THE COUNCIL
OF THE CITY OF NEW YORK
CHRISTINE C. QUINN, SPEAKER

ACCESS TO SCREENING MAMMOGRAPHY IN NEW YORK CITY

FACILITY WAIT TIMES, LOCATIONS AND PROXIMITY TO TRANSPORTATION

October 2009

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EXECUTIVE SUMMARY

Introduction

- One in eight women in the United States will develop breast cancer in her lifetime.
- In New York City alone, each year approximately 5,000 women will learn they have breast cancer and approximately 1,200 women will die from breast cancer in New York City.
- According to the Centers for Disease Control and Prevention (CDC), mammograms have been shown to reduce breast cancer mortality.

Which Women Are Not Getting Mammograms

- Last year in New York City, 77.8 percent of women 40 years or older reported having received a recent screening mammogram, meaning approximately 430,000 did not have a recent mammogram.
- Some women are much less likely to get a mammogram:
    - Only 62.1 percent of uninsured women have received a recent mammogram.
    - Women who have a personal doctor are 28 percent more likely to receive a screening mammogram than women who do not have a personal doctor.

Why Women Don't Get Mammograms

- Past research on why women do not get a screening mammogram reveals several possible explanations:
    - knowledge or attitudes toward mammography,
    - physician referrals,
    - cost or insurance status,
    - facility wait times, and
    - travel burden, although the research is mixed on this factor.

Identifying Issues with Mammography in NYC

- This study examines two potential reasons women may not be getting mammograms in New York City, facility wait times and travel burden.
- Researchers called all 17 public facilities and a random sample of 100 private facilities to estimate the average wait time for a mammogram appointment.
- To analyze travel burden, ArcGIS was used to map facility locations, subway lines, bus lines, and neighborhood mammogram rates.

How Long Women In NYC Wait for a Mammogram

- The citywide average wait time is 18 days, or 2.6 weeks.
- 59 percent of facilities could see a patient within one week.
- Only 14 facilities, or 13.3 percent, had long wait times of four weeks or more.
- Of the facilities with long wait times, 50 percent refer patients to other providers.
- Among facilities with wait times within one week, 40.3 percent offer evening hours and 54.8 percent offer weekend hours. However, among facilities with wait times of four weeks or more, only 28.6 percent offered evening or weekend hours.
- In a second phase of calls, facilities with long wait times reported problems with reimbursements, staffing, and equipment.
- Public facilities, on average, had shorter wait times, with the exception of one outlier.
- The Bronx had the shortest average wait time at 1.2 weeks and Manhattan had the longest average wait time at 4.1 weeks.
- Neighborhoods with the shortest average wait times had average mammogram rates of 80.3 percent. Additionally, neighborhoods with wait times of between two and four weeks had mammogram rates of between 74 and 75 percent. However, neighborhoods with the longest wait times had an average mammogram rate of 78.4 percent.

Getting There: Travel Burden to Mammogram Sites

- Mammogram facilities are not evenly distributed throughout the city.
- Although some neighborhoods do not have mammogram facilities, nearly all neighborhoods are accessible by subway or bus.
- Neighborhoods with the highest mammogram rates had an average of 7.9 subway lines and neighborhoods with the lowest mammogram rates had an average of 4.5 subway lines. However, the neighborhoods with mid-range mammogram rates do not follow this pattern. For example, Union Square-Lower Manhattan has one of the highest number of subway lines but the mammogram rate is merely on par with the citywide average.

Conclusions

- Citywide wait times are reasonable.
- Several facilities refer patients to other providers.
- Facilities with shorter wait times offer extended hours.
- Some facilities struggle with low reimbursements and adequate staffing and equipment.

- There is no consistent relationship between neighborhood wait times and mammogram rates.
- Public transportation access is not a clear barrier to mammography.

Recommendations

- More facilities should offer extended hours.
- Increase reimbursement rates for mammograms.
- Address the need for digital machinery.
- Research wait times based on medical records.
- Further research transportation access.

INTRODUCTION

It is estimated that one in eight women in the United States will develop breast cancer in her lifetime, making it one of our most serious threats to public health.[1] In New York City alone, each year approximately 5,000 women will learn they have breast cancer, the most commonly diagnosed form of cancer among women in the city.[2] Moreover, approximately 1,200 women in New York City will succumb to the disease every year.[3]

One strategy for lowering the risk of breast cancer mortality has been to encourage women to receive screening mammograms on a regular basis. According to the Centers for Disease Control and Prevention (CDC), getting regular mammograms has been shown to reduce breast cancer mortality by 20 to 35 percent in women between the ages of 50 and 60, and by approximately 20 percent among women in their 40s.[4] When breast cancer is detected early, the five year survival rate can be as high as 98 percent.[5] Due to these proven benefits of mammography, it is generally recommended women have a screening mammogram every one to two years beginning at age 40.[6] Yet despite these compelling statistics, many women do not adhere to recommended screening guidelines.

In an attempt to understand why some women may not be getting mammograms, in 2002 the New York City Council investigated wait times for mammogram appointments. The Council's report from this earlier investigation revealed long wait times to receive a screening mammogram among a sample of facilities. However, there were considerably longer wait times at private facilities than at public facilities. To facilitate patients' appointments, the Council recommended that facilities begin referring patients to other facilities with shorter wait times. One year later, the Council conducted a follow-up investigation into the same sample of facilities, revealing somewhat improved wait times.

This report builds on the Council's prior research and attempts to take a more comprehensive look at the barriers women face in getting their recommended screening mammogram. In this report, we review which women in New York City are not getting mammograms and what explanations past research offers as to why they do not get mammograms. Of the several reasons outlined, our report focuses specifically on two—the difficulty women face in making an appointment for a mammogram and the distance they travel to mammogram facilities.

WHICH WOMEN ARE NOT GETTING MAMMOGRAMS

Each October for Breast Cancer Awareness month, there are events and public awareness campaigns aimed at reminding women to receive their screening mammograms. However, many women in New York City still do not get their mammogram. According to the New York City Department of Health and Mental Hygiene (DOHMH), 77.8 percent of women 40 years or older have received a screening mammogram in the past two years.[7] Although slightly higher than the measured rate of mammography the year before, the rate has fluctuated between 72.9 and 77.8 percent over the past several years.[8] Even in the year with the highest measured rate, there were still approximately 430,000 women 40 and older not receiving their screening mammogram. Moreover, there are marked differences among the women who do and do not receive their mammograms.

The NYC DOHMH has further examined which women in the city are not getting mammograms. As might be expected, they found that women without health insurance are by far the least likely to have received a mammogram in the past two years.[9] Whether women have a personal doctor also seems to be related to the likelihood they receive a screening mammogram. Women who have a personal doctor are 28 percent more likely to receive their screening mammogram than women who do not have a personal doctor.[10]

Women's mammogram rates also vary according to their age and race or ethnicity. Women between the ages of 40 and 44 are the least likely to have had a recent mammogram whereas women between the ages of 45 and 64 are the most likely to have received a mammogram in the past two years.[11] Women who identify as Hispanic and non-Hispanic Black have higher rates of mammogram compliance, at 81.7 and 81.2 percent respectively.[12] In comparison, women identifying as non-Hispanic White and Asian or Pacific Islander report lower rates of mammogram compliance, at 75.5 and 71.4 percent respectively.[13]

Table 1

Which Women are Getting Mammograms

	Percent Receiving Mammograms
Health Care Access	
Have a personal doctor	79.9
Do not have a personal doctor	57.3
Uninsured	62.1
Age	
40-44	67.2
45-65	81.2
65+	78.8
Race/Ethnicity	
Hispanic	81.7
Black Non-Hispanic	81.2
White Non-Hispanic	75.5
Asian/Pacific Islander	71.4
Other	75.9

Source: NYC DOHMH Community Health Survey, 2008

WHY WOMEN DON'T GET MAMMOGRAMS

Although these statistics indicate which women in the city are more likely to have received a mammogram, they do not reveal the more personal or contextual reasons women may not receive mammograms. Previous research on the subject offers several possible explanations. Broadly, these include knowledge or attitudes toward mammography, cost and insurance status, lack of physician referrals, facility-related factors, and travel burden to mammogram sites.

Knowledge and Attitudes toward Mammography

Despite the high incidence of breast cancer nationally and in New York City, some women remain uneducated about the need for mammograms and their individual risk for breast cancer. One multi-state survey of nearly 3,000 women found that the most common reason they did not get a mammogram was their belief that it was not important.[14] In another study targeting older women, only 35 percent knew that older women were at greater risk for developing breast cancer.[15] Even though 95 percent of these women knew that early diagnosis increases the chances of surviving breast cancer, only 30 percent thought they were personally at risk for developing breast cancer.[16]

Some women may believe they are at lower risk in part because they consider themselves generally in good health. In one survey of women over 40, women who classified themselves as in excellent or good health were significantly less likely to have had a prior mammogram than were women who rated their health as fair or poor.[17] This sentiment was found again in another study in which women who failed to keep their mammogram appointments were significantly more likely to believe that they did not need a mammogram unless they were sick.[18] Even among women who understand the need for a mammogram, other personal barriers may exist, including discomfort or embarrassment related to the procedure.[19] These attitude- or knowledge-based barriers have been cited in several other articles as well.[20]

Physician Referrals

Primary care providers play an important role in educating patients about individual health risks and the need for screenings, including mammograms. A recent analysis of National Health Interview Survey data on screening mammography found that most women who did not receive a screening mammogram reported not having a physician referral for a mammogram.[21] Additionally, among women who faced difficulty accessing health care generally, those who had seen a primary care doctor within the last year were almost twice as likely to have received a mammogram.[22] This trend is apparent among New York City women as well. As reported by the New York City DOHMH, 79.9 percent of women with a personal doctor reported having a screening mammogram compared to 57.3 percent of women without a personal doctor.[23]

Cost and Insurance Status

The cost of the procedure may present another barrier to women receiving a screening mammogram. This may be a function of insurance status or coverage, with some women having to pay out-of-pocket for the procedure or having to make a co-payment to cover the balance not covered by insurance. As the DOHMH has reported, uninsured women in New York City are significantly less likely than insured women to receive a screening mammogram.[24] This is unsurprising, especially in light of past research on the link between cost and insurance status and mammogram compliance. According to a report by the Government Accountability Office (GAO), cost is the greatest barrier women face nationally in obtaining a mammogram, with lower income and uninsured women having lower than average screening rates.[25] Moreover, a review of National Health Interview Survey data revealed most women who receive mammograms pay no out-of-pocket expenses and concluded that public and HMO insurance remove at least one barrier to women obtaining mammograms.[26] Cost or insurance status as a barrier to mammography has also been noted in numerous other health studies and reports.[27]

Facility Wait Times and Transportation Burdens

Studies have established a link between long waiting times for appointments and inconvenient hours with patients' nonattendance for various types of healthcare appointments.[28] A few studies have found a relationship between appointment wait times and mammogram usage in particular. One study found that when the wait time for a mammogram appointment was under two weeks, 15 percent of women failed to keep their appointments and when the wait time increased to 14 to 27 days, the nonattendance rate increased to 26 percent.[29] Curiously, when the wait time increased to more than 28 days, the nonattendance rate dropped slightly to 22 percent. The authors speculated that some women who are very motivated to have annual screening mammograms pre-schedule them far in advance and go at about the same time each year.[30] However, for those who are less apt to schedule in advance and have to wait several weeks until their appointment, failing to remember the date and time may cause them to miss their appointment.[31] In another study of nonattendance for mammogram appointments, 20 percent of women who missed their appointment reported they either forgot or were confused about their appointment time.[32]

Past research on the relationship between travel burden and health care utilization is less consistent than the research on wait times and mammogram use. Some studies have found longer travel associated with lower usage and other studies have found no relationship at all. At least four studies have found women who live farther from mammogram facilities are less likely to receive a screening mammogram.[33] However, three of these examined patient populations outside of the United States and the fourth study examined a narrow segment of the US population, women eligible for free mammogram services at military treatment facilities. Moreover, one of the international studies did not account for socioeconomic differences among the women they researched.[34]

Several other studies that examined the connection between travel burden and women's likelihood of getting a mammogram found no such relationship.[35] All but one of these focused on patient populations within the United States. Three focused on statewide mammogram rates—in California, Virginia, and Illinois. They each analyzed women's mammogram utilization according to their distance from the nearest facility. In California, there was no relationship between travel burden and mammography among urban women, but rural women living farther from mammogram sites were less likely to get a mammogram. In Virginia and Illinois, no relationship between travel distance and mammogram usage was found. The Chicago study was the only one of these articles to examine an inner-city population. In Chicago, researchers explored whether women receiving a late stage breast cancer diagnosis lived farther from mammogram facilities than women receiving an earlier stage diagnosis. The authors used late stage diagnosis as a proxy for low screening mammogram utilization. To determine travel burden, they calculated the number of transit lines and mean distance to the nearest five mammogram facilities for each patient. The study found no relationship between women's proximity to transportation or facilities and their stage at diagnosis.

Given this past research on why women don't get mammograms, we hypothesized that long wait times might discourage some women from receiving a screening mammogram. Additionally, despite the inconsistent research on travel burdens and mammography, we opted to review transportation access across the city. To date, we have found no published report reviewing access to public transportation in different New York City neighborhoods and rates of mammography. This report attempts a first glance at the potential relationship between mammography and travel burden in New York City.

IDENTIFYING ISSUES WITH MAMMOGRAPHY IN NYC

To determine the wait time to receive a mammogram appointment in New York City, the City Council conducted a telephone survey of mammogram providers in all five boroughs. The survey occurred over the course of several days during late February and early March 2009. According to the U.S. Food and Drug Administration's list of mammogram providers, there were 187 public and private facilities that offered mammograms citywide at that time. Of these, 170 were private and 17 were public facilities. The Council surveyed all public facilities, due to their small number, and a random sample of 100 private facilities. These 117 facilities were then randomly assigned to three callers.

The callers were female, read from a uniform script, and did not identify themselves as staff of the City Council. Upon reaching a person at the facility, they requested the date of the earliest available screening mammogram appointment. If prompted by the representative from the facility, the caller would reply that she was 49 years old, had a physician's referral, was insured, and received her last mammogram two years ago. If

the length of time before the next available appointment exceeded four weeks, the caller would ask the facility if she could be seen any sooner and whether the facility referred elsewhere for appointments. Additionally, the caller inquired about the availability of evening and weekend appointments. If the callers did not reach a staff of the facility, they would call three times before recording the facility as not responsive. In total, 105 facilities provided information on their wait times. Of these, 90 were private facilities and 15 were public facilities.

In addition to the survey of facilities, we used ArcGIS to examine the relationship between public transportation lines, mammogram facility location, and United Hospital Fund (UHF) neighborhood mammogram rates. This spatial analysis attempts to determine whether lack of transportation in some neighborhoods coincides with lower rates of mammography. Although not thorough enough to determine causation, the analysis is a preliminary attempt to determine if any patterns are evident that might warrant further research.

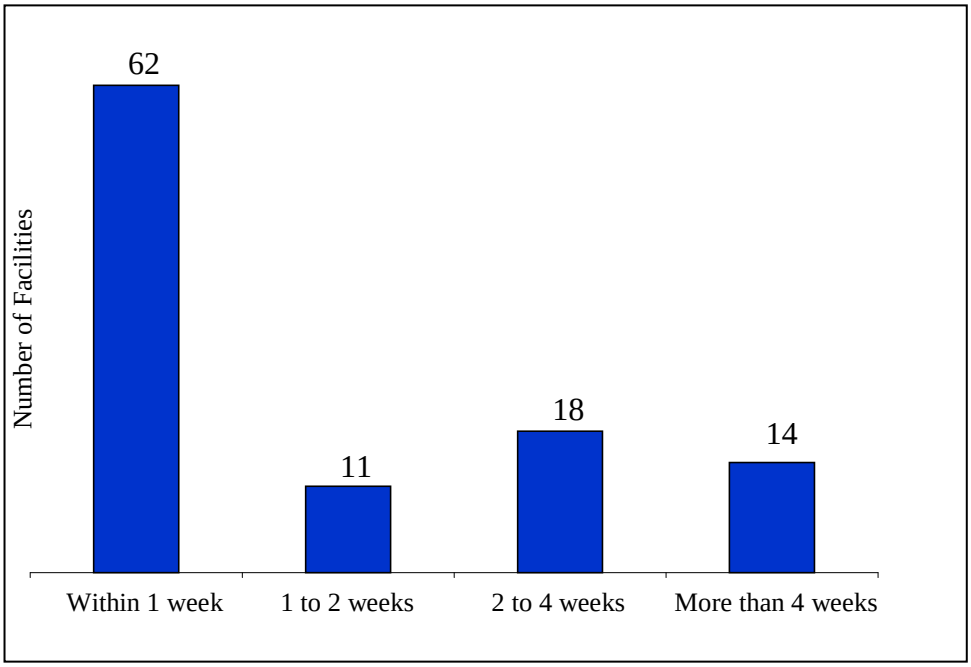
HOW LONG WOMEN IN NYC WAIT FOR A MAMMOGRAM

Citywide Wait Times

We found a much lower average wait time for mammogram appointments than the previous two Council investigations. The citywide average we found was 18 days, or 2.6 weeks.[36] Wait times across facilities ranged from one day to over 300 days. For most facilities, wait times for appointments were not long (see Figure 1). Fifty nine percent of facilities could see a patient for a screening mammogram within one week (See Appendix A). Another 10 percent of facilities could provide a mammogram within one to two weeks. Only 14 facilities, or 13.3 percent, had wait times of more than four weeks. Of the 14 facilities with wait times over 4 weeks, 50 percent reported that they refer patients to other facilities for screening mammograms.

Figure 1

Mammogram Appointment Wait Times



Only thirty nine percent of all facilities offer evening appointments during the week and half of all facilities offer weekend appointments. As might be expected, facilities offering weekend appointments tended to have shorter wait times (see Table 2). Similarly, a greater share of facilities with wait times shorter than four weeks offer evening hours than facilities with wait times longer than four weeks.

Table 2

Wait Times and Availability of Extended Hours

Facility wait time	Percent offering evening hours	Percent offering weekend hours
Within 1 week	40.3	54.8
1 to 2 weeks	54.5	54.5
2 to 4 weeks	33.3	50.0
Over 4 weeks	28.6	28.6

To better understand why some facilities have longer wait times, we called the 14 facilities with wait times of four weeks or longer (See Appendix B). The representatives reached at 13 of the facilities offered a variety of explanations particular to their practice, but some common themes were evident. Five facilities indicated that staffing shortages cause longer wait times, with four of them citing low reimbursements as the reason for their staffing shortage. Additionally, four facilities indicated they cannot afford the number or type of machines they would like. Two of the four mentioned that digital mammography machines would increase their productivity and shorten their wait times. A few facilities said their longer wait times were not indicative of any problem. Rather, two facilities said they have a higher demand for their services because their location is more convenient or they provide higher quality services. Two facilities indicated they try to schedule appointments farther in advance with their patients.

We also examined the 12 facilities not reporting wait time information. Two of these, The New Parkway Hospital and St. John's Queens Hospital, were permanently closed at the time of our calls. Additionally, three were either not accepting patients or had stopped providing mammograms. Another facility provided mammograms, but only for inpatients, since it is a long-term care facility. One of the facilities moved to a voice mail system because they formerly had difficulty with their live phone system. In their old phone system, they found women would call with detailed questions that the operators could not answer. Now, women call the facility and leave a message, which is returned within 24 hours. The remaining five facilities were either unreachable or had no explanation for why we could not reach their staff in our original calls.

Public vs. Private Facilities

In the Council's prior two reports, longer wait times were reported for private facilities than for public facilities. This time, we found again public facilities, on average, had shorter wait times, with the exception of one outlier. Private facilities reported wait times from one to 170 days with an average wait time of 17.2 days, or 2.5 weeks. Approximately half of private facilities could see patients for a screening mammogram within one day. However, 13 facilities reported wait times of four weeks or longer.

The average wait time for public facilities was slightly longer, but largely due to one facility with a very long wait time. Wait times at public facilities were, on average, approximately 25 days, or 3.6 weeks. However, 10 of the 15 facilities reached could see a patient within one day. One public facility reported they were booking appointments for the following year, which skewed the average somewhat given the relatively short wait times of the other facilities contacted. Moreover, this particular facility reported they refer patients to another facility for mammograms if they cannot wait. Without this one outlier, the average wait time for an appointment among public facilities was 4.7 days, or 0.67 weeks.

Borough Wait Times

There is some variation among the average wait times by borough. They range from eight days in the Bronx to 29 days in Manhattan (see Table 3). The average wait times in Staten Island and Manhattan were somewhat longer due to particular facilities with very long wait times. In Manhattan, even though many facilities could see a patient within a few days to a week there were a few facilities that had much longer wait times, thus increasing the borough's average wait time. In Staten Island, only three facilities were reached and of those, one had a wait time of 61 days.

Table 3

Average Wait Times by Borough

	Days	Weeks
Bronx	8.4	1.2
Queens	11.1	1.6
Brooklyn	17.6	2.5
Staten Island	27.7	4.0
Manhattan	28.6	4.1

Neighborhood Wait Times and Mammogram Rates

We attempted to gain a sense of the difference in wait times across neighborhoods by averaging the wait time of facilities in each neighborhood. If wait times were longer in certain neighborhoods, we speculated the mammogram rates in those neighborhoods might also be lower, indicating some women may not be getting their mammogram due to the long wait time. We did find that in neighborhoods with the shortest average wait times the mammogram rates were, on average, higher (See Appendix C). Additionally, neighborhoods with wait times of between two and four weeks had mammogram rates approximately 7.3 percent lower. However, for the neighborhoods with the longest wait times, the mammogram rate was again somewhat higher. As prior research has also shown this pattern, it is possible some neighborhoods with longer wait times may have more women who tend to schedule their appointments farther in advance. This is also supported somewhat by the explanations offered by two of the facilities with longer wait times that we called.

There are several caveats to these findings. Mainly, this neighborhood analysis does not factor in women's choice of facilities. Women might choose one facility over another due to where their physician refers, which facilities accept their insurance, or personal preference, rather than based on the wait time for an appointment. Moreover, some women may opt to receive their mammograms outside of the neighborhood where they

reside. Our comparison of neighborhood wait times and mammogram rates therefore is not conclusive evidence that some women in New York City fail to get a mammogram due to long wait times. Our findings do indicate the need for additional research into this issue, whether by surveying women on their mammogram usage or by analyzing hospital-specific information on appointment wait times and mammogram usage.

GETTING THERE: TRAVEL BURDEN TO MAMMOGRAM SITES

Using ArcGIS, we mapped all 187 mammogram facilities listed on the FDA list of registered sites in New York City. If travel burden was a barrier to women receiving mammograms, we expected to find neighborhoods with lower mammogram rates would have fewer facilities nearby. Additionally, we expected neighborhoods with lower mammogram rates would generally have fewer subway lines.

Viewing these maps, we did find mammogram facilities tend to be clustered in some neighborhoods more than others (see Appendices D-H). In particular, facilities are clustered throughout the Bronx and Queens and in downtown Brooklyn and the east side of Manhattan. Additionally, there are several pockets of the city that have no mammogram facilities nearby, particularly in Kingsbridge-Riverdale, parts of Pelham-Throgs Neck, Southeast Queens, parts of Borough Park and Canarsie-Flatlands, much of Staten Island, and some smaller areas of Manhattan. Despite this inconsistent distribution of facilities across neighborhoods, there is no apparent relationship to these neighborhoods' mammogram rates when looking at the maps alone.

To further analyze accessibility by neighborhood, we reviewed whether these facilities are accessible by city subway and bus lines. Because the New York City subway system covers much of the city, women in many neighborhoods seem to have adequate geographic access to mammography services. In the Bronx, all but a couple of facilities are within a quarter mile, or walking distance, from subway lines. However, the Kingsbridge-Riverdale and parts of the Pelham-Throgs Neck and Northeast sections of the Bronx are less accessible via subway (Appendix I). In Queens most mammogram facilities are located along the subway lines (Appendix J). Several facilities in the eastern portion of the borough, however, are not within walking distance to subway lines. Moreover, large portions of Queens are not accessible by subway, potentially making travel to a mammogram appointment more difficult. All but 10 mammogram facilities in Brooklyn are accessible by subway (Appendix K). In Brooklyn, Canarsie, Flatlands, and parts of Sheepshead Bay seem the least accessible by subway. In Manhattan, most of the facilities are within walking distance to a subway line, with a few farther along the east side just somewhat outside of a quarter mile radius (Appendix L). Staten Island has arguably the least accessible mammogram facilities when considering train lines because there are fewer facilities and those facilities, with one exception, are not accessible by train (Appendix M).

Visually, there are some disparities among neighborhoods' access to subway lines and stations. Taking a count of the subway lines that service a neighborhood and the number of subway stations in each neighborhood further illustrates this disparity (see Appendix N). Yet it is unclear from the maps alone whether this disparity accounts for different rates of mammography across neighborhoods. Analyzing the neighborhoods grouped by mammogram rate offers only slightly more insight. The neighborhoods with the highest mammogram rates do have, on average, more subway stations and mammogram facilities within one mile. The neighborhoods with the lowest mammogram rates also tend to have fewer subway stations and fewer facilities nearby. However, the neighborhoods with mid-range mammogram rates do not clearly fall into this pattern. The neighborhoods with the second highest range of mammogram rates have slightly fewer subway lines and stations than the neighborhoods with somewhat lower mammogram rates. This may be in part due to a comparable portion of uninsured residents or slightly fewer nearby mammogram providers.

There are a few neighborhoods where access to subway lines does not seem related to mammogram rates. For example, the Southeast Queens neighborhood has no subway lines but the city's second highest mammogram rate. Similarly, Northern Staten Island has only one train line and a mammogram rate higher than the citywide average. On the other hand, Union Square-Lower Manhattan has the second highest number of subway lines of any neighborhood but the mammogram rate there is on par with the citywide average. One possible explanation for these exceptions may be the tendency of residents in some neighborhoods, particularly in Queens and Staten Island, to drive instead of using public transportation.

Although subway access varies greatly across neighborhoods, New York City is also served by a vast network of public bus lines. Mapping these bus lines in each borough indicates few areas of the city lack access to either mode of public transportation (see Appendices O-S). This may, in part, explain why there is no clear relationship between subway access and mammogram rates, except for the neighborhoods with the highest mammogram rates and number of subway lines.

CONCLUSIONS

Citywide Wait Times are Reasonable

Our research into wait times for mammogram appointments presents some encouraging news. Wait times for screening mammogram appointments are generally low, with a citywide average wait time of 2.6 weeks and nearly 70 percent of facilities able to schedule an appointment within two weeks. Taken in conjunction with a slightly higher citywide mammogram rate last year than the year before, our finding on wait times indicates New York City providers are doing a better job of providing timely screening mammograms to women. We hope more women will be encouraged by this finding and motivated to get a mammogram.

Several Facilities Refer Patients to other Providers

In the Council's 2002 report on mammogram appointment wait times, we recommended that facilities with long wait times refer patients to practices with shorter wait times. In our research for this report, we discovered that half of the facilities with long wait times do refer to other facilities. This practice seems to be an improvement over the past several years. However, there are still several facilities that have not adopted the practice and that should follow the example of their fellow providers in New York City.

Facilities with Shorter Wait Times Offer Extended Hours

As might be expected, the facilities with shorter wait times tended to offer evening and weekend hours. Among facilities with wait times within one week, 40.3 percent offer evening hours and 54.8 percent offer weekend hours. However, among facilities with wait times of four weeks or more, only 28.6 percent offered evening or weekend hours. The facilities with longer wait times could therefore likely reduce their wait times by adding extended hours for their patients. Additionally, evening and weekend hours would offer a more convenient option for working women who may not have the ability to take time from their weekday schedule to receive a mammogram.

Some Facilities Struggle with Low Reimbursements and Adequate Staffing and Equipment

Among the facilities with long wait times, several reported similar issues. Many were not able to hire enough staff and offer longer hours. Others struggled to provide high quality and efficient service because they lacked enough mammogram machines or digital mammogram machines. They suggested these issues could be remedied if reimbursements for mammogram services were higher or if they could receive assistance with acquiring new machinery.

No Consistent Relationship Between Neighborhood Wait Times and Mammogram Rates

This study reveals no consistent pattern between neighborhood mammogram rates and average wait times for mammogram appointments. Neighborhoods with the shortest average wait times of less did have an average mammogram rate higher than the citywide average. Additionally, the neighborhoods with average wait times of two to four weeks did have mammogram rates slightly lower than the neighborhoods with shorter wait times. However, the four neighborhoods with the longest wait times had, on average, mammogram rates that slightly exceeded the citywide rate. This may be due to higher demand for these particular facilities or women scheduling their appointments farther in advance, explanations partially supported by our conversations with two facilities and by one previous study on mammogram wait times. Alternatively, it might be due to our level of analysis, on the neighborhood level rather than the individual level. Because some women might seek services outside of their neighborhood or because there might be variation within our large neighborhoods, this study does not rule out that a relationship between mammogram rates and wait times exists. Future research on individual patients' mammogram usage and their particular facility's wait times might be more conclusive.

Public Transportation Access Not a Clear Barrier to Mammography

Based on our mapping analysis, there seems to be no consistent citywide pattern suggesting lack of public transportation has contributed to lower mammogram rates. We found the neighborhoods with the highest mammogram rates have, on average, more subway lines. This may indicate with a certain level of convenience women are more likely to receive their mammograms. However, because this pattern is not evident among the neighborhoods with lower mammogram rates, we can not definitively conclude that public transportation is a barrier to mammography in New York City. Although several neighborhoods lack mammogram facilities, every neighborhood has access to some form public transportation, whether by subway or bus lines. Additionally, residents of some boroughs are more likely to have cars and drive rather than use public transportation.

As with our analysis of wait times and mammogram rates, using the United Hospital Fund (UHF) neighborhoods to assess transportation access among potential mammogram patients is not the ideal level of analysis. Because the UHF neighborhoods are large, they include smaller areas that have varied degrees of access to transportation. This is especially true in Queens where large portions of Flushing, Jamaica, and other neighborhoods are not within walking distance to the subway. Analyzing smaller areas and considering the frequency of public transportation schedules might reveal a clearer relationship between transportation access and mammogram rates. Additionally, focus groups or surveys of women may provide better insight as to whether access to public transportation impacts whether some women receive their mammograms, especially those living with disabilities.

RECOMMENDATIONS

More Facilities Should Offer Extended Hours

Because facilities with shorter wait times tend to offer weekend appointments, more facilities should explore ways to offer extended hours to their patients, even if only once per month. In doing so, they would reduce waiting times for appointments and alleviate the need for women with weekday work schedules to take time off from work.

Increase Reimbursement Rates for Mammograms

Several facilities we called about their long wait times indicated that insufficient reimbursement rates are burdensome and prevent them from adequately staffing their facilities or purchasing new equipment. As Congress continues to debate our national healthcare system, attention should be paid to mammogram reimbursements. Reimbursement levels are critical to mammography for two reasons. First, they ensure facilities remain financially stable and are able to provide efficient and high quality care. Second, insurance coverage for mammograms is clearly associated with higher mammogram rates in New York City. Whereas nearly 78 percent of women 40 and over in New York City have had a recent mammogram, only 62 percent of uninsured women have had a recent mammogram. Federal legislation should ensure both aspects of mammogram reimbursements are addressed. A first step could be to make sure all insurers cover mammograms, such as Representative Jerrold L. Nadler has called for in H.R. 995 of 2009.

Address the Need for Digital Machinery

Another recurring theme among facilities with long wait times was the need for mammogram machinery. As indicated by providers, digital machinery tends to be a faster and better quality method for taking and reviewing mammograms. Some facilities suggested they are not able to conduct as many mammograms because they lack any or enough digital mammogram machines. The degree to which facilities in the city require additional machinery should be explored further. Additionally, where facilities are unable to provide mammograms due to a lack of machinery, grants for capital upgrades should be provided.

Research Wait Times Based on Medical Records

Although wait times citywide are reasonable, there are several facilities with considerably longer wait times. If some women miss their appointments because the wait time is longer at their facility, our data would not capture it. Rather, this report only reviews neighborhood patterns to identify where mammogram rates might be associated longer wait times. As indicated above, that level of analysis is complicated by the fact that

many women might seek care outside of their neighborhood. Previous research in other locations has used mammogram providers' patient records to analyze whether women with longer wait times for appointments tend to miss their appointments more. However, we are aware of no similar type of analysis conducted recently in New York City. Such research, especially if comparing different facilities' no-show rates for mammograms, would be vitally important to addressing barriers to mammography among some women.

Further Research Transportation Access

Our research did not reveal a consistent relationship between access to public transportation and mammogram usage in neighborhoods. A more detailed analysis should be conducted that accounts for other factors, such as number of bus lines, frequency of service, households with cars, and variation within neighborhoods.

Appendix A

Facilities with Wait Times Within 1 Week

Facility	Borough	Wait (days)	Wait (wks)	Public/Private
All County LLC	Queens	1	0.14	Private
Doshi Diagnostic Imaging Services	Brooklyn	1	0.14	Private
Narrows MRI & Diagnostic Radiology, P.C.	Brooklyn	1	0.14	Private
X-Ray Technology of Bay Ridge, Inc.	Brooklyn	1	0.14	Private
Radiology Associates	Brooklyn	1	0.14	Private
Harlem Hospital Center	New York	1	0.14	Public
NYHTC-Harlem Health Center	New York	1	0.14	Private
C. P. Advanced Imaging PLLC	New York	1	0.14	Private
Canal Radiology Associates	New York	1	0.14	Private
Doshi Diagnostic Imaging Services	New York	1	0.14	Private
New York Hotel Trades Council Health Center	New York	1	0.14	Private
Doshi Diagnostic	Brooklyn	1	0.14	Private
Cumberland Diagnostic & Treatment Center	Brooklyn	1	0.14	Public
Williamsburg Imaging	Brooklyn	1	0.14	Private
Doshi Diagnostic Imaging - Brooklyn Ave	Brooklyn	1	0.14	Private
Kings County Hospital Center	Brooklyn	1	0.14	Public
East New York Diagnostic and Treatment Center	Brooklyn	1	0.14	Public
Baik Hyun Kang, M.D.	Queens	1	0.14	Private
Mosholu Park Radiology, P.C.	Bronx	1	0.14	Private
North Central Bronx Hospital	Bronx	1	0.14	Public
Hillcrest Radiology Associates	Queens	1	0.14	Private
Jatinder Singh, M.D.	Queens	1	0.14	Private
Staten Island Physician Practice	Staten Island	1	0.14	Private
Distinguished Diagnostic Imaging, P.C.	Bronx	1	0.14	Private
Healthcare Radiology and Diagnostic Systems PLLC	Bronx	1	0.14	Private
Columbus Medical Institude of New York	Queens	1	0.14	Private
Lincoln Medical and Mental Health Center	Bronx	1	0.14	Public
NYCHHC Segundo Ruiz Belvis Diagnostic Treatment Ctr	Bronx	1	0.14	Public
Doshi Diagnostic Imaging Services	Queens	1	0.14	Private
Jamaica Hospital Medical Center	Queens	1	0.14	Private
Richmond Hill Radiology	Queens	1	0.14	Private
Doshi Diagnostics	Brooklyn	1	0.14	Private
Bellevue Hospital Center	New York	1	0.14	Public
Clement M. Barone, M.D., P.C.	New York	1	0.14	Private
Kathy Plesser MD PLLC	New York	1	0.14	Private
Medical Imaging of Manhattan, LLC.	New York	1	0.14	Private
Doshi Diagnostic Imaging Services	New York	1	0.14	Private
Doshi Diagnostic Imaging Services	New York	1	0.14	Private
New York Hospital Medical Center of Queens	Queens	2	0.29	Private
D.X.I Jackson Heights Inc	Queens	2	0.29	Private

Beekman Radiology, PLLC	New York	3	0.43	Private
Med. Dept. Joint Industry Board of the Electrical Industry	Queens	4	0.57	Private
Professional Health Imaging, P.C.	Brooklyn	4	0.57	Private
Leslie Elliott Strong, M.D.,P.C.	New York	4	0.57	Private
Metropolitan Radiological Imaging P.C.	Queens	4	0.57	Private
Doshi Diagnostic Imaging Services	Bronx	4	0.57	Private
Queens-Long Island Medical Group, P.C.	Queens	4	0.57	Private
Rockaway Imaging P.C.	Queens	4	0.57	Private
Morrisania Diagnostic and Treatment Center	Bronx	4	0.57	Public
Union Square Medical Imaging & Mammography	New York	4	0.57	Private
Jacob Lichy, M.D. & Thomas Kolb, M.D., P.C.	New York	4	0.57	Private
Doshi Diagnostic Imaging Services PC	Queens	4	0.57	Private
Queens Hospital Center	Queens	5	0.71	Public
Montefiore Medical Center North Division	Bronx	5	0.71	Private
Maimonides Comprehensive Cancer Center	Brooklyn	5	0.71	Private
Weill Cornell Imaging at New York Presbyterian	New York	5	0.71	Private
Constantin G. Constant, M.D.	Brooklyn	6	0.86	Private
Long Island Radiology Associates dba Empire Imaging	Queens	6	0.86	Private
Jacobi Medical Center	Bronx	7	1.00	Public
Queens-Long Island Med Group, P.C. Women`s Hlth Ctr	Queens	7	1.00	Private
Manhattan Diagnostic Radiology	New York	7	1.00	Private
Memorial Sloan-Kettering Cancer Diagnostic Imaging Dept.	New York	7	1.00	Private

Appendix B

Facilities with Wait Times Over 4 Weeks

Facility	Borough	Wait (days)	Wait (wks)	Referral	Facility Challenges
St. Barnabas Hospital	Bronx	35	5.00	N	Not sure why their wait time was longer.
Jamaica Hospital Medical Center	Queens	38	5.43	N	Disputed wait time recorded and offered alternative time of 2 days.
Queens Medical Imaging, P.C.	Queens	41	5.86	Y	High demand for their services. Try to schedule appointments in advance.
Bishop Orris G. Walker Jr. Health Care Center	Brooklyn	49	7.00	N	Lack digital mammogram machines, which would cut their time in half.
Maklansky Grunther Kurzban Cohen Zimmer Hyman Berson MD, PC	New York	50	7.14	Y	Providing screening and diagnostic mammograms to their patients causes a somewhat longer wait time.
Radiology Associates of Brooklyn, LLP	Brooklyn	54	7.71	N	Reimbursements are low, inadequate staffing levels and machinery.
LHHN Medical, P.C.	New York	57	8.14	Y	No answer.
Regional Radiology Outerbridge	Staten Island	61	8.71	N/A*	Reimbursements are low, inadequate staffing levels and machinery.
Main Street Radiology At Bayside	Queens	78	11.14	N/A*	High quality physicians and machines creates higher demand.
The Brooklyn Hospital Center	Brooklyn	104	14.86	N	Reimbursements low, inadequate staffing levels and machinery. Need digital machines.
Park Avenue Radiologists, P.C.	New York	108	15.43	Y	Reimbursements too low. Down a staff person at the time of our initial call. Wait time now approximately 2 weeks.
Preferred Health Partners Downtown Center	Brooklyn	119	17.00	Y	Used to offer mammogram appointments, but no longer handle them in-house. Began referring all procedures elsewhere.
New York Radiology Associates	New York	170	24.29	Y	Generally try to schedule patients farther in advance due to high demand. Facility is in an accessible location.
Gouverneur Diagnostic and Treatment Center	New York	312	44.57	Y	Facility may have been short staffed at the time of initial call. Wait time likely not nearly as long as reported by staff in our original call. Now ensuring patients who call for estimates receive more consistent information.

* No answer

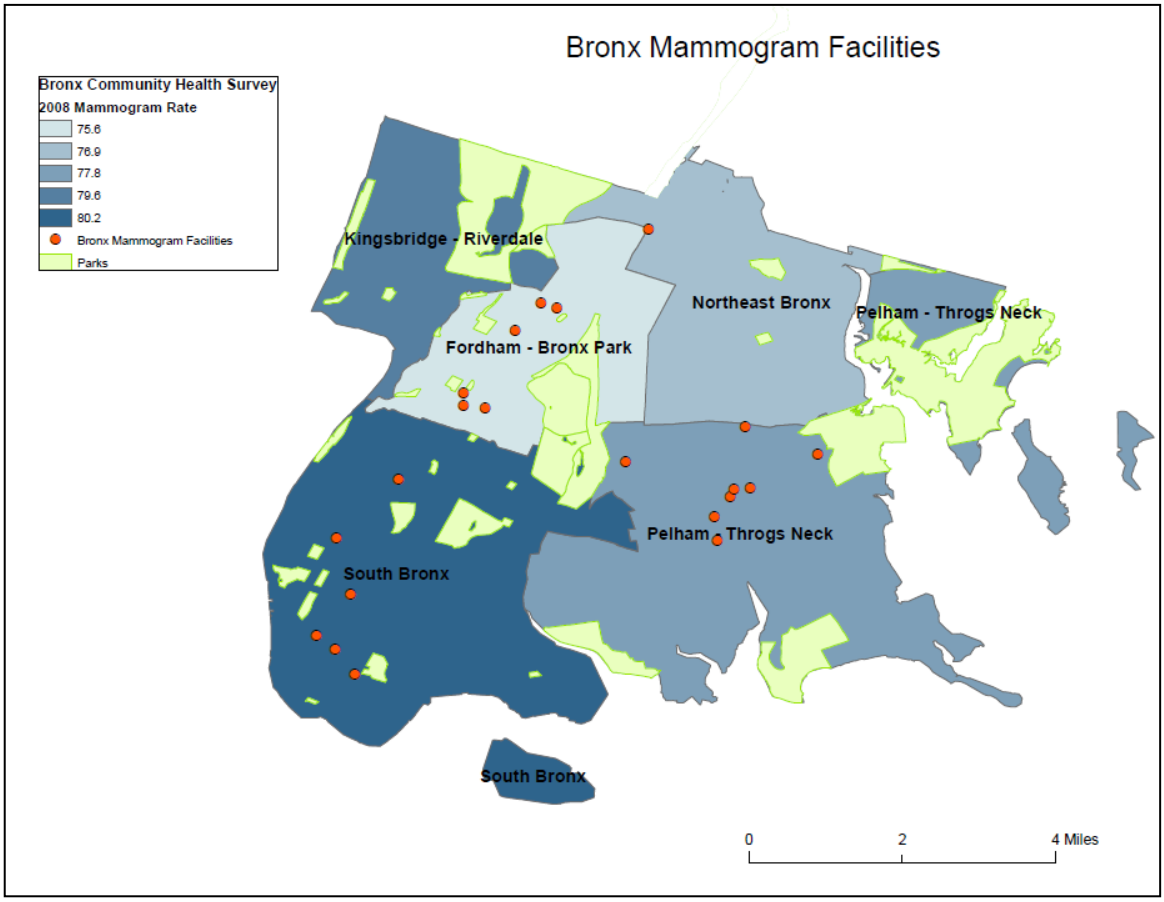
Appendix C

Neighborhood Wait Times and Mammogram Rates

Neighborhood	Mammogram Rate
Wait time within 1 week	
Flushing Clearview	79.2
Chelsea Village	84.1
Bensonhurst Bay Ridge	78.6
Jamaica	78.2
Sunset Park	80.3
Pelham Throgs Neck	77.8
Northern Staten Island	81.8
Upper West Side	76.9
Northeast Bronx	76.9
East New York	81.4
Washington Heights Inwood	87.9
East Flatbush Flatbush	80.9
Average mammogram rate	**80.3**
Wait time 1 to 2 weeks	
Southwest Queens	69.5
Fordham Bronx Park	75.6
Borough Park	77.3
West Queens	68.0
Rockaway	74.3
Central Harlem Morningside Heights	76.2
Ridgewood Forest Hills	76.2
South Bronx	80.2
Williamsburg Bushwick	78.5
Average mammogram rate	**74.1**
Wait time 2 to 4 weeks	
Union Square Lower Manhattan	77.7
East Harlem	74.7
Coney Island Sheepshead Bay	72.6
Bayside Meadows	74.0
Average mammogram rate	**74.8**
Wait time over 4 weeks	
Upper East Side Gramercy	83.4
Downtown Heights Slope	81.8
Southern Staten Island	69.6
Bedford Stuyvesant Crown Heights	78.8
Average mammogram rate	**78.4**

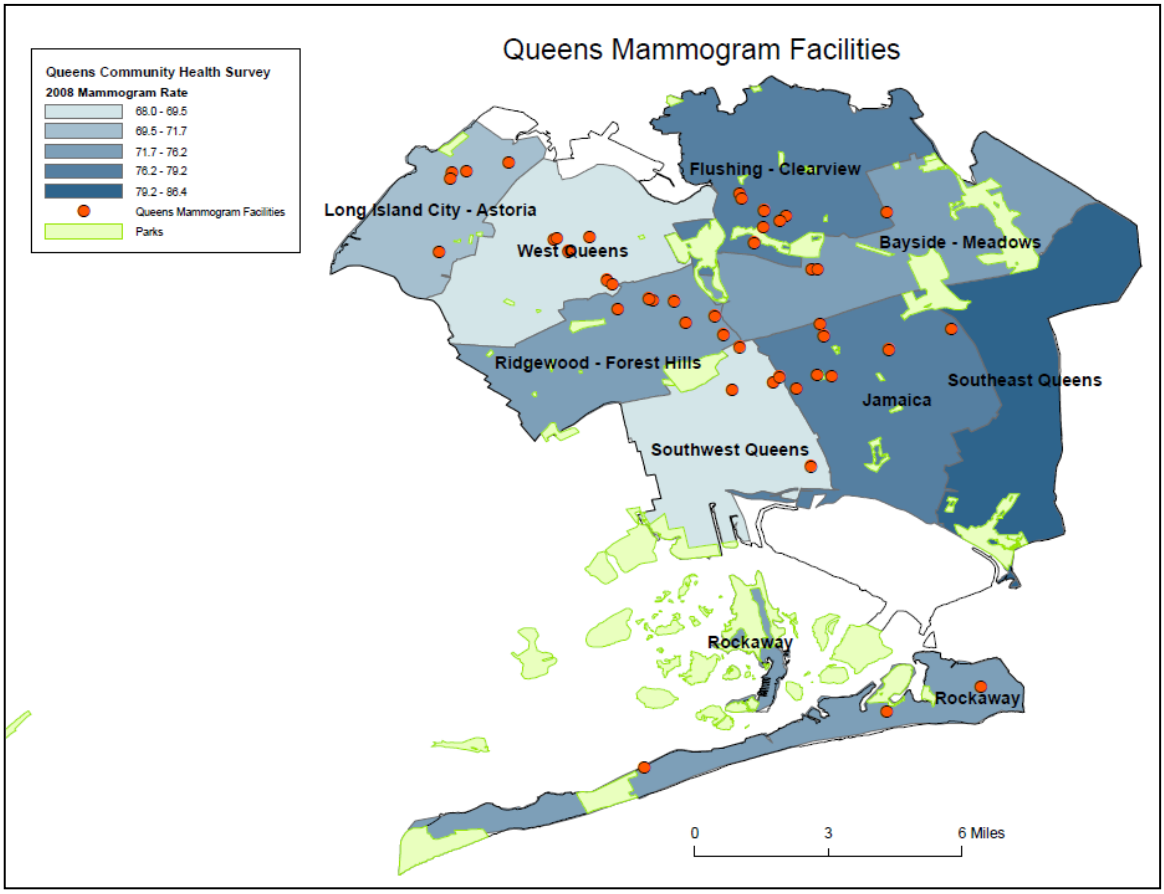
Source: 2009City Council Survey of Mammogram Facilities and 2008 Community Health Survey, New York City Department of Health and Mental Hygiene

Appendix D



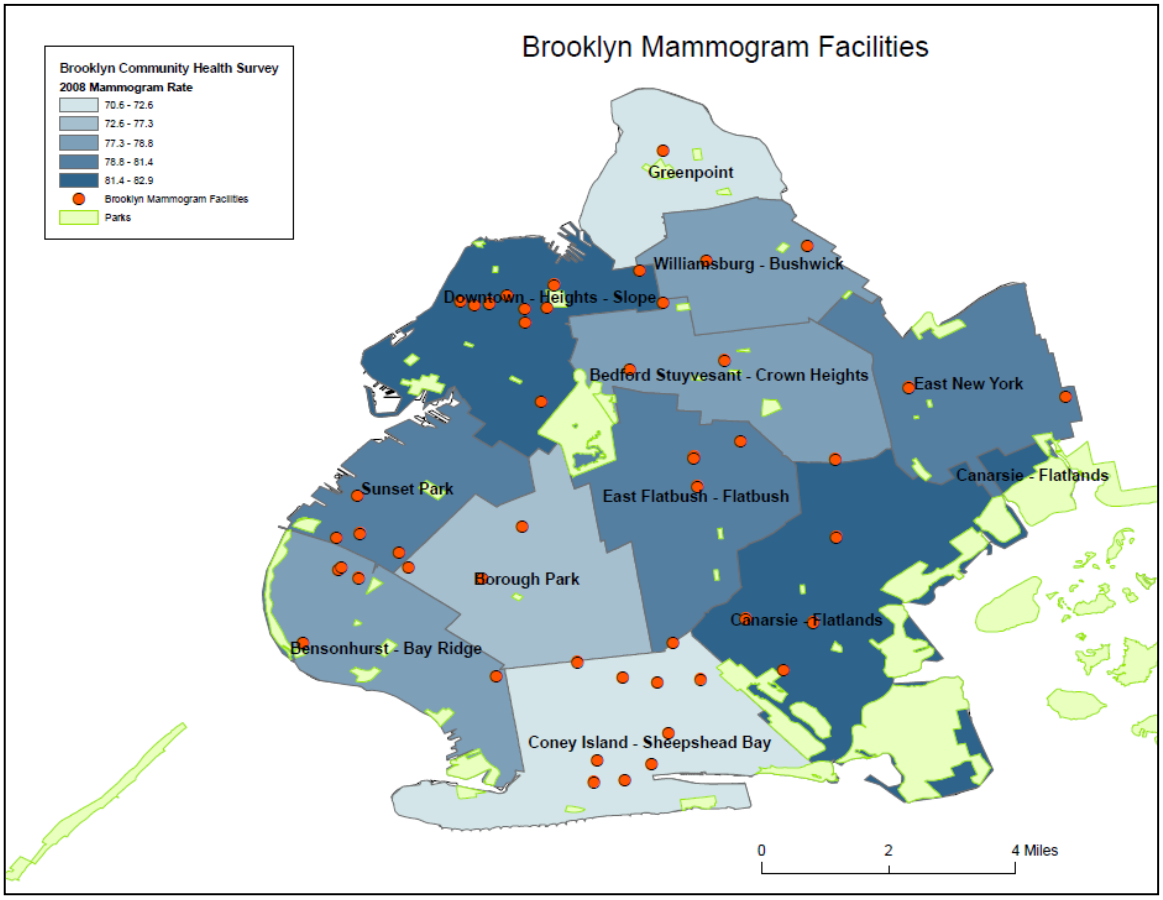
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene and FDA List of Certified Mammogram Facilities

Appendix E



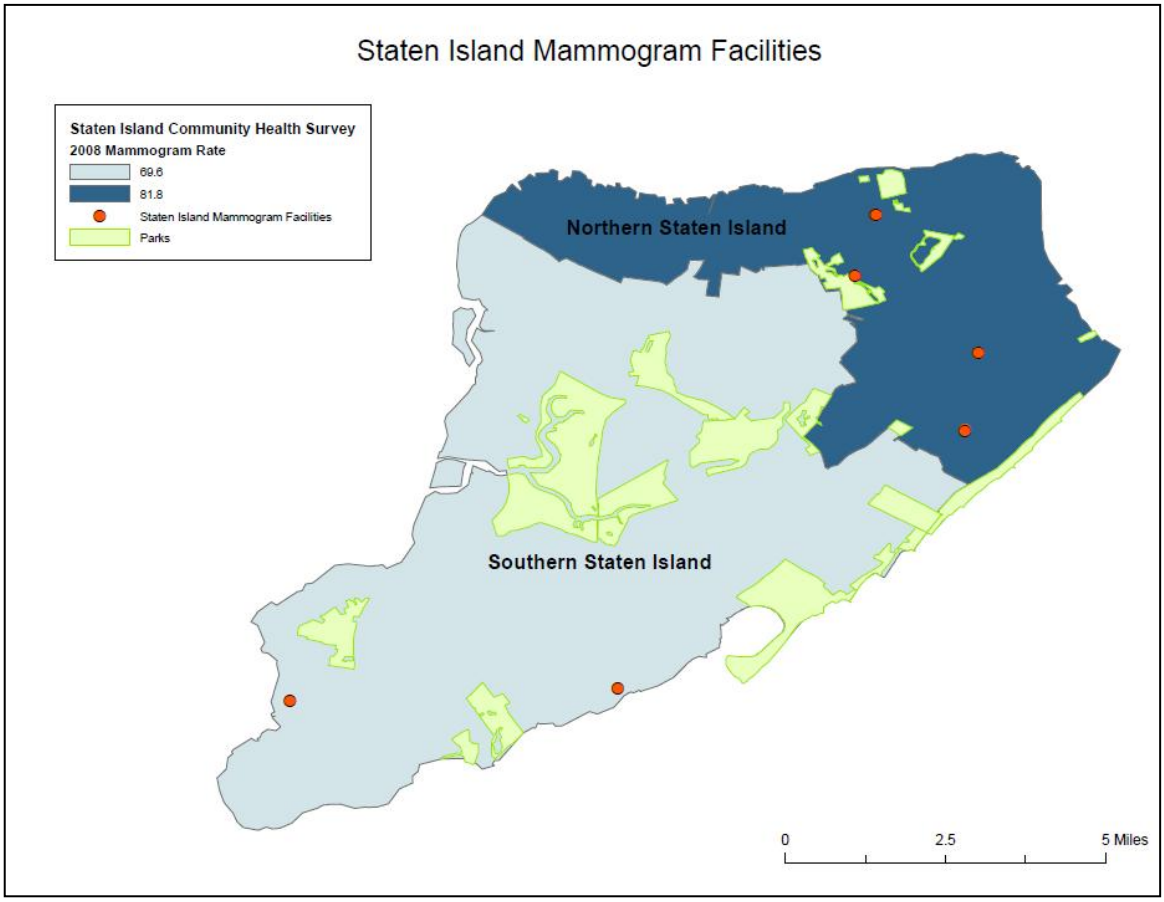
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene and FDA List of Certified Mammogram Facilities

Appendix F



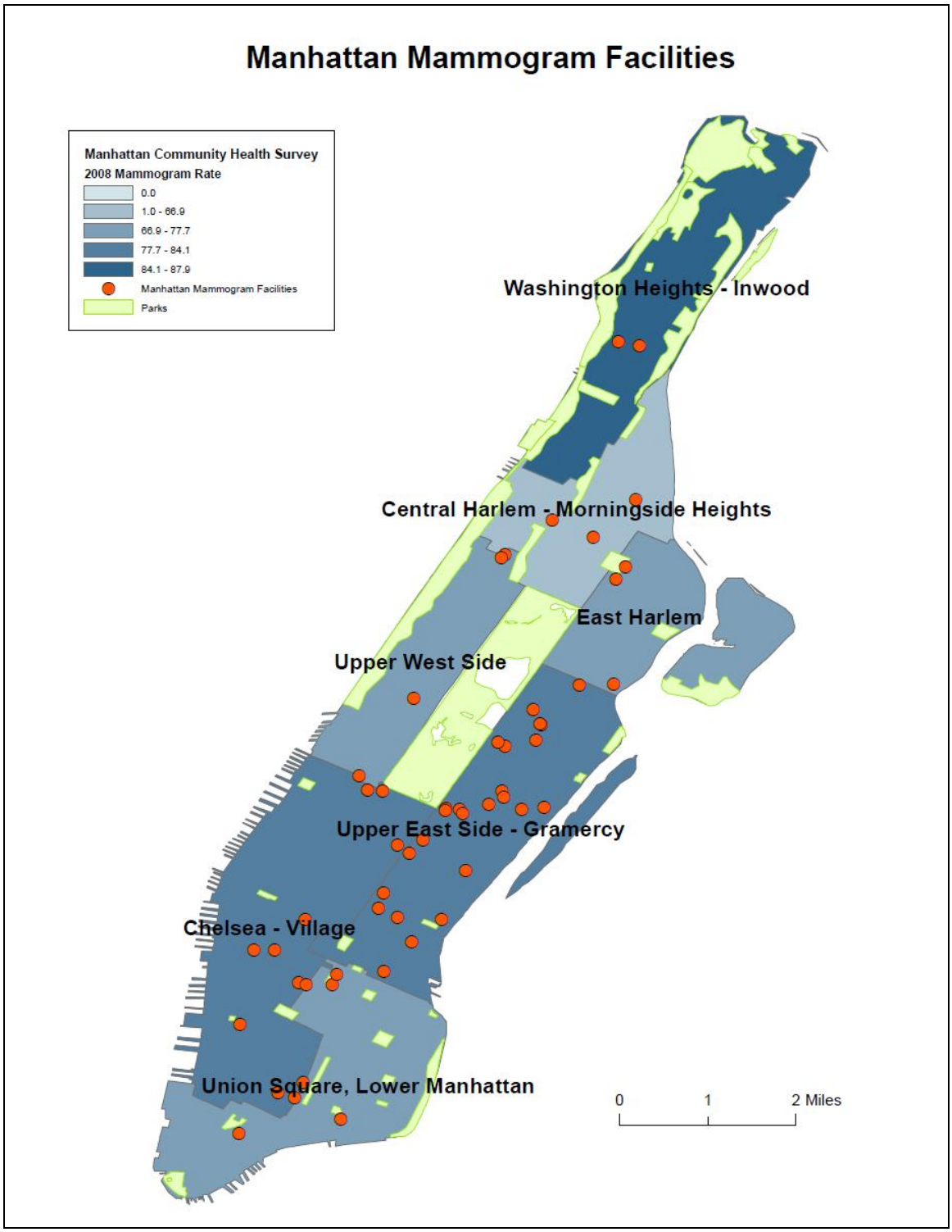
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene and FDA List of Certified Mammogram Facilities

Appendix G



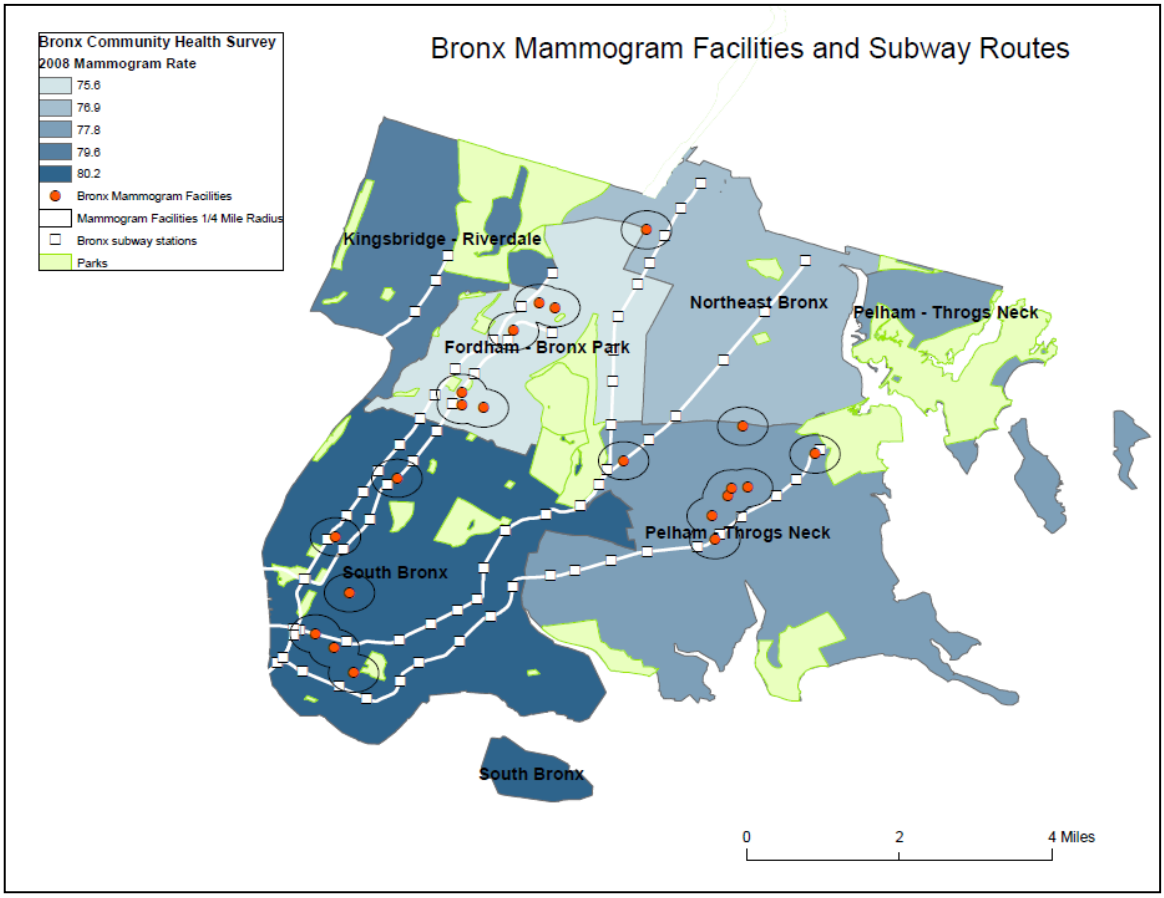
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene and FDA List of Certified Mammogram Facilities

Appendix H



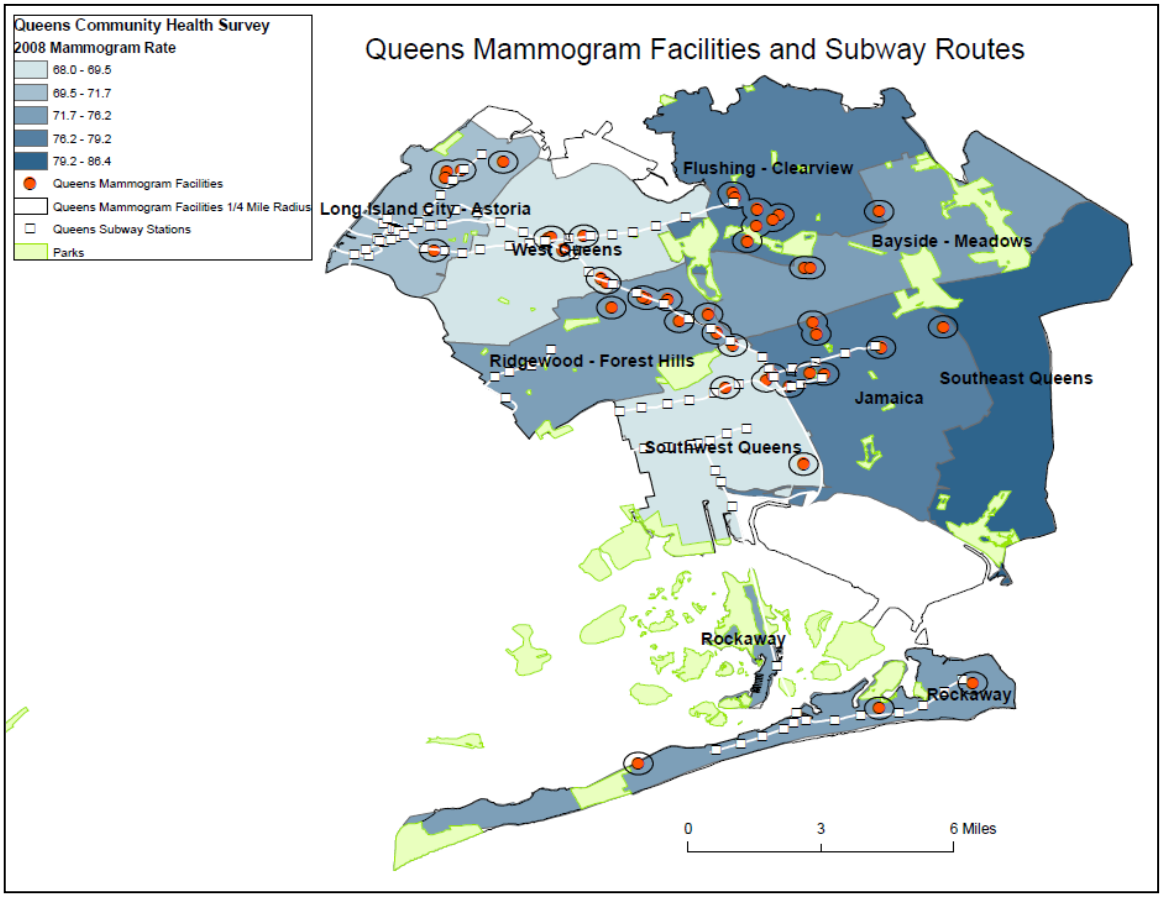
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene and FDA List of Certified Mammogram Facilities

Appendix I



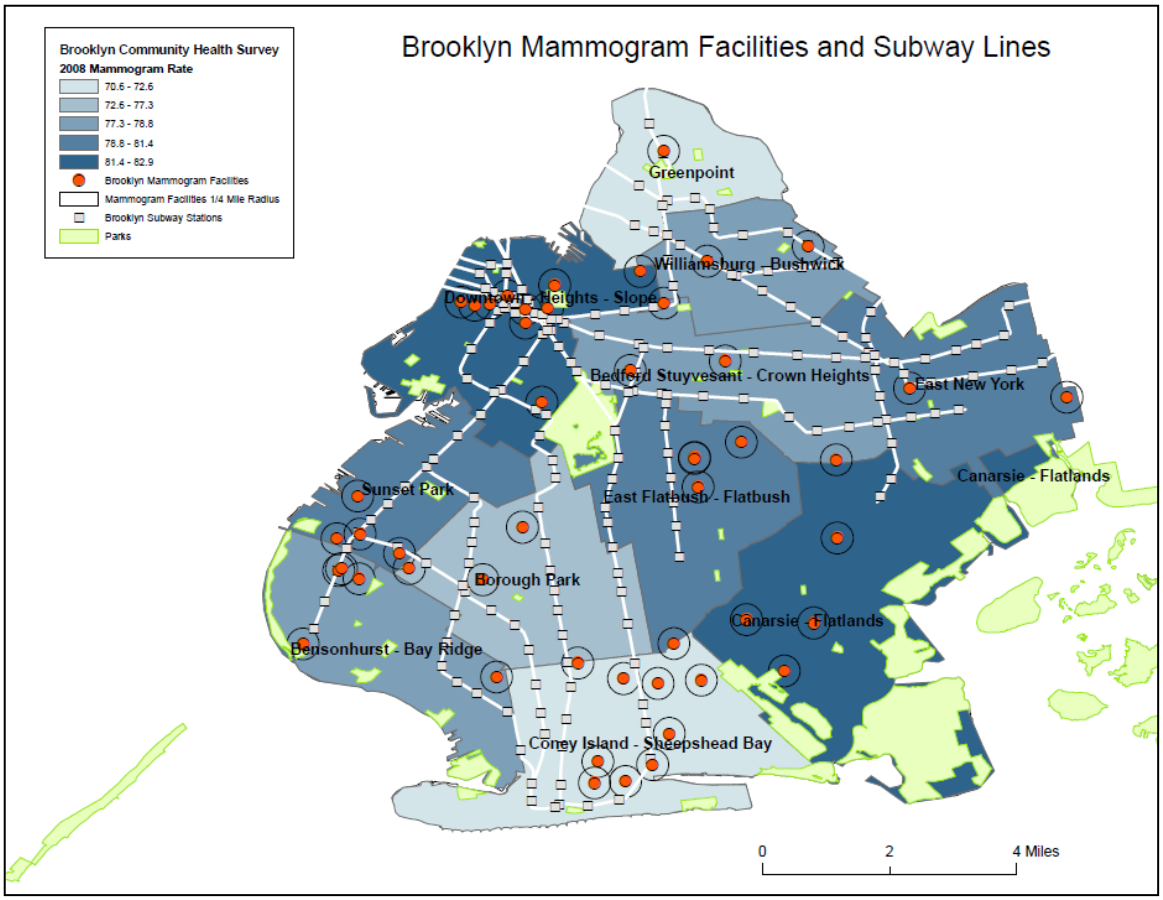
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix J



Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix K



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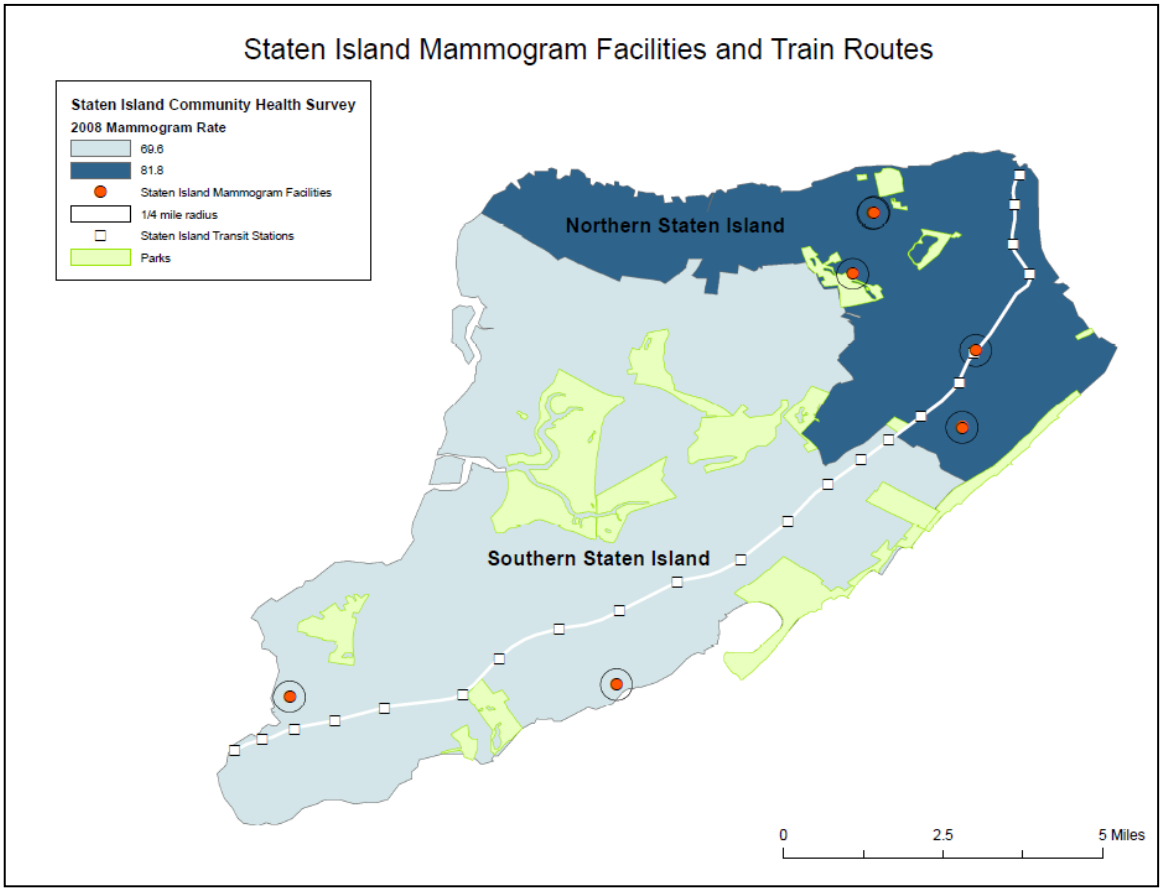
Appendix L



Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix M

Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

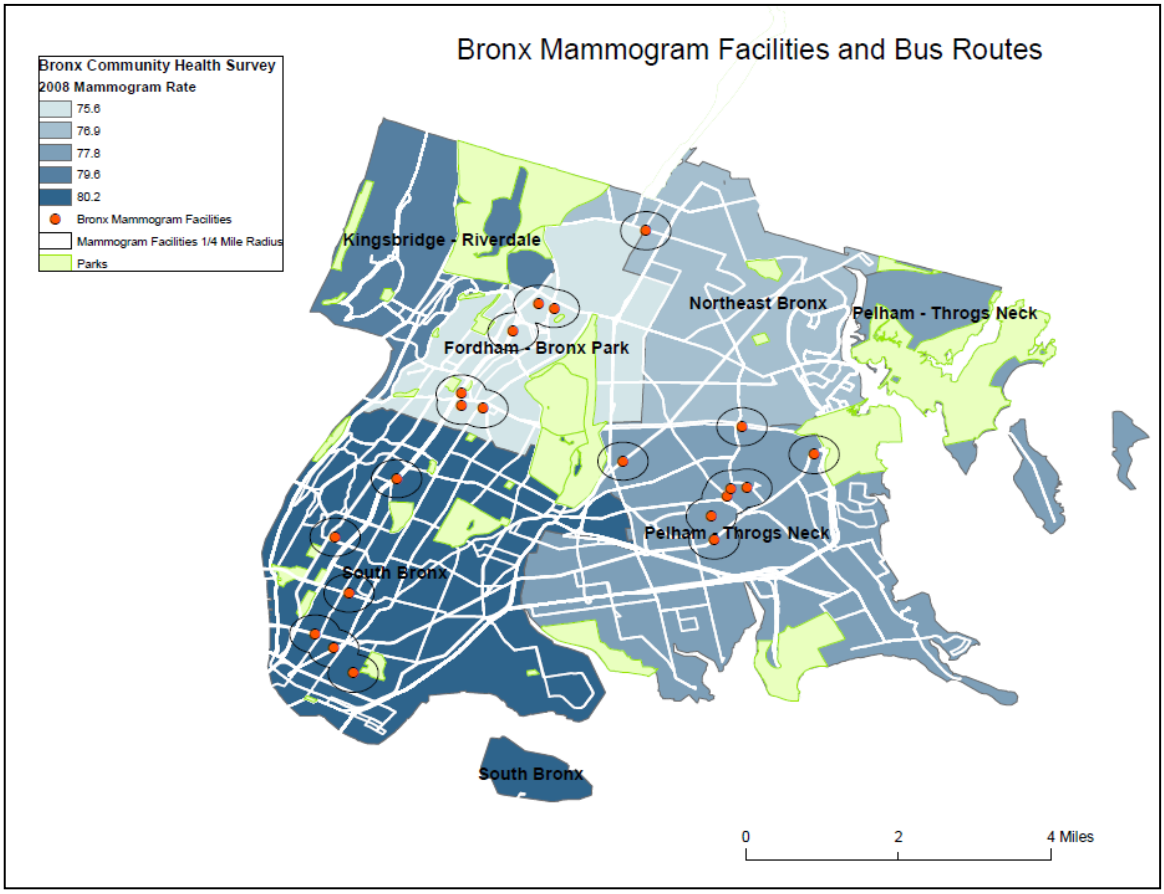
Appendix N

Neighborhood Mammogram Rates and Transportation Access

UHF Neighborhood	Mammogram Rate	Subway Lines	Subway Stations	Facilities within 1 mi.	Percent Uninsured
Washington Heights-Inwood	87.9	5	20	12.0	21.8
Southeast Queens	86.4	0	0	8.0	11.0
Chelsea-Clinton-Village	84.1	23	61	38.0	5.1
Upper East Side-Gramercy	83.4	12	19	38.0	9.2
Canarsie-Flatlands	82.9	1	2	11.0	16.7
Downtown-Heights-Park Slope	81.8	15	42	13.0	9.9
Northern Staten Island	81.8	1	7	4.0	11.5
East New York	81.4	6	26	4.0	25.9
Average	**83.7**	**7.9**	**24.6**	**16.0**	**13.9**
East Flatbush-Flatbush	80.9	6	17	17.0	19.4
Sunset Park	80.3	4	10	12.0	27.1
South Bronx	80.2	6	36	19.0	23.8
Kingsbridge-Riverdale	79.6	1	3	7.0	10.9
Flushing-Clearview	79.2	1	1	14.0	14.5
Bedford Stuyvesant-Crown Heights	78.8	10	30	19.0	19.7
Bensonhurst-Bay Ridge	78.6	3	11	12.0	13.1
Williamsburg-Bushwick	78.5	5	20	7.0	24.5
Jamaica	78.2	3	10	14.0	14.4
Average	**79.4**	**4.3**	**15.3**	**13.0**	**18.5**
Pelham-Throgs Neck	77.8	3	14	8.0	19.1
Union Square-Lower Manhattan	77.7	20	36	21.0	14.3
Borough Park	77.3	5	23	16.0	21.4
Northeast Bronx	76.9	2	8	11.0	18.4
Ridgewood-Forest Hills	76.2	6	10	15.0	20.0
Upper West Side	76.0	7	17	27.0	17.2
Fordham-Bronx Park	75.6	5	15	10.0	21.3
East Harlem	74.7	3	5	17.0	24.8
Rockaway	74.3	1	14	3.0	11.7
Average	**76.5**	**6.4**	**16.0**	**15.0**	**18.6**
Bayside-Little Neck-Meadows	74.0	0	0	19.0	15.3
Coney Island-Sheepshead Bay	72.6	4	19	13.0	13.6
Long Island City-Astoria	71.7	8	28	21.0	17.6
Greenpoint	70.6	5	10	8.0	13.3
Southern Staten Island	69.6	1	15	4.0	9.7
Southwest Queens	69.5	5	20	12.0	17.1
West Queens	68.0	6	16	20.0	30.7
Central Harlem-Morningside Heights	66.9	7	14	16.0	19.5
Average	**70.4**	**4.5**	**15.3**	**14.1**	**17.1**

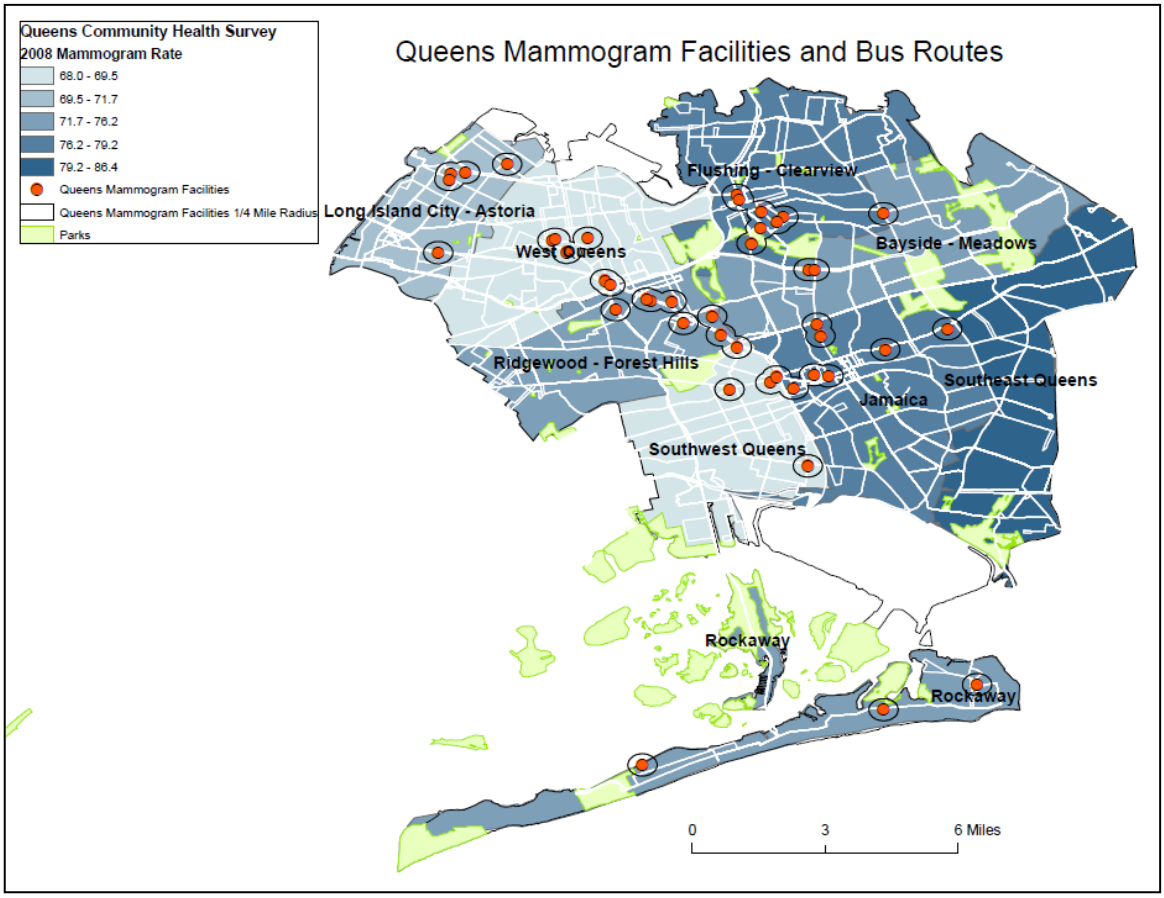
Source: 2009 City Council Survey of Mammogram Facilities and 2008 Community Health Survey, New York City Department of Health and Mental Hygiene

Appendix O



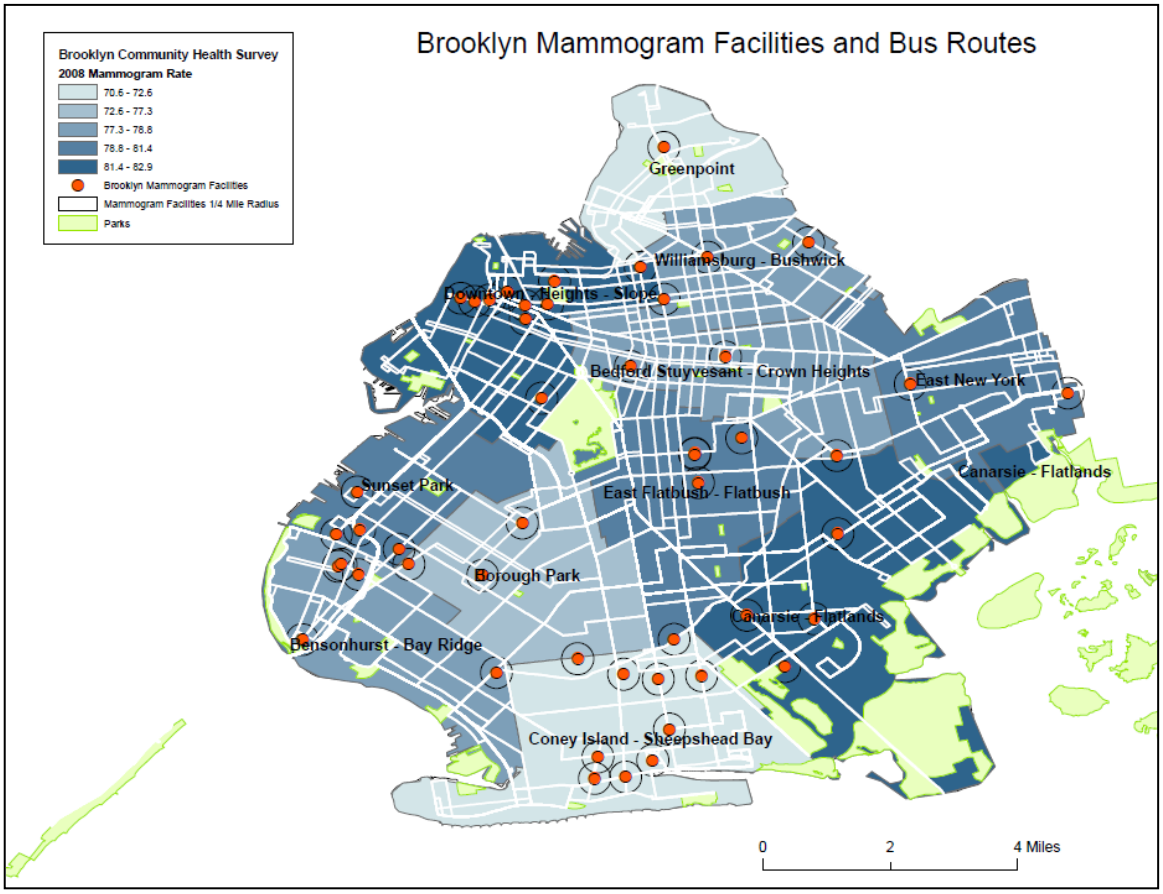
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix P



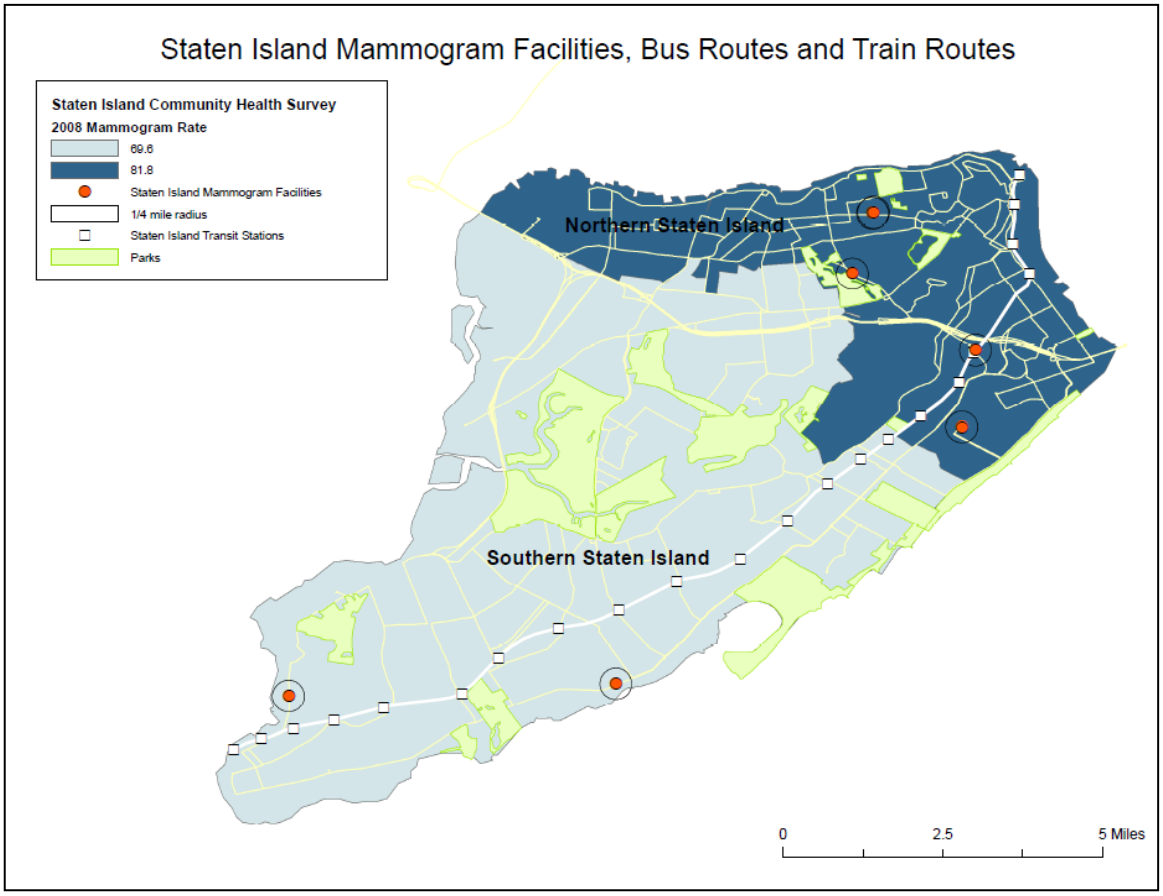
Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix Q



Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix R



Source: 2008 Community Health Survey, New York City Department of Health and Mental Hygiene, FDA List of Certified Mammogram Facilities and the OASIS mapping project, available at Oasisnyc.net

Appendix S

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