

MANAGEMENT OF PATIENTS BURNED WHILE SMOKING ON OXYGEN: INTUBATION RATES, OUTCOMES, AND ASSOCIATED FACTORS

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BACKGROUND

- More than 800,000 Americans today are prescribed home oxygen therapy for conditions such as COPD.¹
- Burns suffered while smoking on oxygen are a common source of referrals for our Burn Center, compromising 5.3% of inpatient transfers.
- Current literature is limited but shows that patients are often intubated unnecessarily.
- Reported mortality rates vary widely, from 5% to 50%.^{1,2}

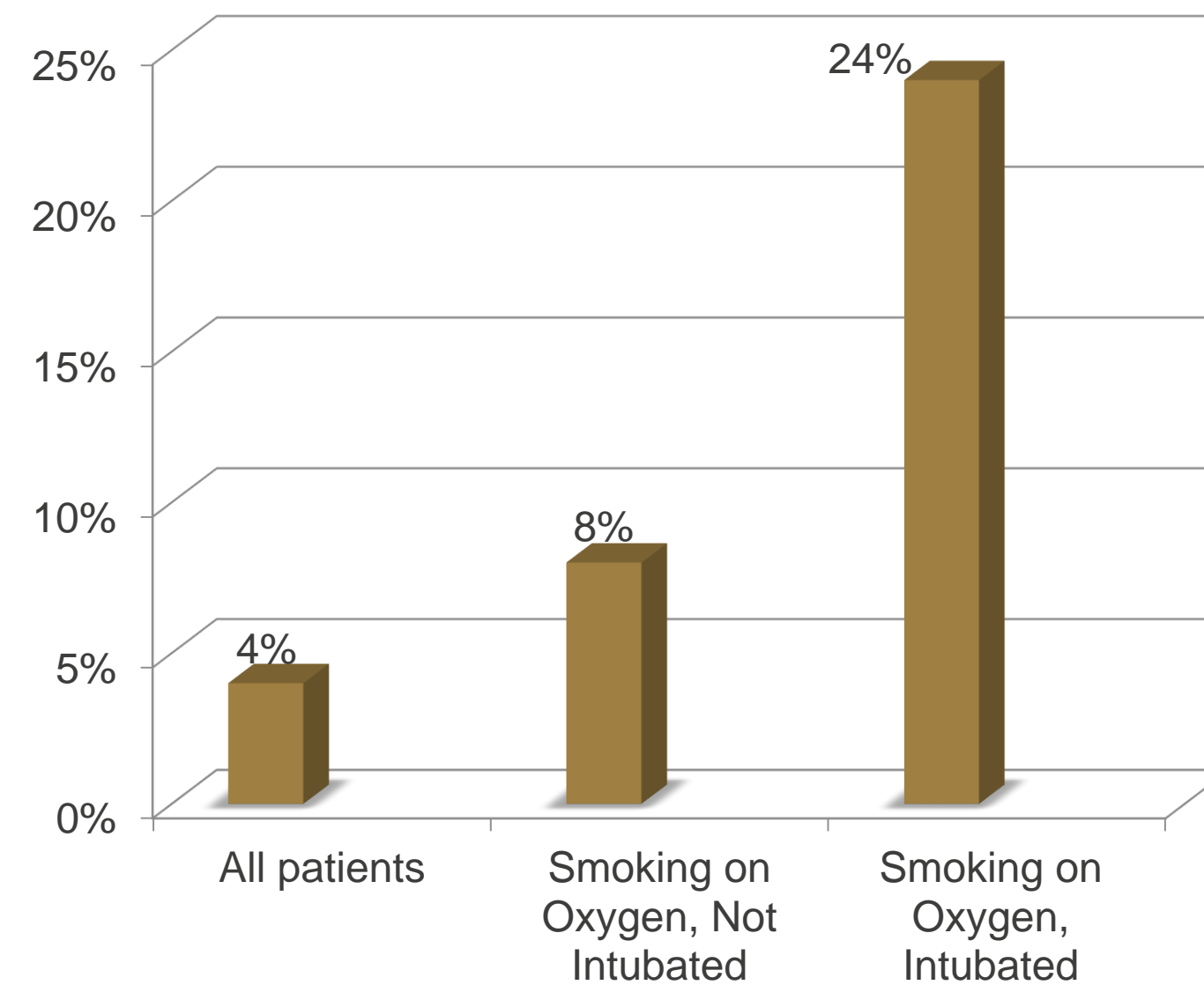
OBJECTIVES

- Identify trends in demographics, airway management, and outcomes to guide practice in caring for this unique patient population.
- Use this knowledge to modify outreach approach for pre-Burn Center providers.

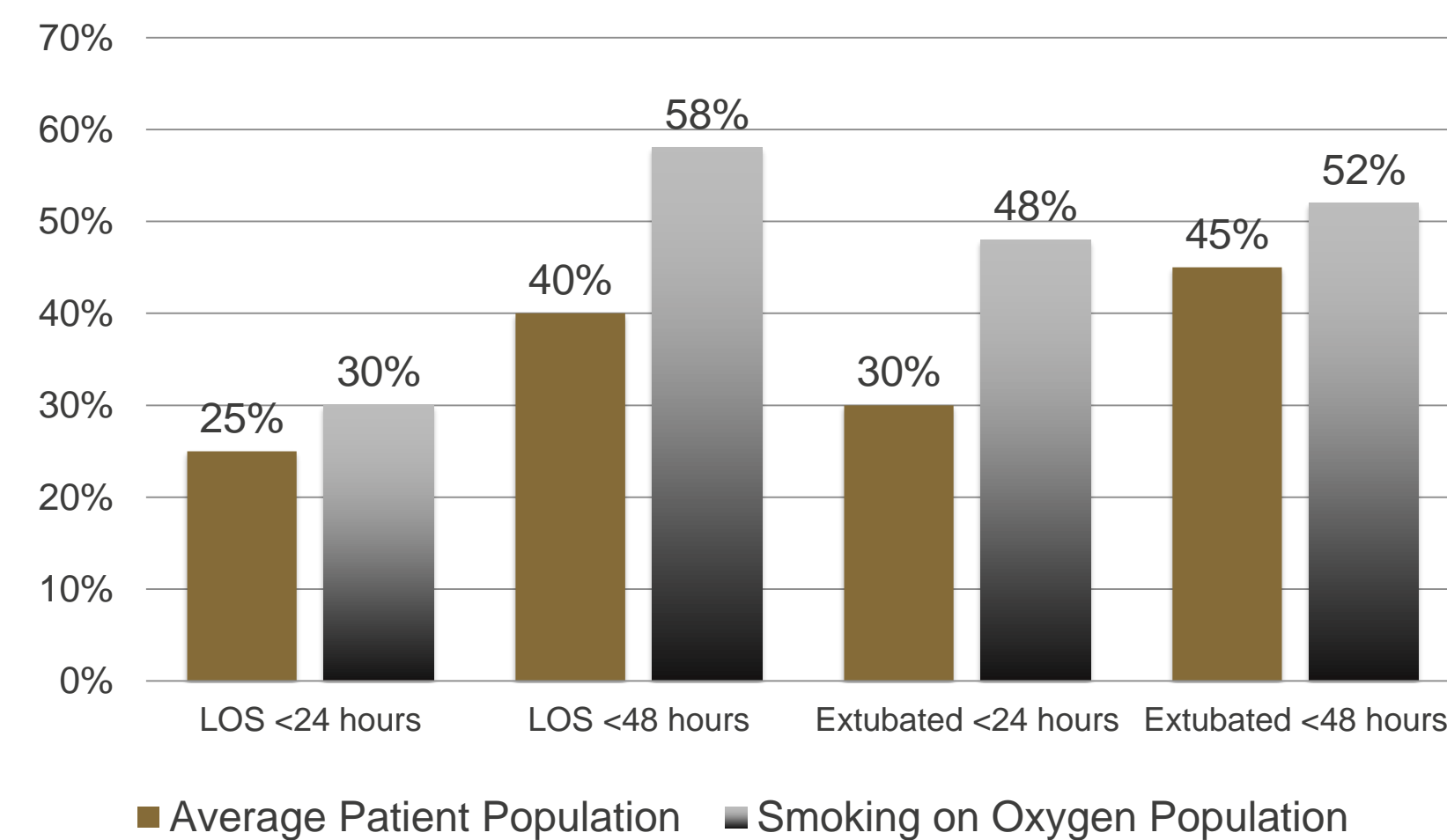
METHODS

- Retrospective chart review was performed for all patients who were treated by referring providers prior to transfer to our Burn Center between July 2012 – August 2014.
- Subset analysis performed on patients whose mechanism was injury resulting from smoking on oxygen.
- Demographics, airway management, and outcome data were measured.

AVERAGE MORTALITY RATES



LENGTH OF STAY, EXTUBATION COMPARISON



RESULTS

- 33 of 623 total patients who were treated by referring providers met the inclusion criteria for this study.
- Twenty-one (64%) were intubated prior to arrival at VUH Burn Center. Of those intubated, twelve patients (57%) were extubated within 24 hours. Only four patients (19%) were found to have inhalation injury.
- Overall mortality rate for these patients was 18%, over four times as high as our total mortality rate for transfer patients.
- Length of stay (LOS) for those who survived their hospital stay without being intubated (3.45 days) was less than those who survived after being intubated (4 days).

CONCLUSIONS

- The relatively low proportion of inhalation injury and high rates of extubation within 24 hours indicate the necessity of education improvements regarding risks of unnecessary intubation for regional first responders and physicians.
- The low incidence of inhalation injury and high rates of extubation by hospital day 1 support previously published reports of overintubation among this patient population.
- These patients have mortality rates despite small TBSA burns.
- Further study is warranted to further describe the unique attributes of this high-risk patient population to develop appropriate treatment algorithms.

REFERENCES

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Authors Years	Amani ¹ 2000-10	Murabit ³ 1999-2008	Edelman ² 2004-05	Muehlberger ⁴ 1990-97	Robb ⁵ 1992-2001	Chang ⁶ 1986-98	Barillo ⁷ 1978-97	Bennett 2012-2014	Overall
Patient Number	86	17	14	21	27	23	8	33	229
Mean Age	64.1	69.1	66.0	60.4	68.1	70.0	62.6	62.5	65.4
Male (%)	65.0	52.9	71.4	76.2	51.9	30.4	N/A	48.5	56.6
Average LOS	6.8	42.8	22.0	3.6	4.4	N/A	2.6	5.6	12.5
Average TBSA	2.5	2.8	3.9	2.0	8.4	3.9	10.7	6.3	5.1
Inhalation Injury (%)	37.5	11.8	N/A	0.0	11.0	57.0	50.0	19	26.6
Intubation (%)	36.0	11.8	N/A	0.0	11.0	18.5	N/A	64	23.6
Mortality	3.0	11.8	50.0	0.0	15.0	8.7	25.0	18.0	16.4