

## Background and Introduction

- Complex reconstructive surgeries using donor bone, skin, fat, fascia and muscle are associated with extended hospitalization, complications and pain in head and neck cancer patients.
- Traditionally opioid based medications are used. The amount and duration vary.
- Growing concern over opioid use and addiction has prompted adoption of multimodal, opioid-sparing pain management strategies

## Aim

To determine if patients undergoing osseous microvascular free flap reconstruction of head and neck defects have higher inpatient pain requirements compared to those undergoing non-osseous reconstruction.

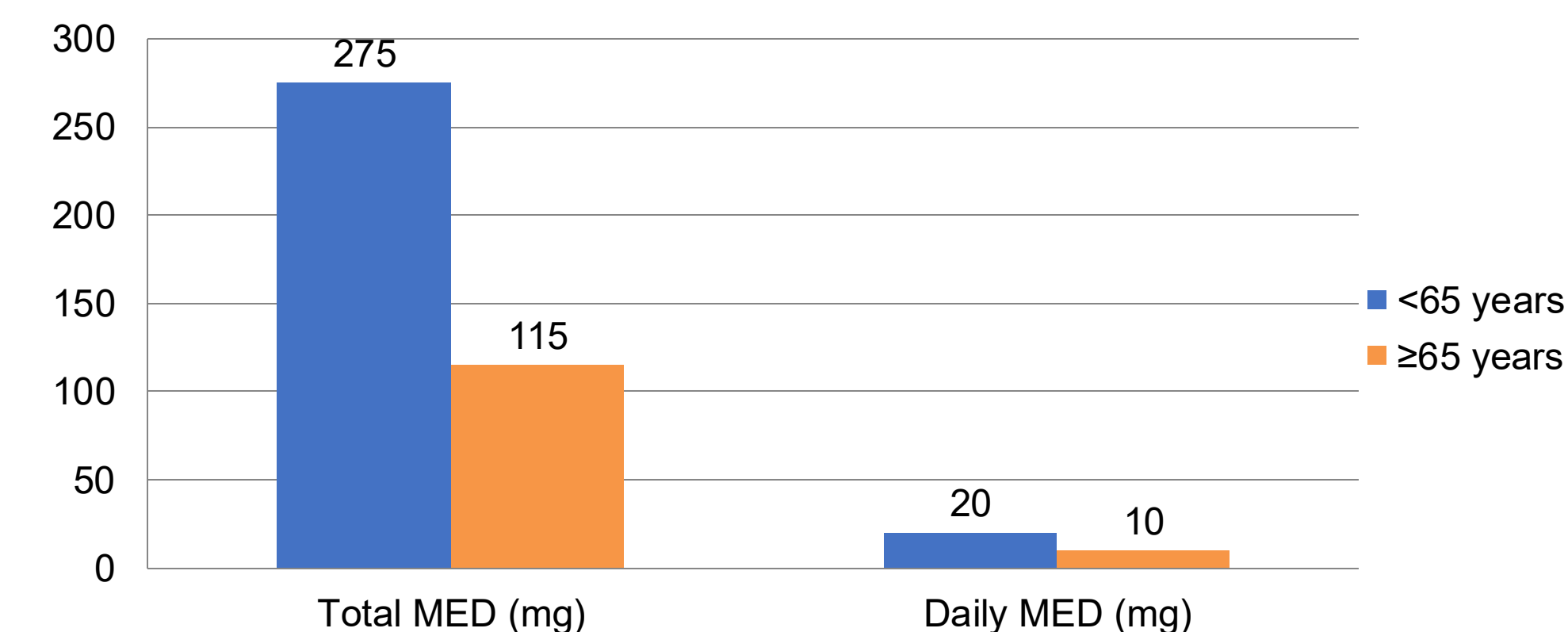
## Methods and Materials

- Retrospective chart review
- Inpatient narcotic were converted to morphine-equivalent doses (MEDs) for comparison.

## Results

- **Demographics:**
  - N=318; 207 male (65%; mean age 64 years.
  - Reason for surgery: Cancer (81%)
- **Osseous vs. Non-osseous flaps:**
  - Total MED: **224.5 vs. 173.9 mg**
  - Daily MED: **16.4 vs. 17.5 mg** ( $p=0.67$ , NS)
- **MMA protocol:**
  - Daily MED decreased from **25.9 → 11.2 mg**
  - **56% reduction** ( $p<0.0001$ )
- **COVID-19 visitor restrictions:**
  - Total MED: **234.6 vs. 181.3 mg** ( $p=0.16$ , NS)
  - Daily MED: **20.6 vs. 16.9 mg** ( $p=0.25$ , NS)

	Osseous (n=93)	Non-Osseous (n=225)	p values
<b>Total MME</b>	224.48	172.88	0.13
<b>MME/day</b>	16.38	17.56	0.67
<b>Age, years (mean)</b>	64	64	1
<b>Operative Time, minutes (mean)</b>	738	636	< .00001
<b>Neck Dissection</b>			0.46
Bilateral	19 (20%)	61 (27%)	
Unilateral	35 (38%)	76 (34%)	
None	39 (42%)	89 (40%)	
<b>Tracheotomy</b>			0.00001
Yes	85 (91%)	134 (59%)	
No	8 (9%)	91 (41%)	
<b>History of XRT</b>			0.13
Yes	29 (31%)	90 (40%)	
No	64 (69%)	135 (60%)	
<b>Opioid PCA</b>			0.03
Yes	49 (53%)	90 (40%)	
No	44 (47%)	135 (60%)	
<b>MMA Protocol</b>			0.16
Yes	43 (46%)	124 (55%)	
No	50 (54%)	101 (45%)	
<b>OR Takeback</b>			0.07
Yes	19 (20%)	28 (12%)	
No	74 (80%)	197 (88%)	



**Figure 1. Age Related Differences in Opioid Requirements. P< 0.01**  
Patients < 65 required 137% more total opioids and 59% more daily opioids compared to older adults.

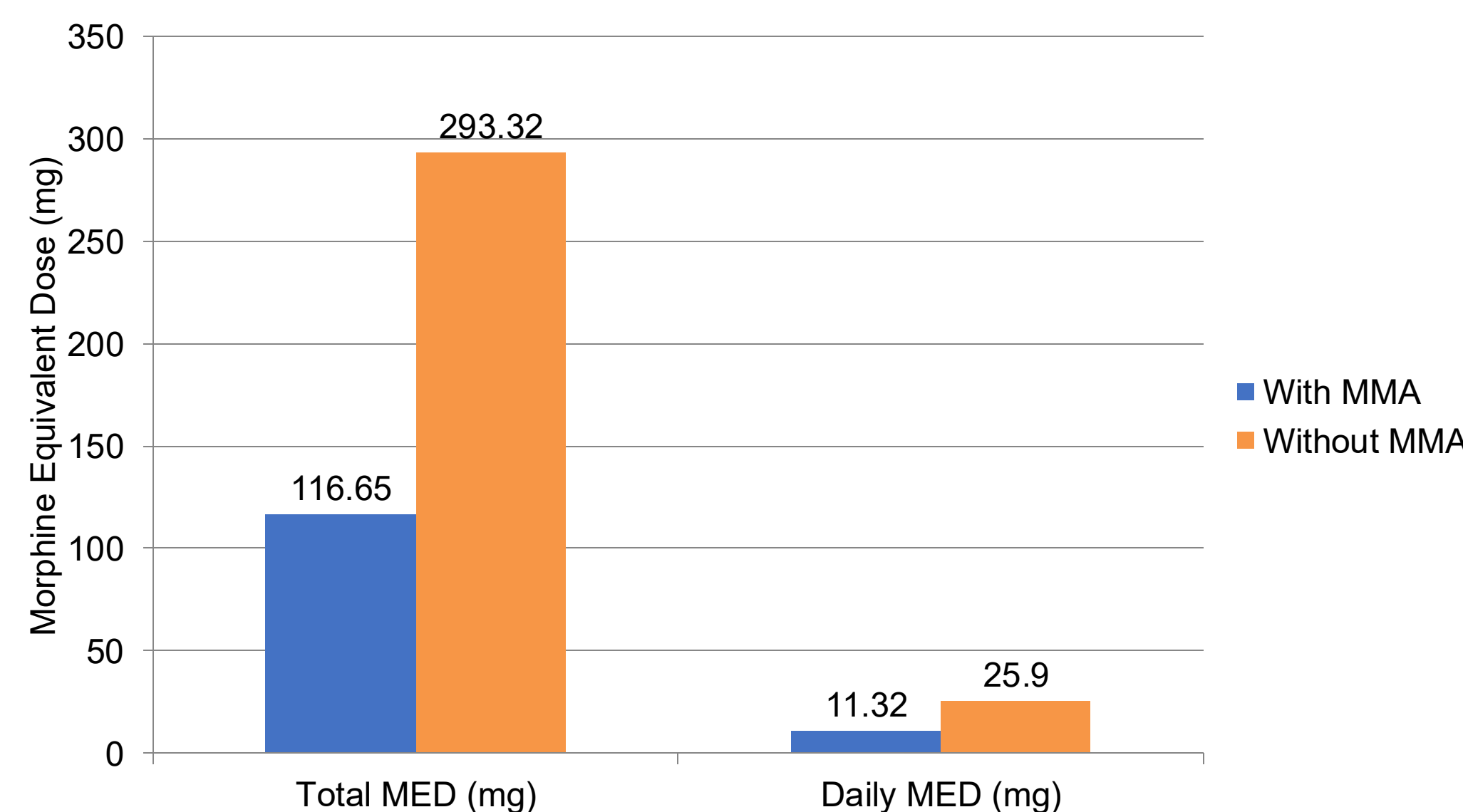
## Discussion

- There is no significant difference in post-operative inpatient opioid pain requirement for patients undergoing osseous microvascular free flap reconstruction compared to non-osseous reconstruction.
- The implementation of an MMA protocol at our institution was associated with significantly decreased inpatient narcotic use.
- There was no significant difference in inpatient opioid use observed during the restricted visitor policy during the COVID-19 pandemic.

## Conclusion

A standardized MMA protocol with age-adjusted strategies may significantly reduce post operative opioid use in head and neck reconstruction patients.

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**Figure 2. Impact of the MMA on Opioid Requirements. P< 0.0001.**  
MMA reduces total opioids consumption by 60.2% and daily consumption by 56.3%.