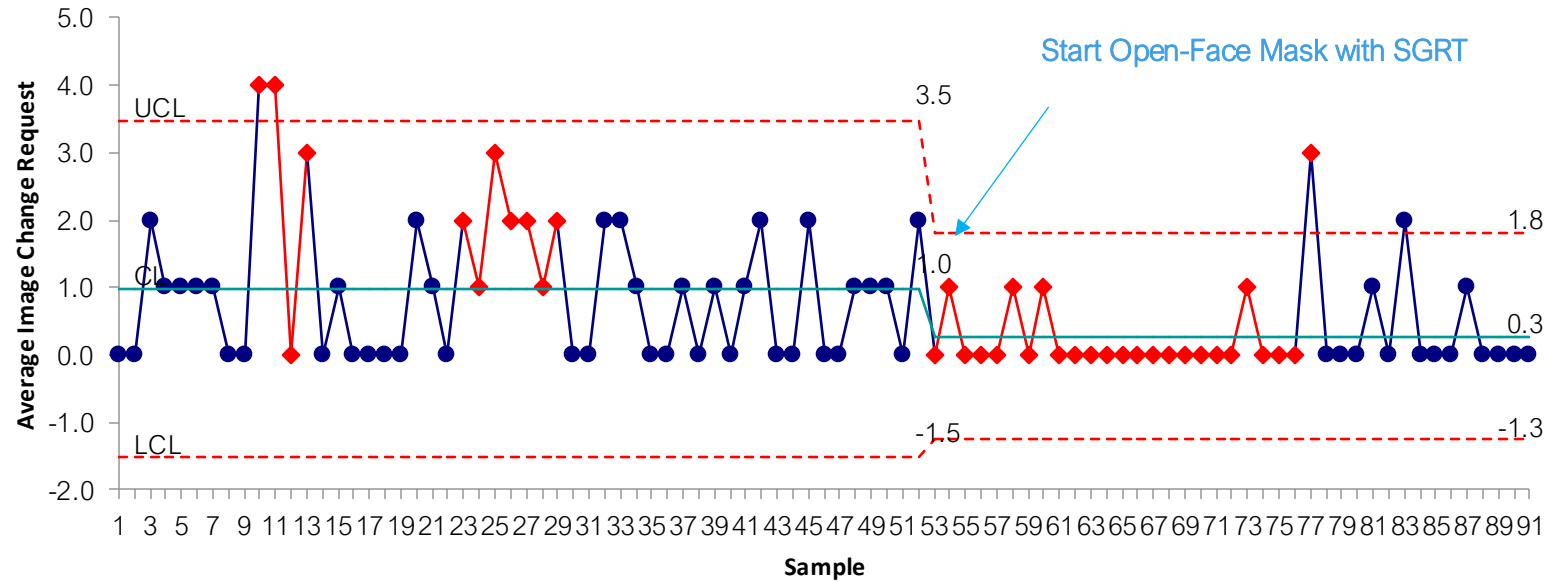
## Average Shoulder Pull (Green Mask vs. Open Face Mask)- XmR



Manual shoulder pulls decreased by 50%

# H&N Pilot Data Results

## Average Image Change Request (Green Mask vs. Open Face Mask) XmR



Comparison of average image change requests per patient course reveals a decrease in frequency from 1.0 to 0.3 requests per patient course.

# Review of Clinical Impacts

## Reduction in Image to Beam on Time

*Less repositioning + Less repeat imaging = ALARA Compliant + Increase in Patient Experience*

## Reduction in Manual Shoulder Pulls

*Less Repeat Imaging + Faster set ups = ALARA Compliant + Increase in Patient Experience*

## Reduction in MD Image Change Requests

*More reproducible set ups*

## Intrafraction Motion Monitoring

*Observed real-time patient movements*

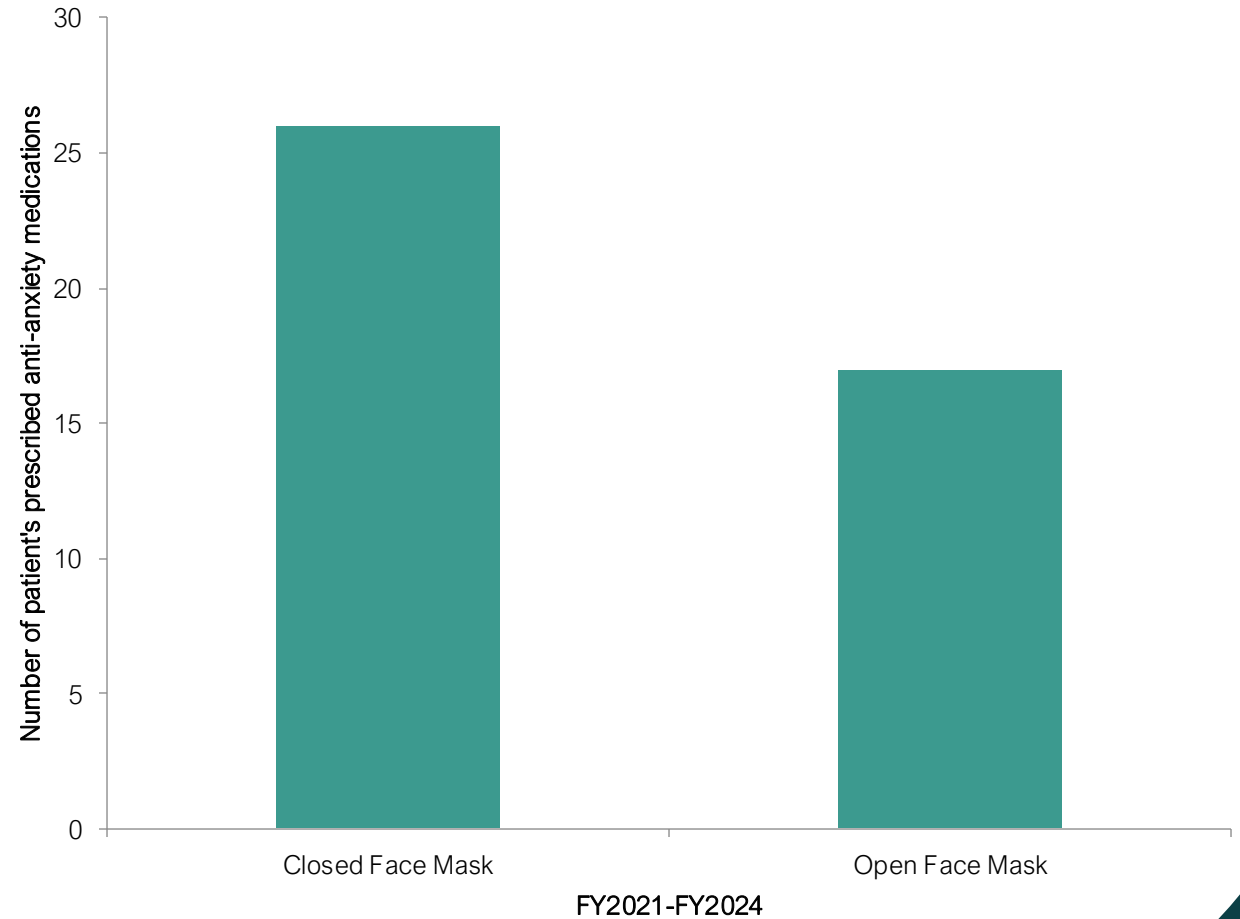
## Improved Patient Experience

*More "tolerable" treatment set up*

# Reduction in Prescribing Anti-Anxiety Medications

There was a notable reduction in the prescribing of anti-anxiety medications from FY2021 through FY2024 following the introduction of open face masks with AlignRT.

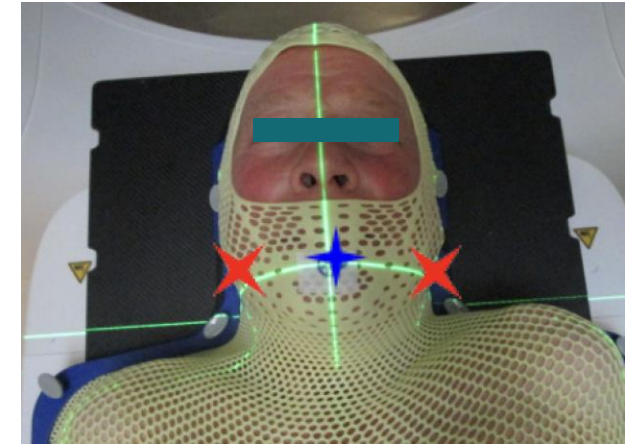
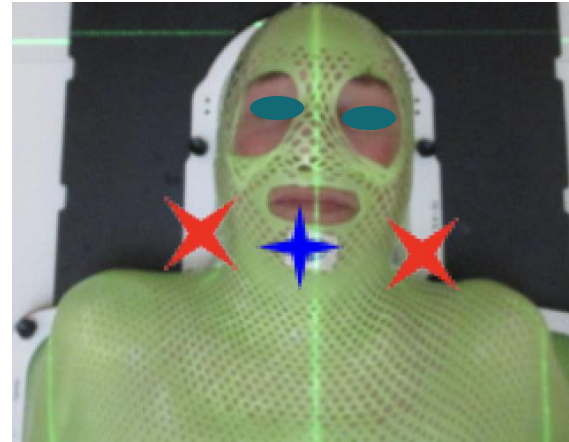
Masks used for H&N Patient's Prescribed Anti-Anxiety Medications 2021-2024



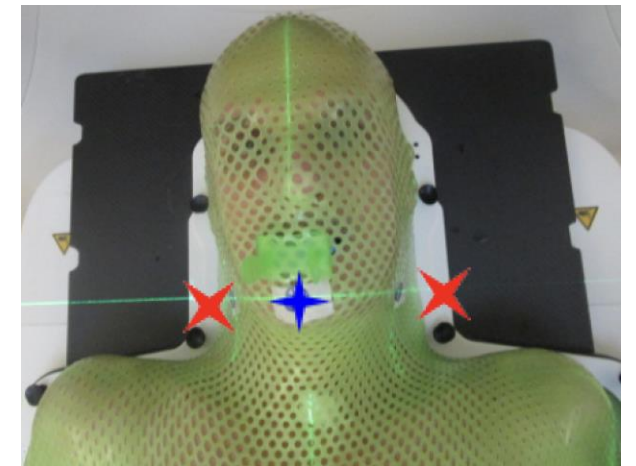
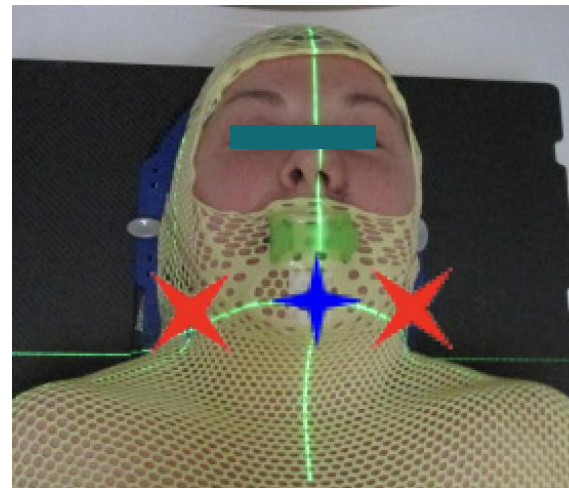


# Example of Mask Types with/without bite blocks

## Without Bite Block



## With Bite Block

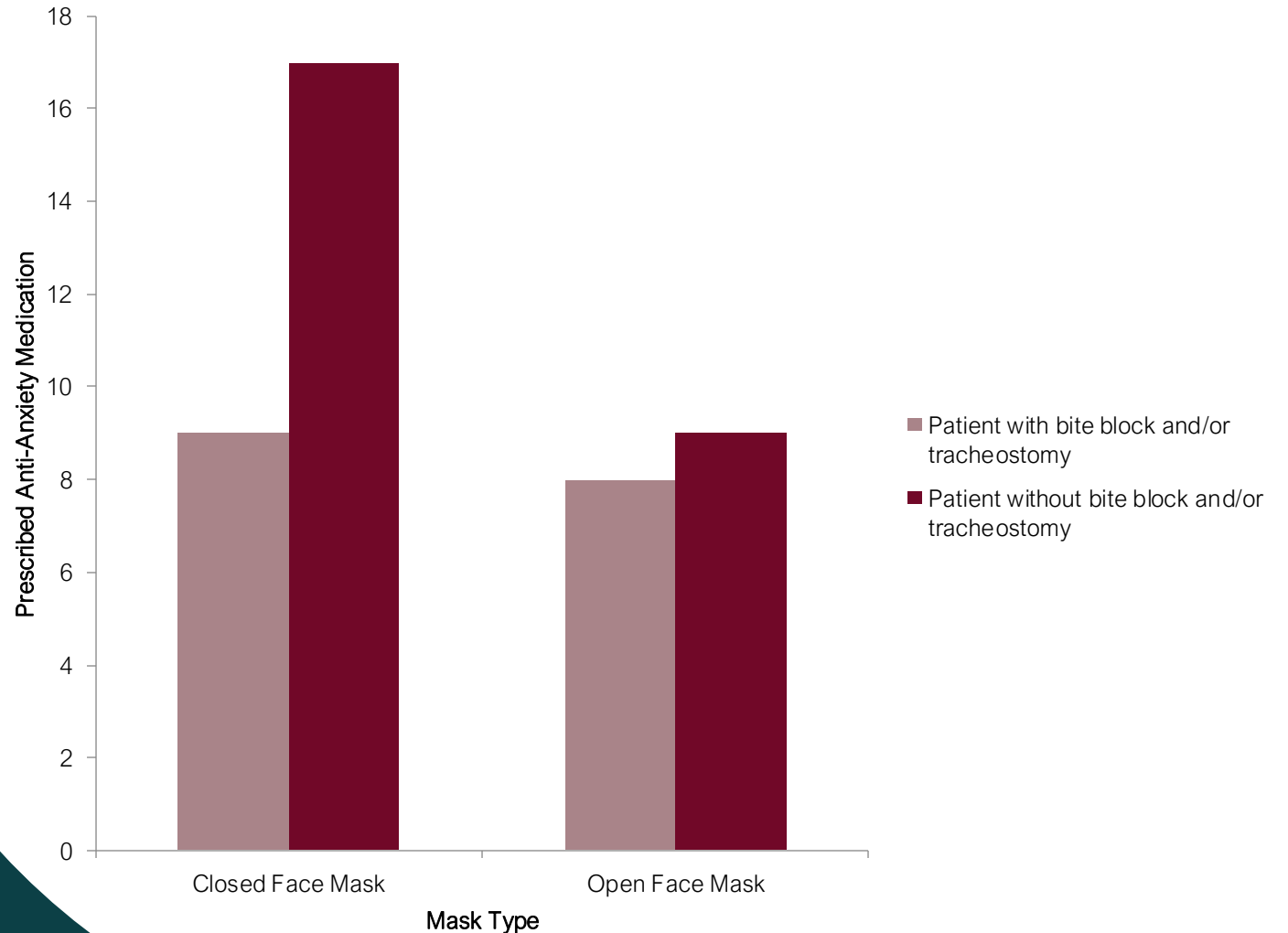


**Patients who required medication while using a closed face mask, without the addition of a bite block and/or tracheostomy, constituted 66% of the total patient population.** In contrast, **patients who required medication while using an open face mask, also without the addition of a bite block and/or tracheostomy, accounted for 50% of the total patient population.**

This data suggests that the **closed face mask alone was often a source of anxiety and discomfort for patients.**

With the introduction of open face masks, we are observing a reduction in the number of patients needing medication when using the mask alone.

Comparing Prescribed Anti-Anxiety Meds with Mask Type with and without the addition of a bite block and/or tracheostomy



# Why is reducing anti-anxiety medications important?

**Side Effects** of these medications can have significant effects, including drowsiness, dizziness, confusion, and impaired coordination. With these types of side effects, **we cannot have patients drive home after taking anti-anxiety medication. This requires a patient to coordinate for another person to transport them to and from their appointments.** This is burdensome on patients with limited support and frustrating for patients who would like to maintain independence.

*Anti-anxiety medication side effects can take 5-8 hours to wear off.*

**The timing of administration matters for patients receiving anti-anxiety medication. This can cause issues for both patients and the care team.**

- *For patients*, the medication can take 20-30 minutes to take effect which can mean they need to arrive early to the department to coordinate administration of the medication.
- *For the care team*, if the treatment machine is running behind or down and a patient has already taken their medications this can cause a lot of added stress and coordination to get them treated in a timely manner.





# Acknowledgments

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**Thank you!**

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