

Referral Source and Establishment of a Dental Home

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BACKGROUND

- Referral pathways are essential to oral health care, especially for underserved children, by connecting disease identification with establishment of a dental home for comprehensive treatment
- Children are referred from multiple sources, yet follow-up and treatment completion are inconsistent
- The Columbia University Pediatric Dental Clinic (CUPDC) receives referrals from multiple sources throughout the enterprise, but the efficacy of referral pathways in optimizing the establishment of dental homes and timely completion of treatment, and patient characteristics that may impact referral efficacy, are unknown.

Referral Sources



OBJECTIVES

- To evaluate the proportion of children internally referred to the Columbia University Haven Pediatric Dental Clinic (CUPDC) who established a dental home and completed follow-up care, and to assess whether referral source and primary language were associated with dental home establishment, as well as the prevalence of special health care needs and treatment modalities utilized

MATERIALS & METHODS

- Retrospective chart review included patients internally referred to CUPDC between January 1, 2022, and August 31, 2025, from: (1) van-based mobile units, (2) dental school teaching clinic, (3) hospital ambulatory care network (ACN), and (4) non-network providers
- Establishment of a dental home was defined as ≥ 1 CUPDC visit
- Associations between referral source, patient characteristics, and treatment timeliness, modality, and completion were assessed

Preparation

- Identify referral sources and pathways
 - Reviewed referral and intake records
 - Classified standardized categories
- Define clinical outcome indicators
 - Dental home, continued care, recall attendance
 - Timeliness metrics and treatment categories

Data Collection

- Retrospective review of electronic health records of eligible patients (patients with internal referrals to CUPDC between January 1, 2022, and August 31, 2025)
- Data Abstraction:
 - Sociodemographic
 - Referral source
 - CUPDC visit history
 - Treatment dates

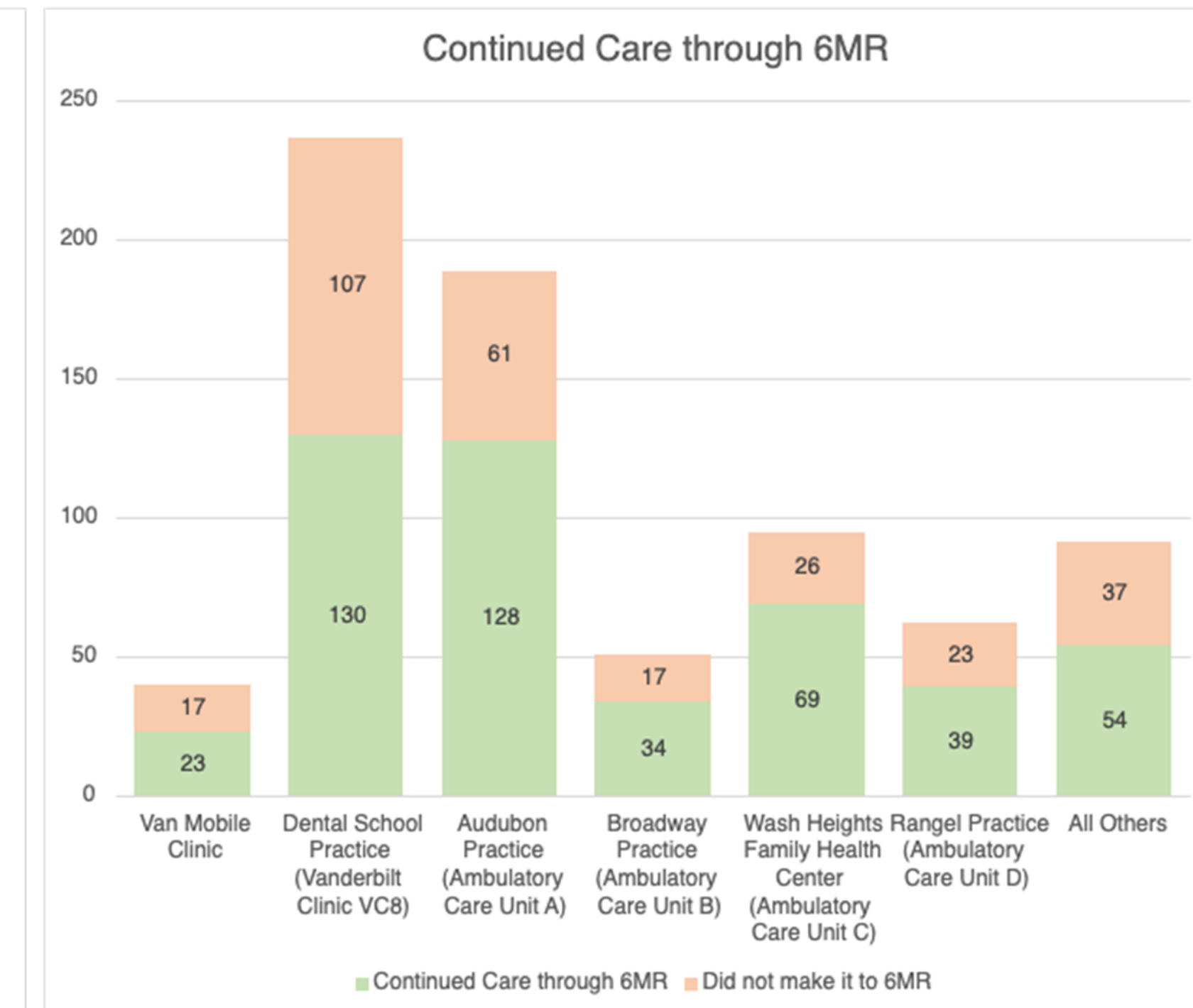
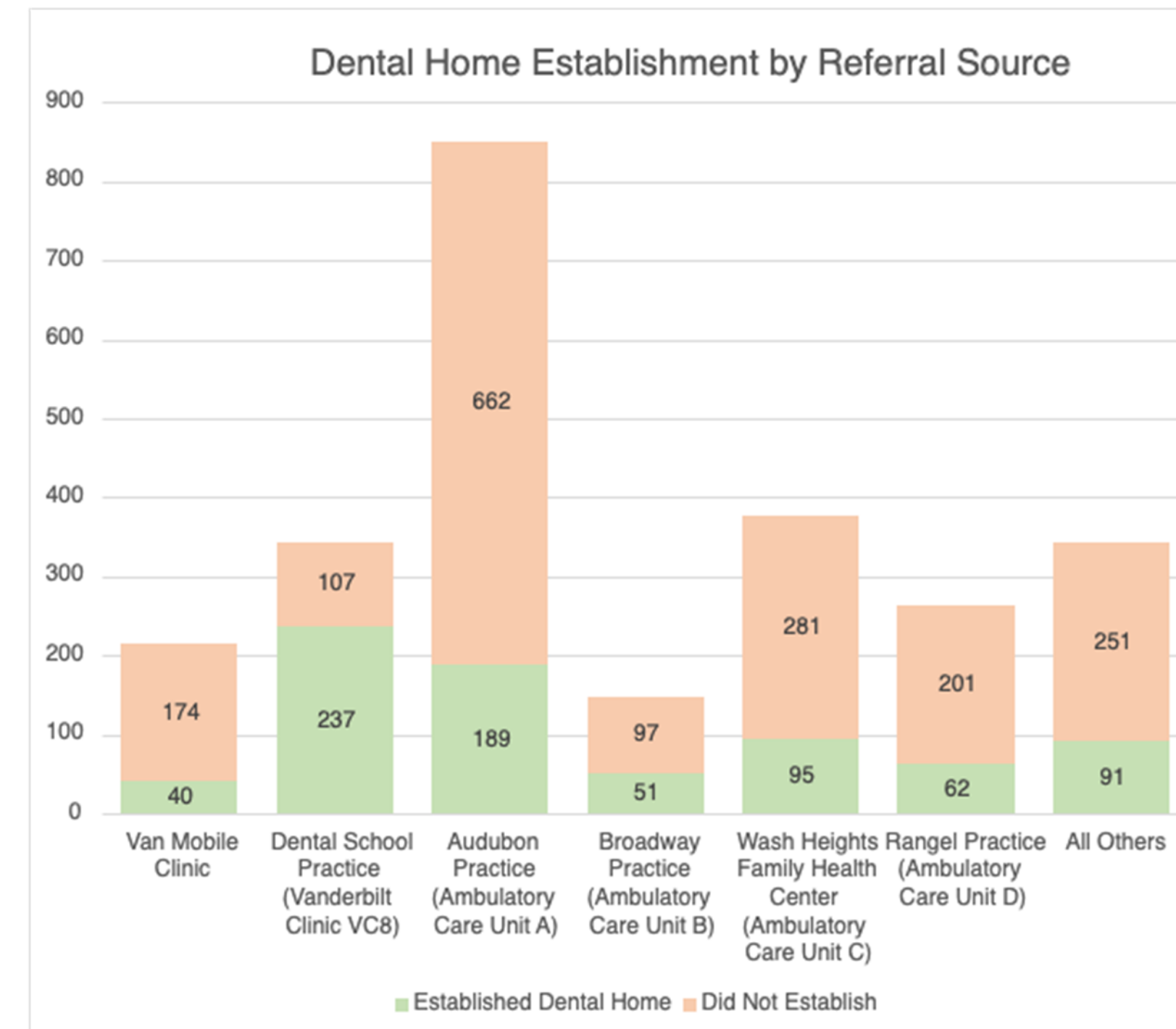
Data Analysis

- Descriptive statistics summarized referral patterns and outcomes
- Chi-square tests assessed associations with dental home establishment
- Time-to-care summarized via mean, median, and IQR
- Significance threshold: $p < 0.05$
- Grouped referral patterns and follow-through behaviors; coded variables and time-based measures

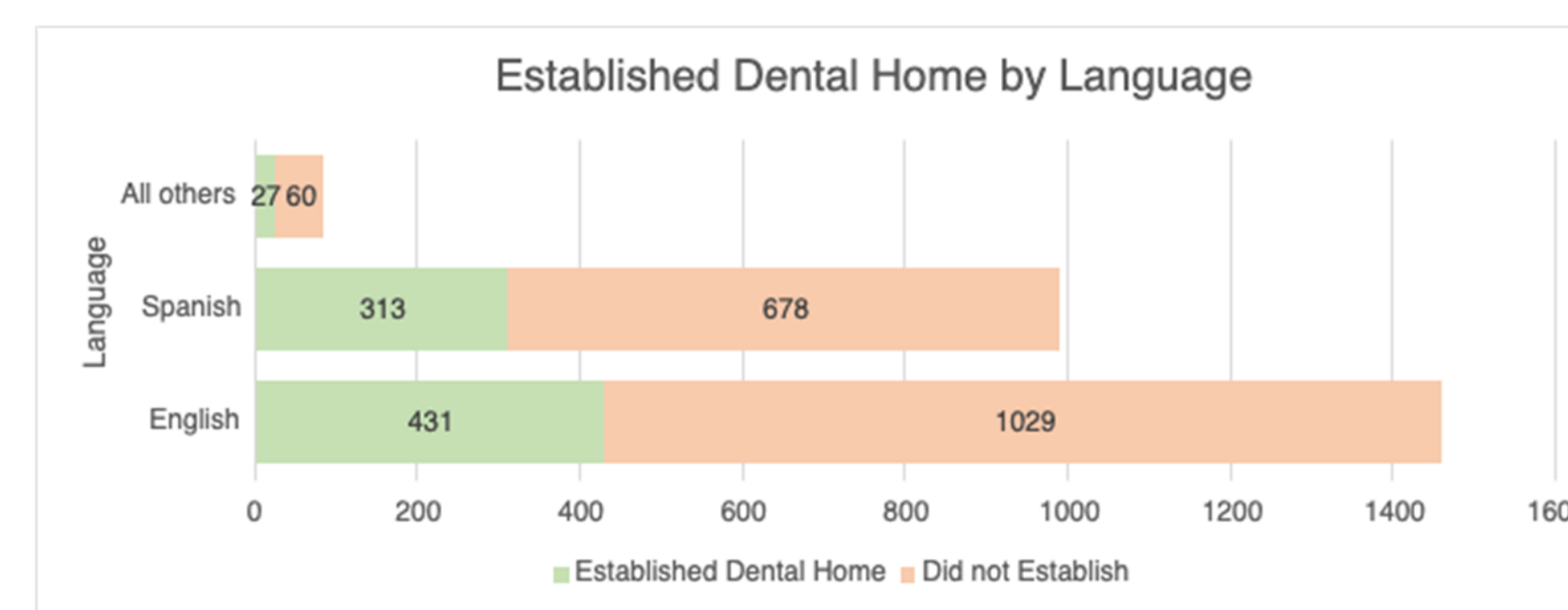
RESULTS

- Data from 2,538 referred patients were included in analyses
- Mean age at referral was 5.8 years (median 5; IQR 2–9)
- 765 patients (30.1%) established a dental home; 477 completed six-month recall (18.8% of all referrals)
- Mean time from referral to first completed visit was 150.2 days (21.4 weeks) (median 73; IQR 29–210)
- Establishment rates differed by referral source ($\chi^2(7)=302.6, p<0.001$)
 - Dental School Practice (Vanderbilt Clinic) referrals had the highest establishment rate (68.9%)
 - Most referral sources clustered between 22–27%
 - Mobile program referrals, especially Head Start, showed lower establishment (4.4%) with smaller referral volume
- Time to establishment was similar across referral sources (means 150–156 days; medians 73–76 days)
- Establishment did not differ by primary language ($\chi^2(2)=1.38, p=0.50$)
- Among patients establishing dental homes, SHCN included neurodevelopmental (241), syndromic (80), cardiac (61), asthma (68), obesity (41), and diabetes (2)
- Treatment modalities: general anesthesia (29, 3.8% of established), oral sedation (56, 7.3% of established), nitrous oxide (243, 31.8% of established)

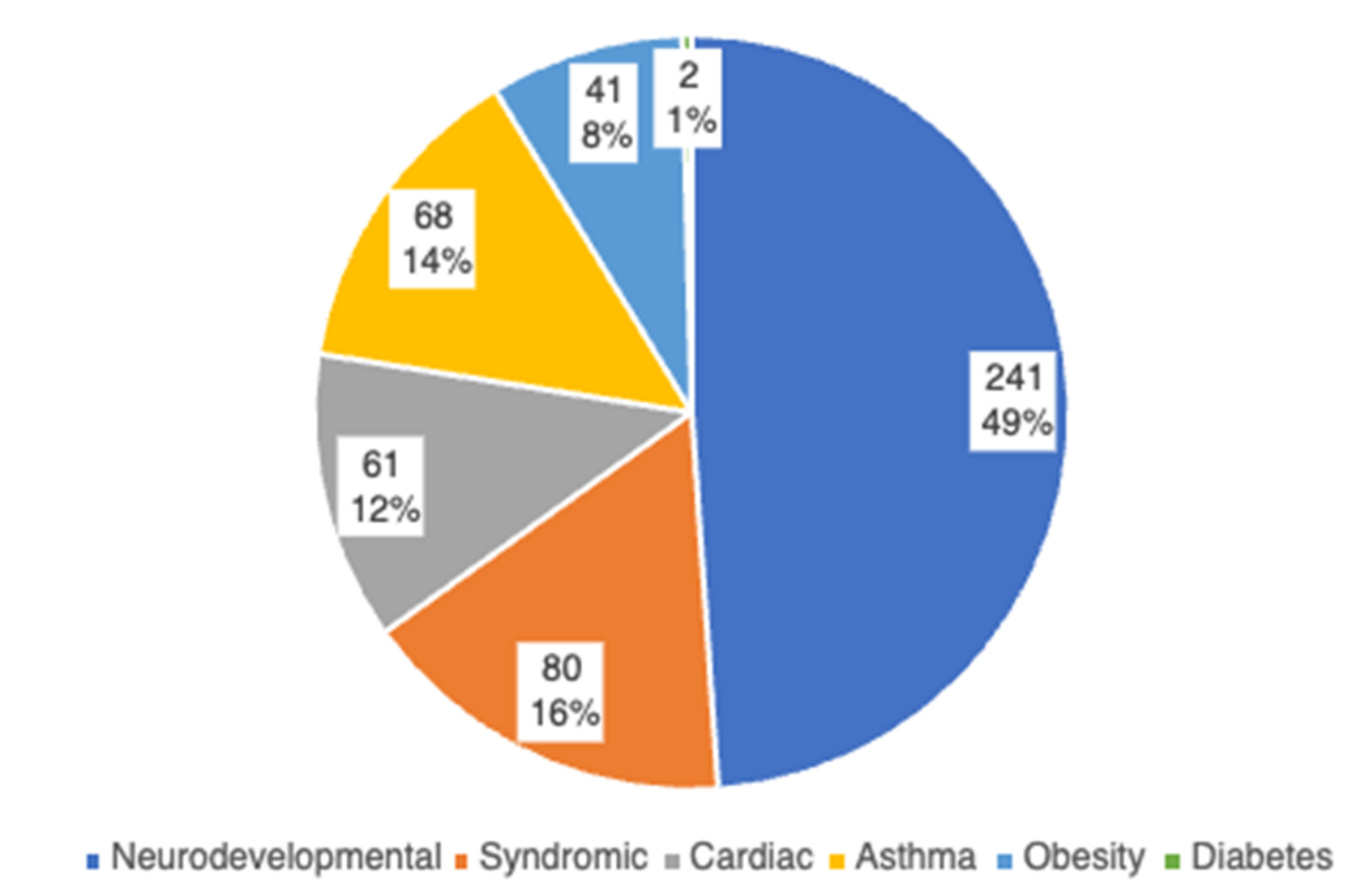
RESULTS



Referral Source	Avg # of Days to Est. Dental Home	Median
Van (Headstart Programs: 0-4yrs)	156.4 Days	76 Days
Van (Schools: 5yrs and Up)	152.6 Days	74 Days
Dental School Practice	151.0 Days	74 Days
Audubon Practice	150.4 Days	73 Days
Broadway Practice	151.8 Days	74 Days
Wash Heights Family Health Center	150.9 Days	74 Days
Rangel Practice	151.2 Days	74 Days
All Others	150.6 Days	74 Days



Referred Patients with Special Healthcare Needs that Established Dental Home



DISCUSSION

Referral Pathway Effects

- Establishment varied by referral source, indicating referral pathway influences care linkage
- In-system referrals had highest conversion rates, likely reflecting that in-system referrals involve patients already engaged in dental care specifically, often with greater treatment needs requiring follow-up at Haven
- Time-to-visit similar across sources, indicating consistent scheduling once patients enter system

Language & Access

- Comparable establishment rates across language groups suggest that language alone was not a primary barrier to successful care linkage within this system. This may be attributable to the clinic's fully bilingual staff and the robust interpreter and translation services available through CUMC/NYP, which likely mitigated common language-related access barriers.

Clinical Need & Referral Impact

- Presence of sedation, general anesthesia, and special health care needs (SHCN) patients among those establishing dental homes supports the role of referral pathways in connecting high-need pediatric patients to comprehensive dental care

Study Limitations

- Limitations include the retrospective design, dependence on electronic health record documentation, and inability to capture if patients pursued dental care at outside clinic after receiving referral
- Referral workflow factors and family-level barriers to scheduling and follow-up were not directly measured and require further study

CONCLUSIONS

- 30% of referred children established a dental home and fewer than 20% completed six-month recall, indicating major attrition between referral and sustained care; most notably among externally generated referrals
- The lack of an association between primary language and dental home establishment suggests language was not a primary barrier within this referral system; however, assessment of other sociodemographic characteristics may provide additional insight into factors that may moderate referral efficacy
- Findings suggest that referral workflow and follow-up processes are likely important drivers of successful care linkage, bolstering the need for further research on these variables to improve outcomes
- Targeted improvements in referral tracking, scheduling outreach, and care coordination, particularly for mobile and community referral pathways, may increase dental home establishment and continuity of care

ACKNOWLEDGEMENTS

I would like to thank the **American Academy of Pediatric Dentistry Foundation** access to care, community and quality improvement grant on targeted referrals and the dental home and my research team - Drs. Herbert, Lumsden, and Yoon, and Tunaidi Ansari for making this project possible.