

Covariate of Interest	Level III	Level IV	p-value
Domain 1: Infant -level	n=1413	n=1314	
GA (weeks), n(%)			
Extremely Preterm (<28)	970 (68.8%)	849 (64.6%)	0.02
Very Preterm (28 to < 32)	406 (28.8%)	421 (32%)	0.67
Moderately Preterm (32 to <34)	24 (1.7%)	33 (2.5%)	0.33
Late Preterm & Term (≥34)	11 (0.78%)	11 (0.84%)	0.44
Birthweight (g)			
<1000g	966 (68.4%)	855 (65.0%)	0.07
Postnatal Day at First Intubation			
Mean (95% CI)	5.2 (4.6, 5.8)	11.4 (10.3,12.5)	<0.001
Median	0 (0, 3)	1 (0, 19)	<0.001
Sex, n(%)			
Male	802 (56.9%)	750 (57.1%)	0.93
Comorbidities, n(%)			
Sepsis	44 (3.1%)	72 (5.6)	0.002
Congenital cardiac disease	7 (0.5%)	54 (4.1%)	<0.001
Congenital surgical anomaly	10 (0.7%)	52 (4%)	<0.001
Airway/Craniofacial anomaly	8 (0.6%)	14 (1.1%)	0.15
Neurological impairment	17 (1.2%)	64 (4.9%)	<0.001
Acute respiratory failure	1296 (92%)	1026 (78%)	<0.001
Chronic respiratory failure	102 (7.2%)	147 (11.2%)	<0.001
Procedure/Surgery, n(%)			
Yes	11 (0.8%)	87 (6.6%)	<0.001
Domain 2: NICU-level	Level III (n=8)	Level IV (n=7)	
OB Delivery Service			
Present	8 (100%)	6 (85.7%)	1.00
Absent	0 (0%)	1 (14.3%)	
Domain 3: Intubation-level	n=2200	n=2022	
Location, n(%)			
NICU	1475 (67%)	1404 (69.4%)	0.10
Delivery Room	709 (32.2%)	605 (30%)	0.11
Other	16 (0.7%)	13 (0.6%)	0.74
Device Type, n(%)			

Direct Laryngoscopy	1,537 (70%)	1,527 (75.5%)	0.86
Laryngeal Mask Airway	1 (0.1%)	1 (0.1%)	1.00
Video Laryngoscopy	630 (28.6%)	487 (24.1%)	<0.001
Fiber Optic-Flex	3 (0.1%)	2 (0.1%)	0.65
Other	21 (1%)	1 (0.1%)	<0.001
Tube Exchanger	2 (0.1%)	3 (0.2%)	0.65
Premedication, n(%)			
None	1,142 (52%)	1,164 (57.6%)	0.65
Sedation only	315 (14.3%)	309 (15.3%)	0.81
Paralysis only	4 (0.2%)	10 (0.5%)	0.11
Sedation plus paralysis	739 (33.6%)	539 (26.7%)	<0.001
Primary Airway Provider, n(%)			
Attending	585 (26.6%)	328 (16.2%)	<0.001
Fellow	1056 (48%)	716 (35.4%)	<0.001
Resident	356 (16.2%)	118 (5.8%)	<0.001
Nurse Practitioner	627 (28.5%)	992 (49.1%)	<0.001
Physician Assistant	63 (2.9%)	305 (15.1%)	<0.001
Hospitalist	28 (1.3%)	23 (1.1%)	0.69
Respiratory Therapist	66 (3%)	55 (2.7%)	0.59
Other	20 (1%)	13 (0.6%)	0.33
Attending Presence, n(%)			
Yes	1540 (70%)	1123 (55.5%)	<0.001

Abbreviations: NICU=Neonatal Intensive Care Unit, OB= Obstetrics, GA= Gestational Age