Co-Location of Medical and Dental Services Improves Access to Care

Vishal Patel DDS[1], Joshua Bullock DMD[2]
NYU Langone Pediatric Dental Medicine, Pittsburg, KS, USA

NYU Langone Dental Medicine
Advanced Education in Pediatric Dentistry

INTRODUCTION

1. Geographic access to health care is associated with increased use of preventive care and improved health outcomes for certain chronic conditions.[1,2,3,4,5,6,7]
2. The association between proximity to healthcare facilities and improved disease management and population health has been documented. Still, little is known about small-area health care environments and how the presence of healthcare facilities has changed over time during recent health system and policy changes.[8]
3. Although geographic access is one of several components that can alter an individual's overall access to healthcare, including insurance status, out-of-pocket costs, facility hours, appointment wait times, and linguistic services, prior research has shown that increased geographic access is associated with greater use and improved outcomes.[8]

PURPOSE

To examine the rate of missed appointments for necessary pediatric dental care when medical and dental services were co-located in a single, convenient geographic location versus sited in two separate geographic locations.

METHODS

A retrospective chart review was performed on randomly selected pediatric patients who received medical and/or dental services at a rural community health center in Pittsburg, Kansas during two four-month periods: prior to medical-dental co-location (October 2020 to January 2021) and after medical-dental co-location (October 2021 to January 2022). Univariate and bivariate (Chi-square test) statistical analyses were performed to determine whether an association exists between missed appointments and service co-location.

Table 1:Univariate Analysis of Demographics and Dental Appointments

	level	Overall
n		90
Age (mean (SD))		7.08 (2.7)
Sex (%)	Female	49 (54.4)
	Male	41 (45.6)
Missed appointment (%)	Kept Appointment	67 (74.4)
	Missed Appointment	23 (25.6)
Same building (%)	No	45 (50.0)
	Yes	45 (50.0)
Different building (%)	No	45 (50.0)
	Yes	45 (50.0)
Medical dental patient (%)	No	24 (26.7)
	Yes	66 (73.3)

Chart 1: Visit Status by Referral Location

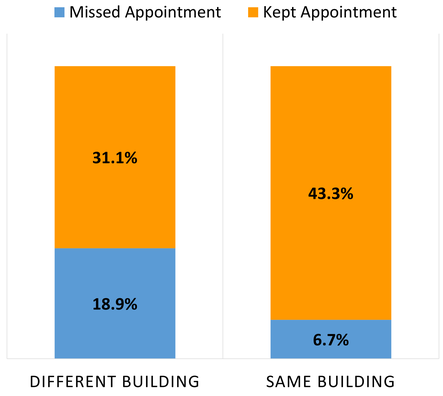

Table 2: Association between Missed Appointments and Medical and Demographic Factors

	level	Overall	Kept Appointment	Missed Appointment	P Value
n		90	67	23	
Age (mean (SD))		7.08 (2.7)	7.16 (2.8)	6.85 (2.6)	0.642
Sex (%)	F	49 (54.4)	36 (53.7)	13 (56.5)	1
	M	41 (45.6)	31 (46.3)	10 (43.5)	
Same building (%)	No	45 (50.0)	28 (41.8)	17 (73.9)	0.016
	Yes	45 (50.0)	39 (58.2)	6 (26.1)	
Different building (%)	No	45 (50.0)	39 (58.2)	6 (26.1)	0.016
	Yes	45 (50.0)	28 (41.8)	17 (73.9)	
Medical dental patient (%)	No	24 (26.7)	1 (1.5)	23 (100)	<0.001
	Yes	66 (73.3)	66 (98.5)	0 (0.0)	

STRENGHTS AND LIMITATIONS

1. Strength: Statistically significant differences with a p-value < 0.05
2. Strength: Demonstrates how important medical/dental integrations could be on appointment success rates
3. Limitation: Retrospective nature of study cannot prove that decrease in missed appointment rates of integrated patients is directly due to integration

CONCLUSIONS

1. The rate of missed appointments was meaningfully and significantly reduced when medical and dental services were co-located at a single site within a rural community health center.
2. Increased understanding of reasons for missed appointment rates allows the dental office to operate efficiently and serve a greater number of patients within the community.
3. Further studies on medical-dental integration and geographic co-location may strengthen evidence-based practice and improve access to dental care in rural communities.

REFERENCES

1. Harrington DW, Wilson K, Bell S, Muhajarine N, Ruthart J. Realizing neighbourhood potential? the role of the availability of health care services on contact with a primary care physician. Health Place. 2012;18(4):814-823.
2. Goh CE, Mooney SJ, Siscovick DS, et al. Medical facilities in the neighborhood and incidence of sudden cardiac arrest. Resuscitation. 2018;130:118-123.
3. Daly MR, Mellor JM, Millones M. Do avoidable hospitalization rates among older adults differ by geographic access to primary care physicians? Health Serv Res. 2018;53(suppl 1):3245-3264.
4. Ambroggi M, Biasini C, Del Giovane C, Fornari F, Cavanna L. Distance as a barrier to cancer diagnosis and treatment: review of the literature. Oncologist. 2015;20(12):1378-1385.
5. Jewett PI, Gangnon RE, Elkin E, et al. Geographic access to mammography facilities and frequency of mammography screening. Ann Epidemiol. 2018;28(2):65.e2-71.e2.
6. Cote CL, Singh S, Yip AM, et al. Increased distance from the tertiary cardiac center is associated with worse 30-dayoutcomes after cardiac operations. Ann Thorac Surg. 2015;100(6):2213-2218.
7. Tu JV, Chu A, Maclagan L, et al. Cardiovascular Health in Ambulatory Care Research Team (CANHEART). Regional variations in ambulatory care and incidence of cardiovascular events. CMAJ. 2017;189(13): E494-E501.
8. JAMA Netw Open. 2020 May; 3(5): e205105. Published online 2020 May 15.

ACKNOWLEDGMENTS

Hansjorg Wyss Department of Plastic Surgery, NYU Grossman School of Medicine
NYU Langone Health, Division of Biostatistics, Department of Population Health
Dr. Shreekrishna Akilesh, DMD

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.