

LONG ISLANDERS' PERCEPTIONS OF
THE AVAILABILITY OF PHYSICIANS
AND
THE MOST IMPORTANT PUBLIC HEALTH CONCERN
IN THE COMMUNITY WHERE THEY LIVE



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Program in Public Health

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Research Questions

- Q1. Do residents of Long Island perceive a shortage of doctors (primary, specialty)?
- Q2. What do residents perceive as the most important health concern in their community?
 - Do these perceptions match reality?
- Q3. For the above, what demographic factors are associated with these perceptions?

Survey Methodology

- Stony Brook University Center for Survey Research conducted a telephone survey between September 18th and October 28th, 2012.
- Random-digit dialing (RDD) was used to obtain the phone numbers in the sample.
- Within selected households, individuals 18 years and over were selected at random to participate.

Survey Methodology

- Up to six attempts at various times of the day and week were made at each household number.
- 812 completed interviews.
 - ❖ 394 in Nassau County
 - ❖ 418 in Suffolk County
 - ❖ 629 Respondents answered for all the covariates

Statistical Analyses

- Analyses was conducted using STATA 12
- All statistical tests accounted for weights and missing data
- Statistical Tests Used: Chi Square & Logistic Regression
- 6 Covariates (all categorical, 0/1)
 - Gender
 - Age
 - Income
 - Race (Whites/Non Whites)
 - Education
 - Children under the age of 18 living in the household

Perceptions of Availability of PCPs and Specialists in Nassau and Suffolk County

- Do residents of Nassau and Suffolk Counties perceive there to be: “too many” ... “too few” ...or, “about the right number” of physicians (PCP; Specialists)?
 - “Do you think there are too many, too few, or about the right number of PRIMARY CARE doctors in (Nassau/Suffolk) county?”
 - “Do you think there are too many, too few, or about the right number of SPECIALIST doctors in (Nassau/Suffolk) county?”
- What sociodemographic factors were significantly associated with each of these perceptions...?

Results

The survey sample was representative of County population data

Demographics	Combined, N=629	Nassau N=300	Suffolk N=329	<i>p value</i>				
Gender						People Quick Facts	Suffolk County	Nassau County
Male	51%	52%	50%	.6141				
Female	49%	48%	50%	.6141		Over age 65, 2011	13.9%	15.4%
Race								
White	73%	68%	77%	.0906		Female, 2011	50.8%	51.6%
Non White	27%	32%	23%	.0906				
Income						White, 2011	85.9%	77.7%
<60K	32%	34%	30%	.5158				
≥60K	68%	66%	70%	.5158		HS or higher age 25+, 2007-2011	89.5%	89.9%
Age								
<65	83%	82%	84%	.4151				
≥65	17%	18%	16%	.4151				
Children under the age of 18 living in the household								
None	58%	56%	40%	.4940				
More than 1	42%	44%	60%	.4940				
Education								
<HS Diploma	34%	33%	36%	.5639				
≥HS Diploma	66%	67%	64%	.5639				

p value <.05; p value <.01**; p value <.001****

Bivariate Analyses (Nassau V. Suffolk)

<u>Outcomes</u>	<u>Combined</u> N=574	<u>Nassau (%)</u> N=273	<u>Suffolk (%)</u> N=301	<u>p value</u>
Primary Care Physicians				
Too Few	25.5	20.7	30.2	.0249*
Just the Right Number	64.8	67.2	62.6	.3608
Too Many	9.6	12.2	7.2	.1277
Specialists	N=577	N=279	N=298	
Too Few	24.3	16.5	31.7	.0011**
Just the Right Number	65.4	72.8	58.3	.0038**
Too Many	10.3	10.7	9.9	.7861

p value <.05; p value <.01**; p value <.001****

- **Finding:** There are significant County differences in perceptions of there being “too few PCPs,” “too few specialists,” and the “right number of specialists” between Nassau and Suffolk.

Logistic Regression Models

Between Counties

	<u>Too Few PCPs</u> N=574	<u>Right Number of Specialists</u> N=577	<u>Too Few Specialists</u> N=577
Male	0.62* (.40,0.96)	1.83* (1.15,2.91)	0.63 (0.37, 1.08)
Non White	1.01 (.57,1.77)	0.76 (0.43,1.32)	1.32 (0.71,2.45)
Income <60K	1.10 (.64,1.88)	0.75 (0.43,1.29)	1.56 (0.84,2.89)
Age <65	0.98 (.56,1.71)	0.88 (.51,1.54)	1.63 (0.86,3.09)
1 or more children	0.53* (.31,.89)	1.26 (0.75,2.09)	0.91 (0.52,1.61)
≥HS Diploma	0.61 (.35,1.05)	0.98 (.54,1.76)	1.07 (0.54,2.09)
Nassau	0.58* (0.38, 0.91)	1.93** (1.23,3.06)	0.41** (0.24,0.71)

- **Findings:** Respondents residing in Nassau County are less likely to think that there are too few PCPs and specialists, and more likely to think that there are just the right number of specialists than Suffolk County.

Q1. Do residents of Long Island perceive a shortage of PCPs?

Nassau & Suffolk Counties

<u>Combined</u> N=574	<u>Too Few PCPs</u>	<u>Right Number of PCPs</u>	<u>Too Many PCPs</u>
Male	.63* (.41, .95)	1.48 (.96, 2.27)	.95 (.45, 1.98)
Non White	.96 (.56, 1.67)	.73 (.43, 1.26)	2.09 (.94, 4.60)
Income <60K	1.06 (.63, 1.79)	.67 (.41, 1.10)	2.32* (1.11, 4.88)
Age <65	.99 (.56, 1.67)	.85 (.49, 1.45)	1.52 (.56, 4.07)
1 or more children	.53* (.32, .89)	1.48 (.92, 2.39)	1.31 (.61, 2.82)
≥HS Diploma	.65 (.38, 1.11)	1.17 (.71, 1.95)	1.55 (.73, 3.31)

p value <.05; p value <.01**; p value <.001****

- **Findings:** Males are less likely to perceive that there are too few PCPs than females.
- Individuals earning less than 60K are more likely to perceive there to be too many PCPs, than those earning more than 60K.
- Respondents with children under the age of 18 living in the H.H are less likely to perceive there to be too few PCPs than those without children.

Nassau & Suffolk Counties

<u>Combined N=577</u>	<u>Too Few Specialists</u>	<u>Right Number of Specialists</u>	<u>Too Many Specialists</u>
Male	.61 (.36, 1.03)	1.86** (1.18, 2.93)	.56 (.31,1.03)
Non White	1.23 (.68, 2.22)	.79 (.46, 1.37)	1.12 (.51, 2.42)
Income <60K	1.41 (.78, 2.53)	.79 (.46, 1.35)	.87 (.37, 2.00)
Age <65	1.70 (.91, 3.19)	.84 (.48, 1.46)	.61 (.29,1.26)
1 or more children	.87 (.50, 1.52)	1.28 (.78, 2.12)	.68 (.33, 1.39)
≥HS Diploma	1.16 (.61,2.20)	.91 (.52, 1.61)	.91 (.42, 1.92)

*p value <.05**; *p value <.01***; *p value <.001****

- **Finding:** Males are more likely to perceive there to be about the right number of specialists than females.

Q1. Do residents of Long Island perceive a shortage of doctors?

Nassau County

	<u>Too Few</u> <u>PCPs</u> N=273	<u>Right</u> <u>Number of</u> <u>PCPs</u> N=273	<u>Too Many</u> <u>PCPs</u> N=273	<u>Too Few</u> <u>Specialists</u> N=279	<u>Right</u> <u>Number of</u> <u>Specialists</u> N=279	<u>Too Many</u> <u>Specialists</u> N=279
Male	1.04 (.53, 2.05)	.78 (.42, 1.45)	1.5 (.56, 3.9)	.64 (.29, 1.45)	1.39 (.74, 2.6)	.88 (.39, 1.99)
Non White	1.29 (.61, 2.76)	.55 (.27, 1.14)	2.13 (.77, 5.84)	1.6 (.66,3.8)	.84 (.40,1.76)	.63 (2.1,1.8)
Income <60K	.95 (.44, 2.01)	.74 (.38, 1.46)	1.86 (.77, 4.48)	.83 (.30,2.3)	1.37 (.61,3.1)	.61 (.18,, 1.99)
Age <65	.97 (.41, 2.32)	.81 (.35, 1.84)	1.59 (.43, 5.95)	1.11 (.38, 3.1)	1.02 (.47,2.2)	.84 (.32,2.19)
1 or more children	.69 (.32, 1.48)	1.21 (.62, 2.37)	1.13 (.43,2.95)	1.73 (.76,3.9)	.97 (.48, 1.95)	.42 (.16,1.13)
≥HS Diploma	.55 (.22, 1.33)	1.28 (.59, 2.74)	1.34 (.48, 3.74)	1.3 (.45,4.1)	.99 (.41,2.38)	.61 (.18,1.96)

p value <.05; p value <.01**; p value <.001****

- **Finding:** None of the outcomes, pertaining to the perception of number of physicians were significant in Nassau County.

Q1. Do residents of Long Island perceive a shortage of PCPs?

Suffolk County

N=301	<u>Too Few PCPs</u>	<u>Right Number of PCPs</u>	<u>Too Many PCPs</u>
Male	.41** (.22,.73)	2.75 (1.5, 4.9)**	.46 (.15, 1.36)
Non White	.81 (.36,1.8)	1.96 (.50,7.6)	.93 (.42, 2.05)
Income <60K	1.25 (.59,2.66)	3.1 (.76, 12.7)	.56 (.26, 1.17)
Age <65	.99 (.46, 2.12)	1.62 (.34, 7.5)	.87 (.42, 1.8)
1 or more children	.41* (.20,.83)	1.5 (.45, 5.2)	1.93 (.99, 3.7)
≥HS Diploma	.53 (.26,1.09)	1.72 (.61, 4.7)	1.5 (.75, 2.9)

p value <.05; p value <.01**; p value <.001****

- **Findings:** Males and people with children under the age of 18 living in the H.H are less likely to perceive that there are too few PCPs than females and those without children, in Suffolk.
- Males are more likely to perceive that there are just the right number of PCPs than females.

Q1. Do residents of Long Island perceive a shortage of specialists?

Suffolk County

N=298	<u>Too Few Specialists</u>	<u>Right Number of Specialists</u>	<u>Too Many Specialists</u>
Male	.56 (.27,1.17)	2.3* (1.16, 4.6)	.38 (.14, 1.02)
Non White	1.06 (.45,2.5)	.74 (.31,1.75)	1.83 (.56, 5.9)
Income <60K	2.3* (1.08,5.2)	.41* (.18,.91)	1.12 (.30, 4.2)
Age <65	2.2 (.99,4.8)	.70 (.32,1.53)	.43 (.14, 1.29)
1 or more children	.59 (.29,1.2)	1.49 (.74, 2.97)	1.17 (.40, 3.3)
≥HS Diploma	.81 (.35,1.9)	1.08 (.74, 2.97)	1.26 (.46, 3.4)

*p value <.05**; *p value <.01***; *p value <.001****

- **Findings:** Males are more likely to perceive that there are just the right number of specialists in Suffolk County than females.
- Respondents earning less than 60K are more likely to perceive that there are too few specialists in Suffolk County and they are less likely to perceive that there are just the right number of specialists.

Does the perception of the
availability of Physicians match
reality?

Ratio of Population to PCPs

Measure 2013	Nassau	Suffolk
PCPs	675:1	1359:1

Measure 2005	Nassau	Suffolk
Specialists per 100,000 population	821.670	775.290

The County data shows that there are fewer PCPs in Suffolk County than Nassau County.

- Perceptions of Important Public Health Concerns in the Community

Most Important Public Health Concerns in the Community

- Currently, what do you think is the most important public health issue facing the community where you live?
 - Open Ended Question (no prompts)

Coding for the Open Ended Question

- 812 Respondents

- 2nd Step: All the answers were categorized under 7 broad public health categories (created by the team).
- The 7 categories are as follows:

Cancer

Healthcare accessibility

Behavioral factors

Obesity

Heart Disease

Environmental Concerns

Other

Q2. Does the perception of Long Islanders public health concerns match reality?

- Each category is treated as an outcome for each model:

Healthcare Accessibility N=182	Cancer N=151	Environmental N=95	Other N=77	Behavioral N=52	Obesity N=39	Heart Disease N=5
Health insurance, Affordability, Health Care/ Insurance coverage	Any type of cancer, breast cancer	Water quality, water pollution (air noise, general) Food/food safety, food availability, environment, crime, safety, garbage/town dumps, overpopulation, homelessness, transportation issues	West Nile/ mosquito s/Lyme ticks/bug problem, Aging issues, Mental Health, Disease (general, Cold/flu, Allergy/ Asthma, Vaccinations, Abortion, other	Drug and alcohol problems, smoking, healthy lifestyle/ exercise issues	Overweight/obesity	Heart attack, heart disease, high blood pressure

Bivariate Analyses

<u>Outcomes</u>	<u>Combined N=498</u>	<u>Nassau N=238</u>	<u>Suffolk N=260</u>	<i>p value</i>
Health Care Accessibility	28.1%	28%	28.3%	.9457
Any type of Cancer	20.2%	19.3%	20.9%	.6933
Environmental Factors	15.9%	16.0%	15.7%	.9399
Other	11.5%	12.3%	10.8%	.6636
Behavioral Factors	9.2%	8.2%	10.1%	.5865
Obesity	8.8%	6.7%	10.9%	.2617
Heart Disease	1.2%	2.1%	0.3%	.0893

*p value <.05**; *p value <.01***; *p value <.001****

- **Finding:** None of the public health concerns in the community different between the two counties at a significant level.

Q2. Does the perception of Long Islanders public health concerns match reality?

Logistic Models

Nassau & Suffolk Counties

N=498	Other	Healthcare	Environment	Behavioral	Any Cancer	Obesity
Male	.91 (.43, 2.45)	.93 (.57, 1.53)	1.23 (.66, 2.31)	2.01 (.91, 4.39)	.48** (.29, .80)	1.75 (.69, 4.43)
Non White	1.02 (.43, 2.45)	.96 (.49, 1.84)	1.73 (.81, 3.70)	.47 (.14, 1.56)	.62 (.29, 1.34)	.97 (.28, 3.31)
Income <60K	1.51 (.74, 3.01)	.81 (.43, 1.49)	1.86 (.94, 3.69)	.84 (.34, 2.07)	.35** (.16, .74)	1.89 (.69, 5.19)
Age <65	.68 (.29, 1.56)	.89 (.50, 1.59)	.99 (.46, 2.12)	1.29 (.52, 3.19)	.69 (.35, 1.37)	4.19 (.97, 17.9)
1 or more children	1.27 (.63, 2.57)	.77 (.44, 1.32)	1.13 (.54, 2.33)	.77 (.29, 2.03)	.94 (.54, 1.63)	1.55 (.56, 4.32)
≥HS Diploma	.74 (.36, 1.52)	1.11 (.56, 2.19)	.56 (.27, 1.16)	1.43 (.50, 4.04)	.93 (.47, 1.85)	1.48 (.52, 4.18)

p value <.05; p value <.01**; p value <.001****

- **Finding:** Individuals earning less than 60K and males are less likely to perceive that any type of cancer is a public health concern in the community.

Q2. Does the perception of Long Islanders public health concerns match reality?

Nassau County

N=238	Other	Healthcare	Environment	Behavioral	Any Cancer	Obesity
Male	.71 (.27, 1.85)	1.17 (.59, 2.32)	.94 (.37, 2.38)	1.34 (.37,4.7)	.69 (.33, 1.4)	3.2 (.93, 11.0)
Non White	1.14 (.37, 3.4)	.89 (.36, 2.19)	1.19 (.42, 3.37)	1.07 (.26, 4.2)	.35 (.10, 1.2)	1.49 (.29, 7.5)
Income <60K	.67 (.24, 1.85)	1.30 (.58, 2.88)	1.83 (.69, 4.8)	1.05 (.31, 3.5)	.15** (.05, .49)	1.18 (.17, 7.8)
Age <65	.31* (.10, .92)	1.00 (.46, 2.17)	.89 (.30, 2.6)	4.7 (.86, 25.7)	1.14 (.40, 3.2)	1.89 (.20, 17.3)
1 or more children	1.58 (.58, 4.2)	.58 (.27, 1.26)	1.58 (.62, 4.04)	.48 (.10, 2.19)	.76 (.34, 1.67)	2.7 (.79, 9.5)
≥HS Diploma	.74 (.25, 2.14)	.82 (.33, 2.04)	.81 (.31, 2.11)	1.33 (.33, 5.3)	1.31 (.50, 3.4)	1.87 (0.31, 11.4)

p value <.05; p value <.01**; p value <.001****

- **Findings:** Individuals aged less than age 65 in Nassau County are less likely to perceive “Other” factors to be a public health concern than those over the age of 65.
- Individuals earning less than 60K are less likely to perceive any type of cancer to be of a public health concern in Nassau County than those earning more than 60K.

Q2. Does the perception of Long Islanders public health concerns match reality?

Suffolk County

N=260	Other	Healthcare	Environment	Behavioral	Any Cancer	Obesity
Male	1.25 (.44, 3.5)	.76 (.37, 1.58)	1.29 (.62, 2.6)	3.63* (1.16, 11.3)	.33** (.15, .68)	1.29 (.34, 4.8)
Non White	.73 (.16, 3.2)	1.09 (.42, 2.7)	2.77 (.95, 8.1)	.05** (.009,.34)	1.16 (.40, 3.3)	.74 (.14, 3.9)
Income <60K	4.1** (1.4, 11.4)	.46 (.17, 1.25)	1.73 (.7, 4.2)	.76 (.27, 2.14)	.55 (.18, 1.6)	2.75 (.88, 8.5)
Age <65	2.45 (.65, 9.2)	.76 (.33, 1.74)	.95 (.32, 2.85)	.57 (.18, 1.82)	.46 (.19, 1.10)	6.2* (1.2, 31.4)
1 or more children	1.4 (.49, 11.4)	.93 (.43, 1.99)	.74 (.28, 1.9)	1.19 (.28, 5.1)	1.02 (.46, 2.2)	1.44 (.47, 4.3)
≥HS Diploma	.75 (.26, 2.2)	1.52 (.55, 4.1)	.32* (.11, .90)	2.08 (.40, 10.7)	.64 (.24, 1.7)	1.17 (.36, 3.76)

*p value <.05**; *p value <.01***; *p value <.001****

Findings

- Non White respondents living in Suffolk County are less likely to perceive behavioral factors to be a public health concern than Whites.
- Males are more likely to perceive behavioral factors to be a public health concern in the community than females in Suffolk. Also, males are less likely to perceive that any type of cancer is a public health concern in the community than females.
- Individuals age less than 65 are more likely to perceive obesity to be a public health concern in Suffolk County than those age 65 and older.
- Individuals earning less than 60K are more likely to perceive other factors to be a public health concern than those earning more than 60K.
- Individuals with a HS diploma or more are less likely to perceive that environmental factors are a public health concern than those with less than a HS diploma.

Are Perceptions Consistent With Reality?

Cancer Mortality, 2005-2009

SUFFOLK COUNTY		Males		Females	
Site of Cancer	Average Annual Deaths	Rate per 100,000 Males	Average Annual Deaths	Rate per 100,000 Females	
All Invasive Malignant Tumors	1376	205.1	1427.6	155.4	
NASSAU COUNTY					
	1243.4	176.4	1313.0	137.2	

- While males are less likely to perceive Cancer to be their most important public health concern in their community, in BOTH counties, males have a higher mortality Rate per 100,000, due to cancer.

Behavioral

Tobacco Use

	Nassau	Suffolk
% cigarette smoking adults	10.1% (2009)	17.7% (2009)
COPD Hospitalizations among adults 18+ (per 10,000)	36.5% (2008-2010)	40.6 (2008-2010)

Lung Cancer Incidence (per 100,000), (2008-2010)

Male	63.7	79.9
Female	56.3	69.3

Drug Related Hospitalizations (per 10,000), 2009

	19.6	25.2
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Healthcare Accessibility

Measure 2013	Nassau	Suffolk
Uninsured	12%	12%
Access to Quality Health Care, 2009		
% of adults with healthcare coverage	90.6%	92.5 %
% of adults with regular health care providers	86.9%	87.1%

Leading Causes of Death by County, New York State, 2010

County and # of Deaths	#1 Cause of Death and # of Deaths Age-adjusted Death Rate	#2 Cause of Death and # of Deaths Age-adjusted Death Rate	#3 Cause of Death and # of Deaths Age-adjusted Death Rate	#4 Cause of Death and # of Deaths Age-adjusted Death Rate	#5 Cause of Death and # of Deaths Age-adjusted Death Rate
Nassau Total: 10,591	Heart Disease 4,131 219 per 100,000	Cancer 2,539 147 per 100,000	Chronic Lower Respiratory Diseases (CLRD) 417 23 per 100,000	Stroke 398 22 per 100,000	Unintentional Injury 349 23 per 100,000
Suffolk Total: 11,129	Heart Disease 3,273 194 per 100,000	Cancer 2,771 166 per 100,000	Unintentional Injury 525 34 per 100,000	Chronic Lower Respiratory Diseases (CLRD) 519 32 per 100,000	Stroke 446 27 per 100,000

Source: Vital Statistics Data as of September, 2012

New York State Department of Health - Bureau of Biometrics and Health Statistics

CONCLUSIONS

Physician Availability

- There are within and between County differences for the perception of physician availability.
- The differences in perception of physician availability is consistent with the differences in number of physicians according to the actual County data.

Important Public Health Concerns

- There is a disconnect between reality and perception for public health issues.

Discussion

- Other analyses?
- Dissemination ideas?

References

- http://www.health.ny.gov/statistics/leadingcauses/leadingcauses_death/deaths_by_county.htm
- <http://www.health.ny.gov/statistics/cancer/registry/vol1/v1cnassau.htm>
- <http://www.health.ny.gov/statistics/cancer/registry/>
- <http://quickfacts.census.gov/qfd/states/36/36103.html>
- http://www.city-data.com/county/Nassau_County-NY.html
- http://www.city-data.com/county/Suffolk_County-NY.html
- http://www.health.ny.gov/prevention/prevention_agenda/indicators/county/suffolk.htm