

Background:

Patients with cleft lip and/or palate (CL/P) undergo multiple reconstructive procedures from infancy through adolescence.¹

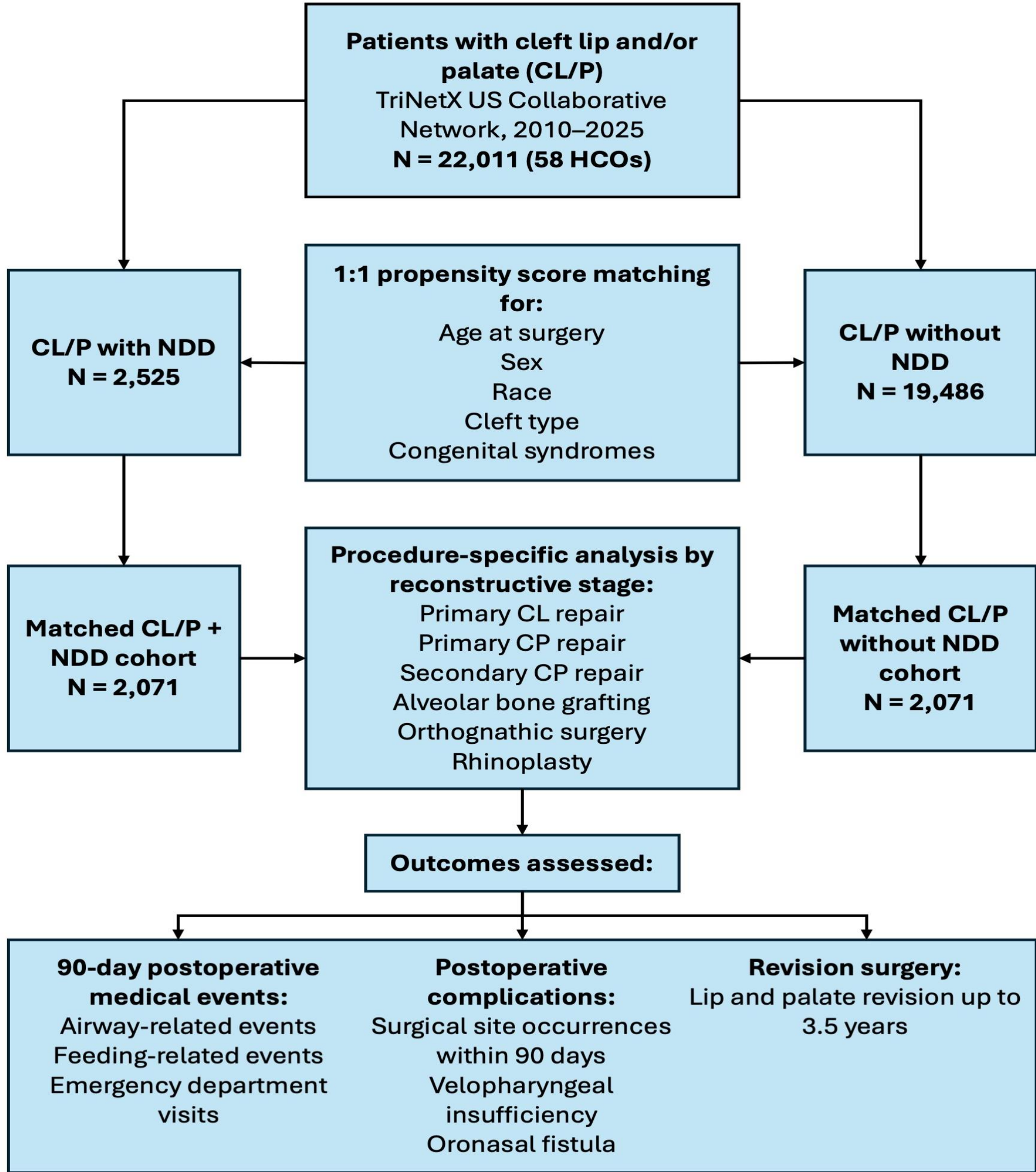
Compared with the general pediatric population, children with orofacial clefts have up to a 50% higher incidence of neurodevelopmental disorders (NDD), including autism spectrum disorder and intellectual disability.² However, how a concomitant diagnosis of NDD influences postoperative outcomes across the cleft reconstructive course remains unknown

This study aimed to compare postoperative medical events, complications, and revision surgery rates in CL/P patients with and without NDD.

We hypothesized that patients with NDD would experience higher rates of postoperative medical events, complications, and revision procedures across the cleft reconstructive course.

Methods:

A retrospective cohort study of TriNetX Database was performed to compare postoperative outcomes in patients with CL/P with and without NDD.



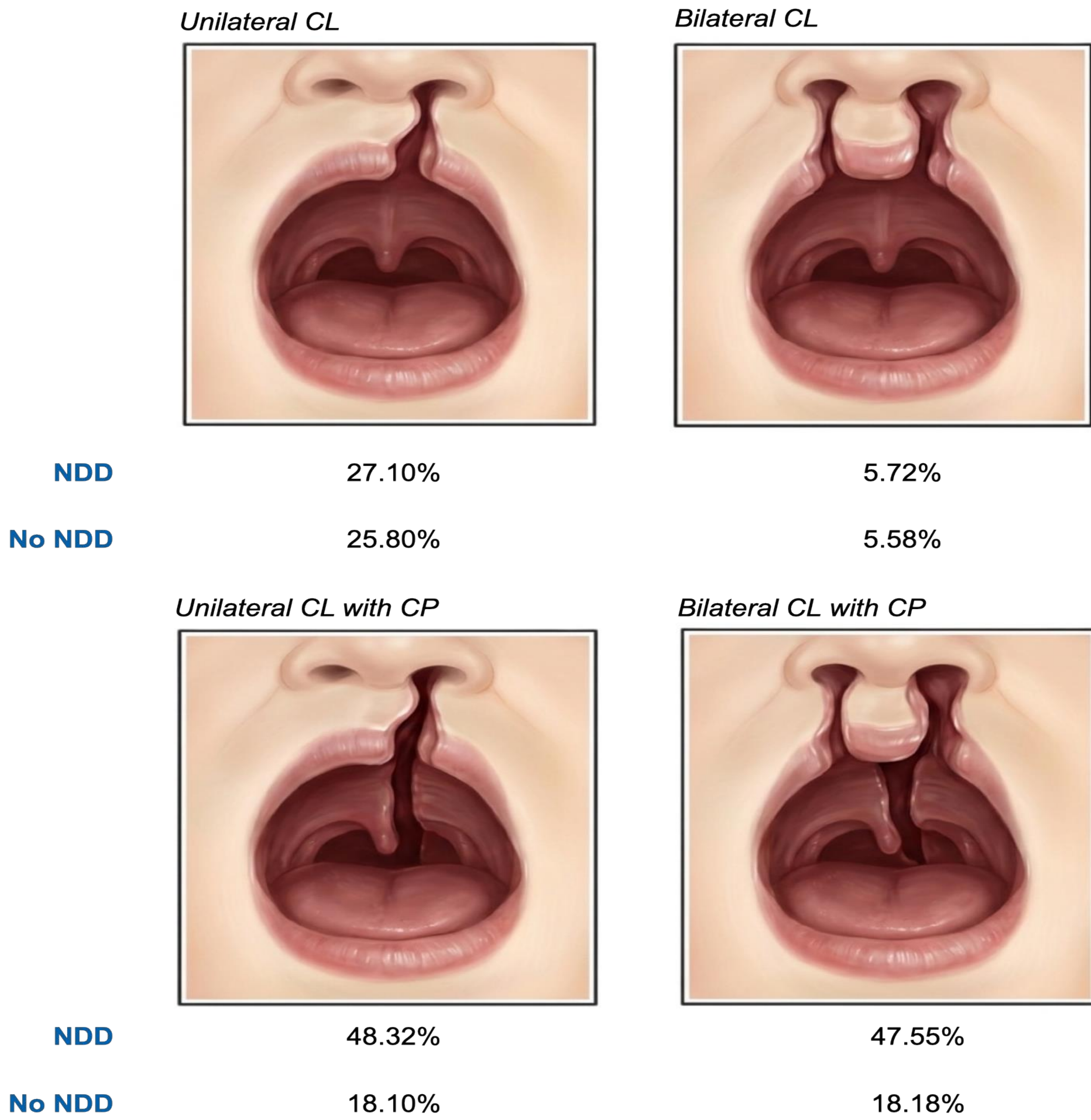
After 1:1 propensity score matching, outcomes were analyzed using risk ratios with 95% confidence intervals; p < 0.05 was considered significant.

Results:

Patient Characteristics:

Characteristic	NDD	No NDD	P-value	
Sex	Male	56.78%	58.04%	0.41
	White	59.54%	61.08%	0.31
Race	Hispanic	24.63%	23.27%	0.31
	Black	8.74%	8.69%	0.96
	Asian	8.16%	8.11%	0.95

Cleft Diagnosis



Post-operative complications:

Postoperative Complication	Procedure	NDD	No NDD	RR	P-value
VPI	Primary CP	45.94%	33.76%	1.36 (95% CI 1.24-1.49)	<0.01
	Secondary CP	50.11%	42.27%	1.89 (95% CI 1.03-1.36)	0.02
Oronasal fistula	Secondary CP	9.59%	5.66%	1.69 (95% CI 1.06-2.7)	0.02

Post-operative medical adverse events:

Post-operative Medical Events	Procedure	NDD	No NDD	RR	P-value
Airway-related	Primary CL	12.44%	3.75%	3.32 (95% CI 2.09-5.27)	<0.01
	Primary CP	16.39%	7.13%	2.30 (95% CI 1.85-2.85)	<0.01
	Secondary CP	12.20%	6.97%	1.75 (95% CI 1.16-2.65)	<0.01
	Alveolar bone graft	5.41%	3.19%	1.69 (95% CI 0.86-3.31)	<0.01
	Orthognathic	38.16%	25.66%	1.49 (95% CI 1.06-2.09)	0.02
Feeding-related	Rhinoplasty	8.89%	3.47%	2.56 (95% CI 1.46-4.5)	<0.01
	Primary CL	40.89%	15.67%	2.61 (95%CI 2.11-3.22)	<0.01
	Primary CP	36.51%	16.12%	2.26 (95% CI 1.98-2.59)	<0.01
	Secondary CP	30.28%	14.16%	2.14 (95% CI 1.64-2.79)	<0.01
	Alveolar bone graft	9.09%	3.93%	2.33 (95% CI 1.31-4.09)	<0.01
ED visit	Orthognathic	28.29%	17.76%	1.48 (95% CI 0.86-2.32)	0.03
	Rhinoplasty	32.10%	12.15%	3.31 (95% CI 1.99-3.49)	<0.01
	Primary CL	16.70%	9.03%	1.85 (95% CI 1.35-2.53)	<0.01
	Primary CP	12.33%	7.40%	1.67 (95% CI 1.33-2.08)	<0.01
	Secondary CP	10.46%	5.23%	2.00 (95% CI 1.25-3.21)	<0.01
	Rhinoplasty	11.93%	5.42%	2.20 (95% CI 1.40-3.45)	<0.01

Revision Surgeries:

- Patients with NDD had a higher rate of revision surgery following primary CP repair compared with patients without NDD (4.99% vs 3.31%; RR 1.51, 95% CI 1.07–2.14; p = 0.02).

Conclusions:

- Concomitant NDD identifies a higher-risk subgroup of patients with CL/P requiring tailored perioperative care.
- Adverse outcomes in this cohort were driven more by postoperative medical events especially airway and feeding-related events.
- Early reconstructive stages (primary and secondary CL and CP repairs) may represent the period of greatest vulnerability for children with CL/P and NDD.
- Earlier identification of NDD may improve counseling, perioperative planning, and multidisciplinary postoperative support.

References:

