Primary Care Development Corporation

REDLINING AND NEW YORK CITY:

A Lens on Primary Care and Maternal Health

POINTS ON CARE

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Primary Care Development Corporation

As an important social driver of health, primary care saves lives, improves individual and community health, and is central to health equity.[1-4] Primary care providers (PCPs) are uniquely positioned to impact individual and community health as a usual source of care and entry point into the health care system.[5] They provide a wide range of critical services including prevention, early diagnosis, treatment of disease, chronic disease management, as well as an essential source of family planning and "care before, during and after pregnancy".[6] Primary care reduces overall health care costs and is the only part of the health system that has been proven to lengthen lives and reduce population-level health disparities.[7]

In New York City, longstanding health-related disparities persist, especially across racial and ethnic groups. Today, there is inadequate access to primary care in many communities of color, including proximity to and availability of primary care providers. Historic race- and place-based policies, like redlining, which led to and helped maintain residential racial segregation[8] may be associated with these present-day neighborhood-level access barriers, in part due to the racism and poverty that have persisted in these neighborhoods over time.

In this brief, Primary Care Development Corporation (PCDC) examines access to primary care in New York City through the historical lens of redlining practices. As maternal and infant health is indicative of and pivotal to the overall health of a community, the report also spotlights associated maternal and infant health outcomes to delve further into how this discriminatory practice may still affect New Yorkers.[9] Provider metrics, redlining, and social vulnerability were analyzed at the census tract level. Spatial analysis was conducted at the zip code tabulation area (ZCTA) level to identify associations between infant health and key indicators of access and population health. Additionally, this brief provides data on the supply of Primary Care Providers by NYC Council Districts using the City Council District boundaries that were redrawn in late 2022 to help inform future health resource allocation in NYC.

Historical redlining practices and present-day New York City

In the 1930s, the Home Owners' Loan Corporation (HOLC) created "redlined" maps, assigning neighborhood valuations as A – Best; B – Still desirable; C – Definitely declining; and D – Hazardous (Figure 1).[8] Neighborhoods that were predominantly Black were consistently assigned lower grades (C or D).[8] These HOLC maps encouraged lending in predominately white neighborhoods (A or B) and discouraged lending in neighborhoods of color (C or D), leading to active lending discrimination in these neighborhoods and disparate investment throughout the city. Nearly a century later, neighborhoods redlined with lower grades face poor access to health care and worse health outcomes.

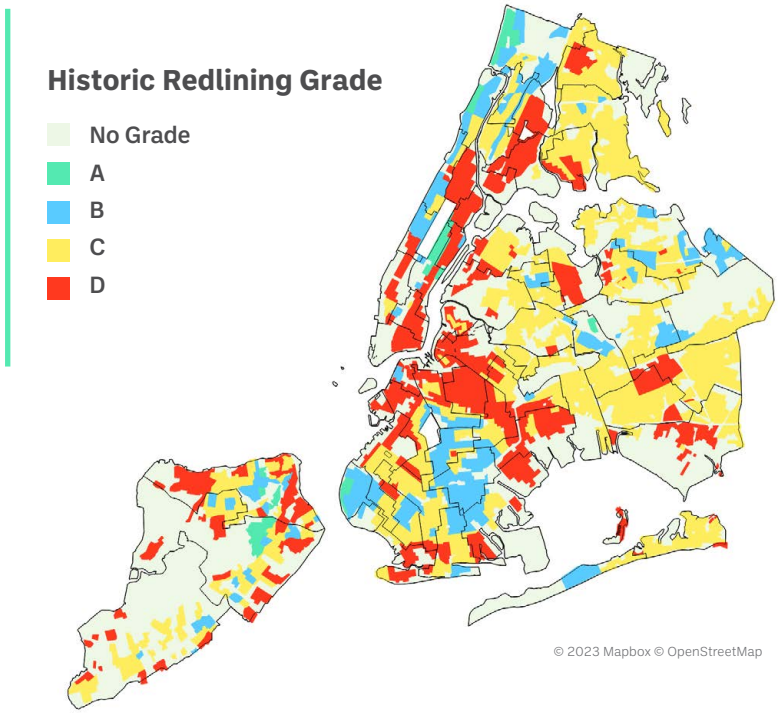

Fig 1. Historic Redlining Grade by City Council District. (ICPSR 2020)

[1] In this data brief, we define PCPs as physicians (MDs or DOs), Nurse Practitioners (NPs), and Physician Assistants (PAs) with a specialty of Family Medicine, Internal Medicine, General Primary Care, Geriatrics or Obstetrics and Gynecology.

Identifying Social Vulnerability

To help public health officials identify and meet the needs of socially vulnerable communities, the Social Vulnerability Index (SVI) was created jointly by the Centers for Disease Control and the Agency for Toxic Substances and Disease Registry to quantify a community's susceptibility to external stressors on health (Figure 2)[10]. The SVI is a database of factors including socio-economic status, household characteristics, racial/ethnic minority status, housing type, and transportation.[11] Comparing historic redlining grades and present-day social vulnerability within New York City demonstrates how redlining may have helped shape present-day neighborhood factors, including racial and ethnic composition, and likely contributed to the persistent disadvantage of the communities that experienced the brunt of redlining practices. Today redlined areas (C and D grades) have social vulnerability index scores (0.70 and 0.76) that are more than twice as high as A-graded areas (0.34) (Figure 3). Additionally, areas with low grades had higher proportions of racial and ethnic minority residents, particularly non-Hispanic Black residents, demonstrating the legacy of redlining and other practices that have contributed to persistent residential racial segregation.

Key findings:

- Historically redlined neighborhoods today are more socially vulnerable than the A-graded neighborhoods that were not subject to discrimination or disinvestment.
- D-graded neighborhoods today are >2X as socially vulnerable as A-graded ("Best") neighborhoods
- Redlined communities with low grades historically, today have fewer primary care providers (PCPs) – 2X more PCPs in A-graded ("Best") versus D-graded ("Hazardous") neighborhoods and 4X more PCPs in A-graded ("Best") versus C-graded ("Definitely declining") neighborhoods.

Overall Vulnerability			
Socioeconomic Status	**Household Characteristics**	**Racial & Ethnic Minority Status**	**Housing Type & Transportation**
Below 150% FPL	Aged 65 & Older	Hispanic or Latino (of any race)	Multi-Unit Structures
Unemployed	Aged 17 & Younger	Black/African American, not Hispanic or Latino	Mobile Homes
Housing Cost Burden	Civilian with a Disability	Asian, not Hispanic or Latino	Crowding
No High School Diploma	Single-Parent Household	American Indian or Alaskan Native, not Hispanic or Latino	No Vehicle
No Health Insurance	English Language Proficiency	Two or More Races or other Races, not Hispanic or Latino	Group Quarters

Fig 2. Breakdown of Social Vulnerability Index (CDC 2020)

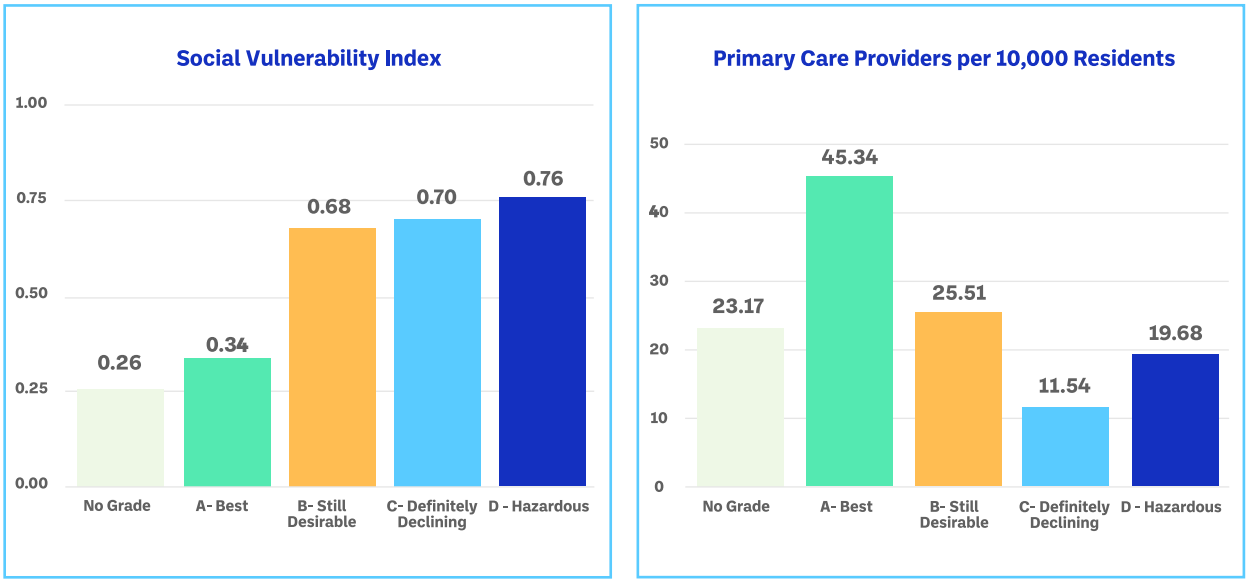

Fig 3. Statistics by HOLC Redlining Score (CDC 2020; IQVIA, 2021; HRSA 2022)HRSA 2022

Uneven health care access remains

The impact of redlining is also seen in present-day primary care access. Disparities in the supply and proximity of primary care providers across NYC exist where A-graded neighborhoods have twice as many PCPs compared to D-graded neighborhoods, and four times as many as C-graded neighborhoods (Figure 3). This results in the uneven distribution of PCPs across City Council Districts, with districts encompassing historically redlined neighborhoods experiencing a lower number of PCPs per 10,000 residents (Figure 4 and Appendix Table 1). The greater supply of PCPs in D-graded neighborhoods versus C-graded neighborhoods is likely explained by Federally Qualified Health Centers (FQHCs). That is, FQHCs are concentrated in medically underserved and low-income areas, and D-graded neighborhoods are generally low-income and therefore have more FQHCs (239) than C-graded neighborhoods (125 FQHCs). Districts with the highest ratio of PCPs are mainly in Manhattan, and districts with the lowest provider ratios are primarily in Brooklyn and Queens.

Our analysis also found disparate access proximate to the racial/ethnic composition of neighborhoods across the city where areas with higher percentages of Black residents are associated with worse health care access. These communities have higher uninsured rates, a lower supply of PCPs, and a higher proportion of residents reporting delayed care due to cost. Similar trends are apparent in ZCTAs with higher percentages of Hispanic/Latino residents. Many of these findings appear to also be correlated with lower incomes, which explains why these areas have more residents on Medicaid (the federal health insurance program that is only available for those with low incomes), and more FQHC sites (which are specifically located in low-income neighborhoods that lack adequate access to healthcare).

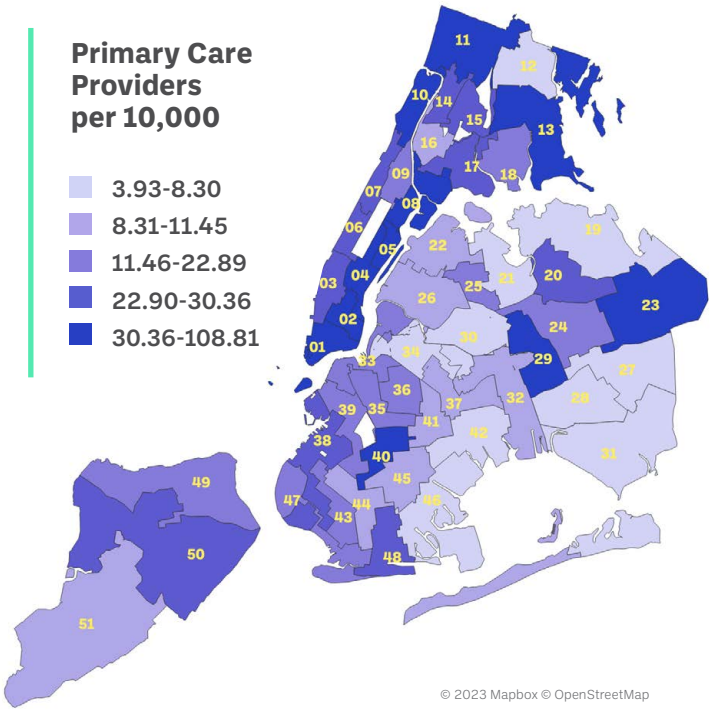

Figure 4. Primary Care Providers per 10,000 Residents by City Council District (IQVIA 2021)

A spotlight on maternal and infant health

Comprehensive primary care includes a full suite of physical and behavioral health services, and "reproductive health care is a well-established component of primary care."[12] The well-being of pregnant people as well as the health of infants are critical building blocks for their community's overall health status,[9] and PCPs play an integral role in providing or referring patients to these services. Maternal mortality and maternal health complications continue to be significant problems in the United States, particularly for Black women and Indigenous women.[13] Nationally, Black women have the highest level of maternal mortality.[13] These outcomes are similar in New York State, where between 2018-2021, the rate of maternal death for Black mothers was five times greater compared to white women (53 deaths per 100,000 live births compared to 13 deaths per 100,000 live births).[14] Moreover, Black babies are more likely to be born at a low birth weight.[15] Low birth weight is also associated with a range of potential health complications, some of which impact health and educational outcomes for a person's entire life.[16]

Similar to the availability of PCPs, historically redlined neighborhoods have fewer obstetrician/gynecologists (OB/GYN) and reproductive health care providers, which may impact the accessibility of prenatal care. A-graded neighborhoods currently have 12.71 OB/GYN and reproductive health care providers per 10,000 residents, compared to 1.15 and 1.58 per 10,000 residents in C-graded and D-graded neighborhoods (Figure 5).

Key findings:

- Areas with higher percentages of Black and Hispanic/Latino residents continue to face barriers to health care access demonstrated by:
  - Lower Primary Care Provider supply
  - Higher Medicaid enrollment
  - Higher uninsured rates

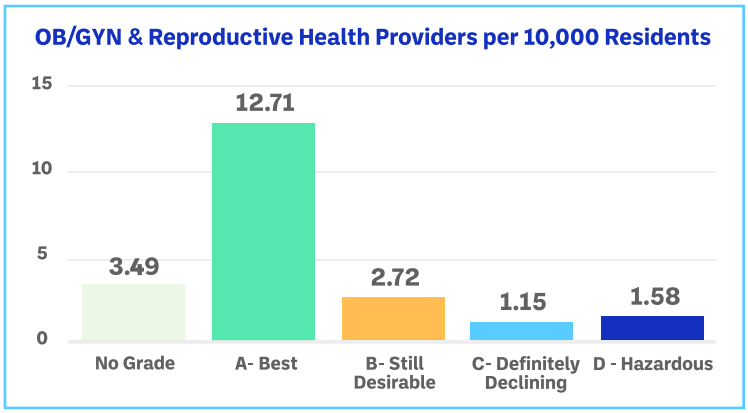

Figure 5. OB/GYN & Reproductive Health Providers per 10,000 by HOLC Redlining Score (IQVIA, 2021)

[2] "OB/GYN and reproductive health care providers" are providers specializing in obstetrics and gynecology services.

The areas with fewer OB/GYN providers and worse access to care simultaneously experience poorer infant health outcomes. These ZCTAs with overall worse prenatal care access have a greater percentage of premature births, low birth weight, and infant mortality rate. As shown in Figure 6, ZCTAs with a higher percentage of premature births overlap with ZCTAs that have a higher percentage of Black residents.

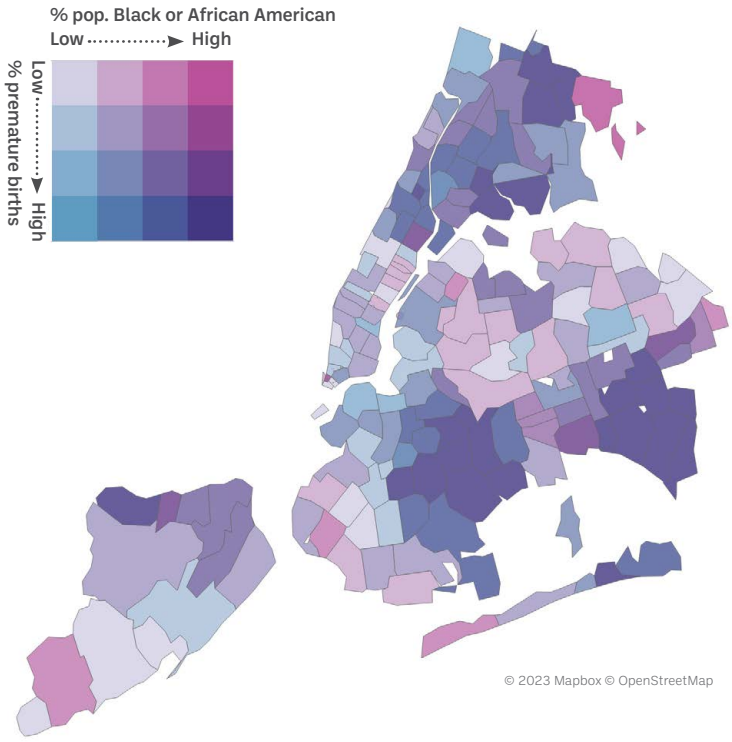

Figure 6. Comparing Percent Population Black or African American to Percent Premature Births by ZCTA (American Community Survey 5-year estimate 2017-2021, NYDOH Vital Statistics 2018-2020)

Conclusions and Recommendations

Primary care saves lives, improves individual and community health, and is central to health equity.[1-4] In fact, primary care is the only part of the health system that has been proven to lengthen lives, reduce health disparities, and reduce costs.[7] However, historically marginalized communities have the least access to primary care and the worst health outcomes. As the research in this report indicates, in New York City, many historically marginalized communities continue to struggle with the lasting impacts of systemic racism as shown by a neighborhood history of redlining, and health outcomes specifically for mothers and infants demonstrate the vast and deeply ingrained inequities that continue to be felt by these communities today. However, Medicaid coverage and FQHCs play an important role in supporting health care access in these medically underserved areas.

Compared to other states, New York consistently ranks below many states in key health indicators, including low birth weight.[17,18] Yet, as seen in this analysis, many parts of New York lack an adequate number of primary care providers. There is an urgent need to re-orient New York's health care system towards primary care. Policymakers in New York City and at every level of government should consider policies that would improve access to comprehensive primary care, including reproductive health care, and should invest in infrastructure and workforce to support that access. PCDC urges the City Council and all policymakers to support policies that:

- Create a primary care-centric health system that supports whole-person, integrated, high-quality primary care for all people, including by increasing investment in and improving payment models for all primary care services.
- Directly support capital investment in and sustainability for primary care providers in disinvested communities, so that they can provide the care needed in safe, welcoming, supportive, appropriately resourced facilities.

For more information about PCDC's policy priorities and recommendations visit our website (www.pcdc.org).

Interested in more data for your district?

We encourage anyone interested in additional data or information on primary care access in your district to contact PCDC's Research & Evaluation team.

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References

1. Starfield B. Primary Care and Equity in Health: The Importance to Effectiveness and Equity of Responsiveness to Peoples' Needs. *Humanity Soc*. 2009;33(1-2):56-73. doi:10.1177/016059760903300105

2. Macinko J, Starfield B, Shi L. Quantifying the Health Benefits of Primary Care Physician Supply in the United States. *International Journal of Health Services*. 2007;37(1):111-126. doi:10.2190/3431-G6T7-37M8-P224

3. Shi L, Starfield B, Politzer R, Regan J. Primary Care, Self-rated Health, and Reductions in Social Disparities in Health. *Health Serv Res*. 2002;37(3):529-550. doi:10.1111/1475-6773.t01-1-00036

4. Blewett LA, Johnson PJ, Lee B, Scal PB. When a Usual Source of Care and Usual Provider Matter: Adult Prevention and Screening Services. *J Gen Intern Med*. 2008;23(9):1354-1360. doi:10.1007/s11606-008-0659-0

5. Friedberg MW, Hussey PS, Schneider EC. Primary Care: A Critical Review Of The Evidence On Quality And Costs Of Health Care. *Health Aff*. 2010;29(5):766-772. doi:10.1377/HLTHAFF.2010.0025

6. Shi L. The Impact of Primary Care: A Focused Review. *Scientifica (Cairo)*. 2012;2012:1-22. doi:10.6064/2012/432892

7. WHO. Primary health care. World Health Organization. Published April 1, 2021. Accessed June 12, 2023. https://www.who.int/news-room/fact-sheets/detail/primary-health-care

8. Richardson J, Mitchell BC, Meier HCS, Lynch E, Edlebi J. Redlining and Neighborhood Health. National Community Reinvestment Coalition. Published 2020. Accessed June 12, 2023. https://ncrc.org/holc-health/

9. Office of Disease Prevention and Health Promotion O. Maternal, Infant, and Child Health Workgroup- Healthy People 2030. Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, Office of the Secretary, U.S. Department of Health and Human Services. Published 2020. Accessed June 12, 2023. https://health.gov/healthypeople/about/workgroups/maternal-infant-and-child-health-workgroup

10. ATSDR. At A Glance: CDC/ATSDR Social Vulnerability Index. Agency for Toxic Substances and Disease Registry. Published October 26, 2022. Accessed June 26, 2023. https://www.atsdr.cdc.gov/placeandhealth/svi/at-a-glance_svi.html

11. CDC/ATSDR. CDC/ATSDR Social Vulnerability Index. *Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program*. Published online 2020.

12. Beaman J, Schillinger D. Responding to Evolving Abortion Regulations — The Critical Role of Primary Care. *New England Journal of Medicine*. 2019;380(18):e30. doi:10.1056/NEJMP1903572/SUPPL_FILE/NEJMP1903572_DISCLOSURES.PDF

13. Center for Disease Control and Prevention C. Infographic: Racial/Ethnic Disparities in Pregnancy-Related Deaths — United States, 2007–2016. Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. Published April 13, 2022. Accessed June 12, 2023. https://www.cdc.gov/reproductivehealth/maternal-mortality/disparities-pregnancy-related-deaths/infographic.html

14. New York State Department of Health. *New York State Maternal Mortality Review Report on Pregnancy-Associated Deaths in 2018*.; 2022. Accessed June 12, 2023. https://www.health.ny.gov/community/adults/women/docs/maternal_mortality_review_2018.pdf

15. March of Dimes. Low birthweight by race: United States, 2019-2021. Published online 2023. Accessed June 12, 2023. https://www.marchofdimes.org/peristats/data?reg=99&top=4&stop=45&lev=1&slev=1&obj=1

16. March of Dimes. Low birthweight | March of Dimes. Published June 2021. Accessed June 12, 2023. https://www.marchofdimes.org/find-support/topics/birth/low-birthweight

17. NYS Health Foundation. *Health Care Spending Trends in New York State*.; 2017. Accessed June 26, 2023. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://nyhealthfoundation.org/wp-content/uploads/2018/04/health-care-spending-trends-new-york-2017.pdf

18. America's Health Rankings. America's Health Rankings, Annual Report, New York State. United Health Foundation. Accessed December 6, 2021. https://www.americashealthrankings.org/explore/measures/Overall/NY

Appendix:

Table 1. Data by City Council District (HRSA 2022, IQVIA 2021, NYDOH Vital Statistics 2018-2020)

District	FQHC Count	PCP Ratio	OB-GYN/ Repro Ratio	% Late or No Prenatal Care Births	% Premature Births
1	12	38.33	7.23	5.58	10.91
2	10	33.49	4.12	3.02	8.96
3	16	23.54	2.03	4.08	10.05
4	5	108.81	18.91	3.60	9.32
5	0	81.04	8.58	3.07	10.10
6	4	28.48	6.00	2.00	9.74
7	15	22.89	0.96	2.87	8.50
8	28	68.29	4.70	7.22	10.53
9	21	17.98	1.24	9.98	13.42
10	7	68.52	7.93	10.01	12.92
11	7	44.85	2.62	6.82	10.65
12	4	3.93	0.06	9.69	11.72
13	2	35.90	5.08	11.51	14.42
14	23	28.30	0.57	9.06	11.91
15	20	25.76	3.23	11.08	12.57
16	16	9.12	0.63	11.47	12.58
17	42	27.75	1.77	12.08	13.17
18	9	17.53	0.51	12.22	12.57
19	0	6.85	0.29	10.22	12.02
20	3	26.71	2.43	3.82	9.70
21	5	6.51	0.23	5.03	9.13
22	3	10.07	1.18	7.73	12.14
23	1	30.55	2.47	6.83	9.99
24	2	19.09	1.71	4.74	12.66
25	5	21.65	2.01	6.65	10.92
26	6	8.76	0.24	6.69	10.61

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Table 1. Data by City Council District (HRSA 2022, IQVIA 2021, NYDOH Vital Statistics 2018-2020)

District	FQHC Count	PCP Ratio	OB-GYN/ Repro Ratio	% Late or No Prenatal Care Births	% Premature Births
27	6	8.03	1.00	5.57	9.93
28	4	5.12	0.59	8.98	14.85
29	3	34.45	5.74	9.29	14.48
30	0	6.84	1.06	5.62	10.58
31	9	8.01	0.71	6.06	9.72
32	1	9.30	1.07	9.17	14.32
33	15	16.26	3.29	6.75	11.43
34	12	8.30	1.13	3.01	8.44
35	9	19.01	2.21	4.57	9.02
36	7	14.27	1.41	4.10	9.91
37	11	10.26	0.89	6.27	11.24
38	20	26.89	2.46	8.81	13.37
39	7	18.60	2.92	2.32	9.78
40	11	33.67	4.35	2.55	8.62
41	9	11.33	1.00	7.39	12.15
42	9	6.40	0.53	10.33	14.74
43	4	13.27	1.65	9.29	14.00
44	9	11.21	1.73	3.06	8.46
45	2	9.36	0.77	3.08	7.99
46	3	5.99	0.59	7.19	12.10
47	6	11.45	2.13	6.92	12.21
48	0	23.21	3.79	4.86	11.42
49	13	11.56	1.66	6.35	10.20
50	2	30.36	3.35	3.26	12.81
51	0	9.40	0.71	2.50	10.70

Definitions:

- **In this report, primary care provider includes physicians (MD, DO) and advanced practice providers (Physician Assistant, Nurse Practitioner) with a specialty of Family Medicine, Internal Medicine, General Primary Care, Geriatrics or Obstetrics and Gynecology.**
- **"OB/GYN and reproductive health care providers" are providers specializing in obstetrics and gynecology services.**

Data Notes:

- **Perinatal data at the zip code level are not available for ZIP Code areas with fewer than 10 births during the 3-year period or ZCTAs with for ZCTAs with a population of fewer than 30 females ages 15-19. Additionally, birth data without a valid zip code can only be attributed to the county level or above. Total counts of births at zip code, county, and city level differ due to the reasons above.**

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