

'Micro-targeting' NYC neighborhoods with low colonoscopy screening rates:

The use of a population-based survey for planning interventions

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Overview

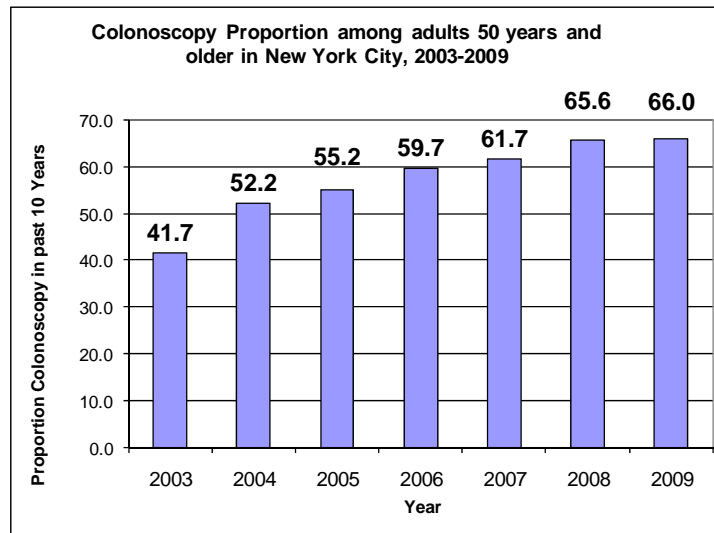
- Background
- Identification of NYC neighborhoods with lowest colonoscopy prevalences
- Analysis of actionable, neighborhood-level variables associated with low colonoscopy prevalence
- Interventions
- Strengths and limitations of using a population-based survey for community-level interventions



Background



NYC Trend



NYC DOHMH Community Health Survey, 2003-2009



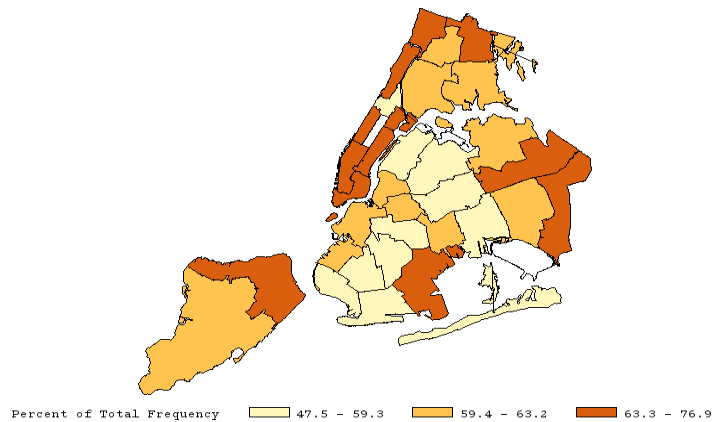
Neighborhood Disparities

2007 NYC DOHMH Community Health Survey	%	New York City	61.7
Coney Island	47.5	Greenpoint	62.1
The Rockaways	48.9	Southern Staten Island	62.2
Long Island City/Astoria	49.6	East New York	62.3
Borough Park	53.5	Downtown Brooklyn/Slope	62.5
West Queens	54.3	Sunset Park	63.2
Central Harlem	55.8	Northern Staten Island	63.3
Flatbush	56.0	Washington Heights	66.2
Ridgewood/Forest Hills	56.6	East Harlem	68.0
Bay Ridge/Bensonhurst	57.6	Southeast Queens	68.0
Bedford-Stuyvesant/Crown Heights	59.0	Chelsea/Greenwich Village	68.1
Southwest Queens	59.3	Kingsbridge/Riverdale	70.2
Williamsburg/Bushwick	59.4	Union Square/Lower Manhattan	70.4
Pelham/Throgs Neck	59.4	Northeast Bronx	70.6
Jamaica	59.5	Canarsie	71.3
The South Bronx	59.8	Bayside/Little Neck	74.7
Flushing	60.7	Upper East Side	75.6
Fordham/Bronx Park	61.6	Upper West Side	76.9



Neighborhood Disparities

NYC Community Health Survey 2007
 Percentage reporting colonoscopy in past 10 years by neighborhood



Bureau of Epidemiology Services, NYC DOHMH

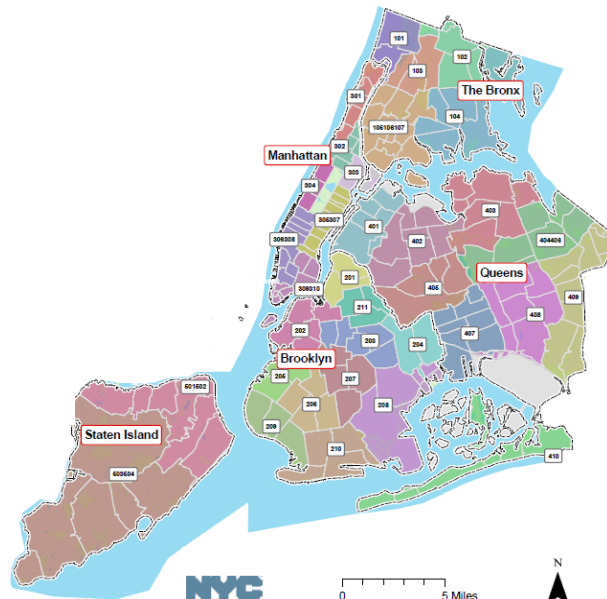


Community Health Survey

- Annual, cross-sectional, random-digit dialed telephone survey of 10,000 non-institutionalized adults
- Representative sample from all 34 United Hospital Fund NYC neighborhoods
- Topic areas include health behaviors, health care access and preventive health care practices, including cancer screening
- Translated survey and live translation available



United Hospital Fund (UHF 34) Neighborhood Index



Objective

- To use NYC DOHMH Community Health Survey data to help direct community-level interventions that will increase colonoscopy screening in NYC neighborhoods with the lowest colonoscopy screening prevalences



Methods



Methods

- Descriptive statistics using data from 2006-2008 Community Health Survey (CHS) and SAS/SUDAAN statistical software
- Use of geographical software to map screening proportions
- Outcome: Proportion of people 50 years and older who have or have not had a colonoscopy in the past 10 years



Identifying Neighborhoods

Four measures using 2006-2008 data:

- Average screening prevalence
- Average rank of screening prevalence
- Screening prevalence using merged data
- Statistical comparison of 3 neighborhood categories: lowest, middle, highest screening prevalences



Predictor Variables

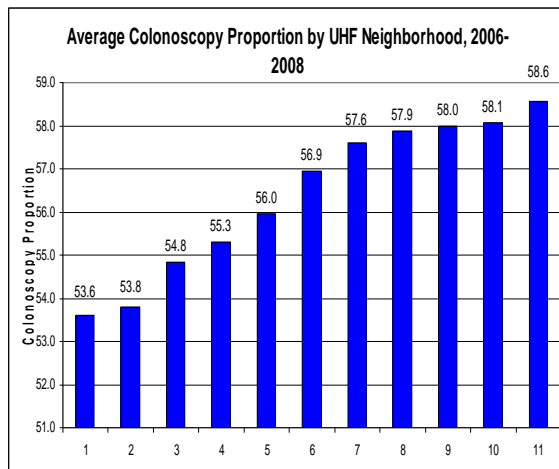
- U.S. born and Foreign born
 - Country of Birth
 - NYC DOHMH associations with providers and community-based organizations
- Primary Care Provider
- Insurance Status
- Household Income
- Race/Ethnicity



Results



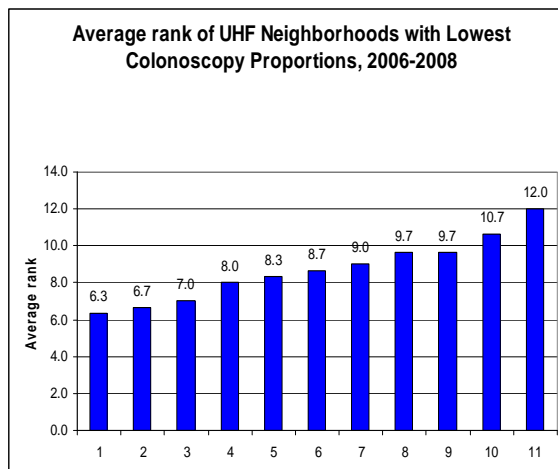
Identifying Neighborhoods



Rank	UHF Neighborhood
1	Fordham/Bronx Park
2	Coney Island
3	Long Island City/Astoria
4	West Queens
5	The Rockaways
6	East New York/New Lots
7	Bedford-Stuyvesant/Crown Heights
8	Williamsburg/Bushwick
9	Bay Ridge/Bensonhurst
10	Southwest Queens
11	Borough Park



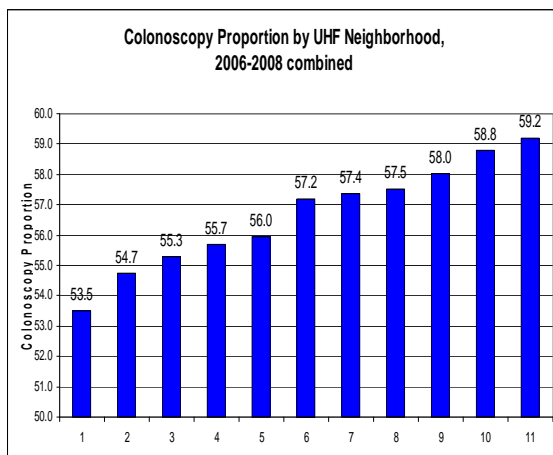
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Rank	UHF Neighborhood
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Identifying Neighborhoods



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11	Bay Ridge/Bensonhurst



Differences among Neighborhood Groups

Coney Island	Lowest
Fordham-Bronx Park	Lowest
West Queens	Lowest
Rockaway	Lowest
Long Island City-Astoria	Lowest
Williamsburg-Bushwick	Lowest
East New York	Lowest
Borough Park	Lowest
Bed Stuy-Crown Heights	Lowest
South West Queens	Lowest
Bensonhurst	Lowest
Flushing	Middle
Greenpoint	Middle
Pelham-Throgs Neck	Middle
Jamaica	Middle
Northern Staten Island	Middle
Flatbush	Middle
South Bronx	Middle
Ridgewood	Middle
Central Harlem	Middle
Southern Staten Island	Middle
Washington Heights	Middle
Sunset Park	Highest
East Harlem	Highest
Downtown-Heights-Slope	Highest
Canarsie	Highest
Kingsbridge	Highest
South East Queens	Highest
NE Bronx	Highest
Union Square-Lower Manhattan	Highest
Chelsea-Village	Highest
Bayside Little Neck-Fresh Meadows	Highest
Upper West Side	Highest
Upper East Side-Gramercy	Highest

Statistical comparison of mean prevalences:

Lowest: 57.1 (55.4, 58.7), reference

Middle: 62.2 (60.7, 63.7), p=0.002

Highest: 71.1 (69.7, 72.5), p<0.001

NYC DOHMH Community Health Survey, 2006-2008 combined



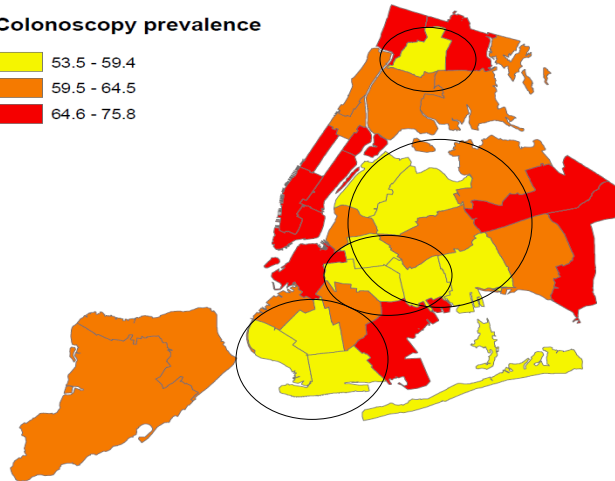
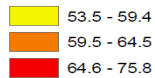
Neighborhoods by Borough

West Queens Long Island City/Astoria Southwest Queens The Rockaways	→	Queens
Williamsburg/Bushwick Bedford-Stuyvesant East New York/New Lots	→	Central Brooklyn
Borough Park Coney Island Bay Ridge/Bensonhurst	→	Southwest Brooklyn
Fordham/Bronx Park	→	Bronx



Colonoscopy Screening by UHF Neighborhood, 2006-2008 combined

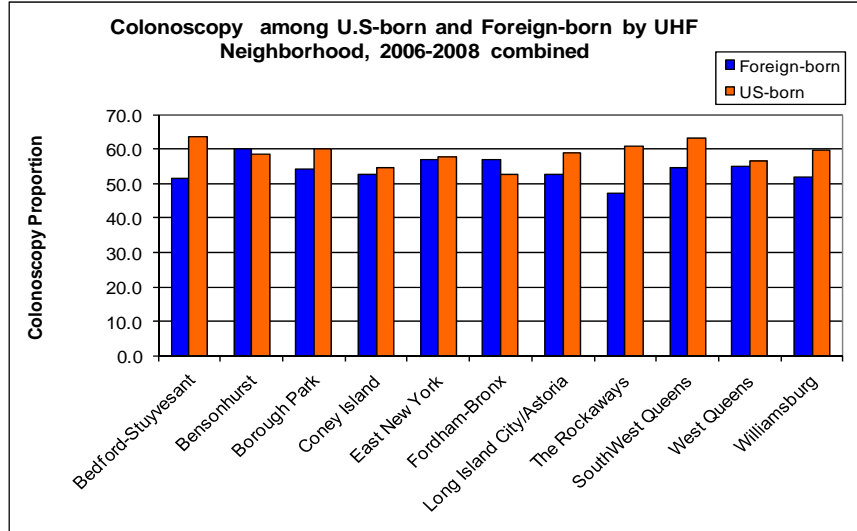
Colonoscopy prevalence



NYC DOHMH Community Health Survey, 2006-2008 combined



U.S.-born and Foreign-born



Unscreened Immigrants

Country or area of Birth*	Estimated Population Unscreened	Proportion of 50+ year-olds unscreened
Puerto Rico	39,000	36.9
Dominican Republic	37,000	36.5
China	32,000	38.9
Jamaica	21,000	39.8
Ukraine	20,000	43.1
Russia	19,000	45.8
Guyana	17,000	48.0
Ecuador	12,000	40.0
Trinidad and Tobago	11,000	38.4

* Countries or areas of birth sample size > 150. 2006-2008 NYC DOHMH CHS



Country of Birth by Linguistic Groups

China	→	Chinese
Russia Ukraine	→	Russian-speaking
Jamaica Guyana Trinidad/Tobago	→	English-speaking West Indies/Caribbean
Dominican Republic Puerto Rico Ecuador	→	Spanish-speaking



Unscreened Spanish-speaking

	sample n	population	percent unscreened
NYC overall	1548	81,000	37.2
Washington Heights	185	14,000	38.1
High Bridge	115	4,000	30.1
Hunts Point	113	4,000	34.1
Crotona-Tremont	102	6,000	41.0
Williamsburg	100	5,000	38.5
Fordham-Bronx Park	79	7,000	44.4
East Harlem	69	2,000	34.9
West Queens	63	8,000	45.6
Pelham	60	4,000	31.2
Union Square	55	2,000	28.6
Sunset Park	48	2,000	22.9*
Greenpoint	45	2,000	30.5*
SouthWest Queens	42	4,000	47.2*
Central Harlem	40	2,000	37.6*
Downtown-Heights	34	2,000	40.0*
Long Island City-Astoria	33	2,000	31.0*
East New York	32	3,000	47.0*
Northeast Bronx	31	1,000	29.0*
Bed-Stuy	31	1,000	47.9*
Kingsbridge	30	1,000	46.7*
Upper West Side	23	1,000	30.0*
Ridgewood	20	1,000	40.5*
Coney Island	18	1,000	38.1*
Chelsea-Clinton	17	2,000	52.2*
Jamaica	17	1,000	58.8*
Stapleton	16	<500	33.6*
Borough Park	14	2,000	50.6*
Flatbush	14	<500	34.2*
Canarsie	7	<500	30.0*
Bensonhurst	7	<500	44.1*
Rockaway	7	<500	56.7*

* Estimate should be interpreted with caution. Relative Standard Error is greater than 30% or the sample size is too small, making the estimate potentially unreliable.



Unscreened West Indies

	sample n	population	percent unscreened
NYC overall	712	49,000	41.5
Flatbush	140	9,000	37.6
Bed-Stuy	81	5,000	44.9
Jamaica	71	5,000	45.0
Northeast Bronx	61	3,000	26.7
SouthEast Queens	58	4,000	41.6
Canarsie	50	2,000	30.3
SouthWest Queens	42	6,000	51.6*
East New York	35	2,000	49.0*
Fordham-Bronx Park	20	1,000	38.1*
Pelham	17	1,000	35.8*
Crotona-Tremont	16	1,000	38.5*
Borough Park	14	1,000	35.2*
Rockaway	14	1,000	48.7*
Williamsburg	13	1,000	43.7*
Central Harlem	10	<500	47.2*
West Queens	10	2,000	48.7*
Downtown-Heights	5	<500	55.5*
Kingsbridge	4	<500	39.2*
Hunts Point	4	<500	66.9*
Long Island City-Astori	3	1,000	45.7*
Port Richmond	3	<500	45.7*
Fresh Meadows	2	<500	45.7*

* Estimate should be interpreted with caution. Relative Standard Error is greater than 30% or the sample size is too small, making the estimate potentially unreliable.



Unscreened Chinese

	sample n	population	percent unscreened
NYC overall	340	32,000	38.9
Flushing	50	4,000	29.0
Union Square	37	4,000	32.5*
Coney Island	23	3,000	53.5*
West Queens	23	3,000	42.9*
Borough Park	21	3,000	45.0*
Bensonhurst	21	1,000	31.1*
Fresh Meadows	20	1,000	20.4*
Ridgewood	17	2,000	41.9*
Sunset Park	14	3,000	78.0*
Bayside Little Neck	14	1,000	64.9*
Lower Manhattan	12	1,000	43.2*
Greenwich Village	9	1,000	50.5*
Long Island City-Astoria	7	1,000	66.7*
Southwest Queens	5	<500	61.0*
Downtown-Heights	4	<500	66.6*
East Harlem	3	<500	30.8*
Central Harlem	2	<500	54.3*

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Unscreened Russia/Ukraine born

	sample n	population	percent unscreened
NYC overall	503	39,000	44.5
Coney Island	179	16,000	46.2
Borough Park	67	7,000	52.0
Bensonhurst	58	3,000	35.0
Rockaway	32	1,000	58.5*
Canarsie	29	2,000	47.3*
Ridgewood	22	2,000	59.3*
Sunset Park	13	1,000	32.4*
Washington Heights	13	1,000	18.8*
Long Island City-Astoria	9	1,000	47.1*
Flushing	9	1,000	64.0*
Southwest Queens	9	1,000	67.7*
Flatbush	8	<500	37.6*
Fresh Meadows	4	<500	45.7*
Bed-Stuy	3	<500	54.3*

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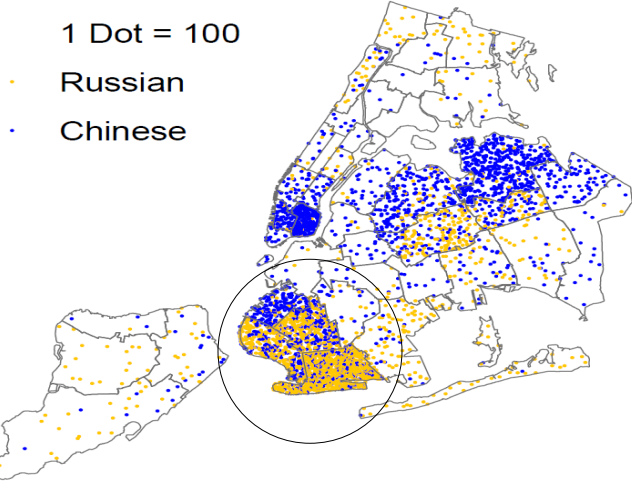
Unscreened Chinese

	sample n	population	percent unscreened
NYC overall	340	32,000	38.9
Flushing	50	4,000	29.0
Union Square	37	4,000	32.5*
Coney Island	23	3,000	53.5*
West Queens	23	3,000	42.9*
Borough Park	21	3,000	45.0*
Bensonhurst	21	1,000	31.1*
Fresh Meadows	20	1,000	20.4*
Ridgewood	17	2,000	41.9*
Sunset Park	14	3,000	78.0*
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Greenwich Village	9	1,000	50.5*
Long Island City-Astoria	7	1,000	66.7*
Southwest Queens	5	<500	61.0*
Downtown-Heights	4	<500	66.6*
East Harlem	3	<500	30.8*
Central Harlem	2	<500	54.3*

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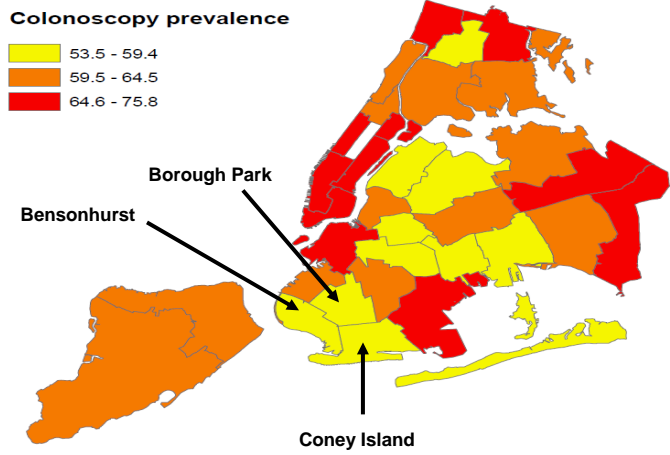
Distribution of Russian-speaking and Chinese-speaking households by UHF Neighborhood, 2006-2008 combined



NYC DOHMH Community Health Survey, 2006-2008 combined



Colonoscopy Screening by UHF Neighborhood, 2006-2008 combined



NYC DOHMH Community Health Survey, 2006-2008 combined



Unscreened Population

	Unscreened Population
UHF	
Overall NYC	776,000
West Queens	51,000
Coney Island	46,000
Borough Park	38,000
South Bronx	34,000
Flushing	31,000
Southern Staten Island	30,000
Pelham-Throgs Neck	29,000
SouthWest Queens	28,000
Jamaica	28,000
Bed Stuy-Crown Heights	27,000
Flatbush	27,000
Ridgewood	27,000
Upper East Side-Gramercy	26,000
Bensonhurst	25,000
Long Island City-Astoria	25,000
Washington Heights	24,000
Fordham-Bronx Park	22,000
Canarsie	19,000
Chelsea-Village	19,000
Union Square-Lower Manhattan	19,000
Upper West Side	18,000
SouthEast Queens	18,000
Northern Staten Island	18,000
Downtown-Heights-Slope	17,000
NE Bronx	16,000
Williamsburg-Bushwick	15,000
Bayside Little Neck-Fresh Meadows	15,000
East New York	14,000
Central Harlem	14,000
Rockaway	14,000
Greenpoint	11,000
Kingsbridge	10,000
Sunset Park	9,000
East Harlem	8,000

NYC DOHMH Community Health Survey, 2006-2008 combined



Conclusion



Conclusion

- Eleven neighborhoods in NYC with the lowest colonoscopy screening prevalences have been identified
- Two unscreened populations in southwest Brooklyn which may respond to more targeted, community-level interventions have been identified: Russian/Ukrainian born and Chinese born



Limitations

- Small sample sizes for some sub-groups in some neighborhoods
- Weighted population estimates referenced to 2000 U.S. census
- Cell phone-only users excluded
- Self-reported data



Strengths

- Large, population-based survey representative of NYC and its neighborhoods
- Can follow trends at the neighborhood level
- Can measure impact of interventions
- Can be used to guide interventions at the community level – ‘micro-targeting’ neighborhoods and population sub-groups



Future Work

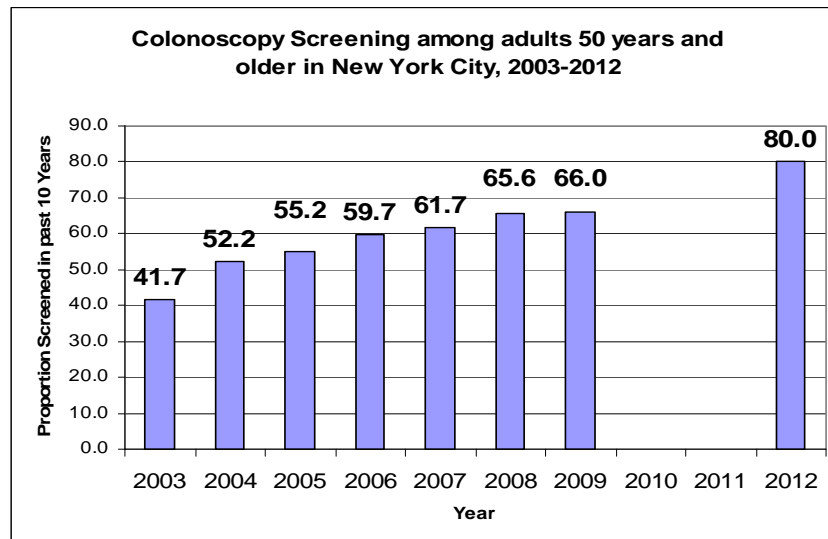


Neighborhood-level Interventions

- Russia, Ukraine and Chinese-born, 50 years and older, in Coney Island, Borough Park and Bensonhurst
- Hospitals, clinics and endoscopy centers
- Primary care providers
- Community-based organizations/media
- Program evaluation
- 'Pilot project' for other groups and neighborhoods



NYC Future Trend



NYC DOHMH Community Health Survey, 2003-2012



Acknowledgements

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