Epi Data Tables

Evacuation in New York City During Hurricanes Irene and Sandy

Data Tables

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Data Sources

The Community Health Survey is conducted annually by the Health Department with approximately 9,000 NYC residents ages 18 and older. 2012 data presented in this Brief are age adjusted to the US 2000 standard population, except for age-specific estimates. Starting in 2009, the CHS included adults with landline as well as cell phones. For more survey details, visit nyc.gov/health/survey. Analysis supported by CDC grant TP000585-01, *Impact of Hurricane Sandy on Morbidity and Mortality in NYC.*
Flood prone zipcodes include 10004, 10005, 10006, 10009,10038, 10280, 10282, 10303, 10305, 10306, 10307, 10309, 10314,11096, 11109, 11224, 11231, 11235, 11691, 11692, 11693, 11694, 11695, 11697

To access the related Epi Data Brief, go to nyc.gov/html/doh/downloads/pdf/epi/databrief51.pdf

Table 1. Characteristics of New York City residents who reported living in hurricane evacuation Zone A in 2011 and 2012

Source: NYC Community Health Survey (CHS), 2012 and 2013

CHS data are weighted to the residential adult population per American Community Survey (2012 for CHS 2013; 2011 for CHS 2012).

	Hurricane Irene, 2011				Hurricane Sandy, 2012			
			95% Confidence Interval				95% Confidence Interval	
	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit
Overall	495,000	8%	7.1	8.7	486,000	8%	6.9	8.3
Age group								
18-24	61,000	13%	8.4	18.2	69,000	14%	10.6	18.9
25-44	191,000	39%	33.4	45.0	169,000	35%	30.1	40
45-64	161,000	33%	28.1	37.8	157,000	32%	28	37
65+	77,000	16%	12.6	19.5	90,000	19%	15.4	22.3
Gender								
Male	233,000	47%	41.4	52.9	220,000	45%	40.3	50.3
Female	262,000	53%	47.1	58.6	266,000	55%	49.7	59.7
Race/ethnicity								
White, non-Hispanic	300,000	63%	56.6	68	306,000	64%	59.1	69
Black, non-Hispanic	61,000	13%	9.5	16.8	61,000	13%	9.7	16.7
Hispanic	70,000	15%	10.7	19.7	62,000	13%	10	16.6
Asian/Pacific Islander	49,000	10%	6.9	14.7	48,000	10%	7.1	14
Household Poverty Level[††]								
High: <200% FPL	160,000	39%	32.7	44.9	176,000	43%	37.5	48.6
Medium: 200% - <400% FPL	78,000	19%	14.6	23.8	82,000	20%	16.1	24.8
Low: >=400% FPL	176,000	43%	36.6	48.8	151,000	37%	31.9	42.2
Age Adjusted Education Level**								
High school or less	160,000	38%	32.1	43.3	136,000	33%	27.8	38
Some college or more	269,000	62%	56.7	67.9	272,000	67%	62	72.2
Employment Status								
Employed	303,000	61%	55.7	66.7	267,000	55%	50.3	60.3
Unemployed	31,000	6%	4.2	9.4	32,000	7%	4.7	9.3
Not in labor force	160,000	32%	27.3	37.9	184,000	38%	33.3	43.1
Self-reported Health								
Excellent/Good Health	364,000	74%	68.5	78.6	374,000	77%	73	81.2
Fair/Poor Health	129,000	26%	21.4	31.5	110,000	23%	18.8	27
Nativity								
US Born	289,000	59%	53.2	64.6	289,000	60%	54.6	64.6
Foreign Born	201,000	41 %	35.4	46.8	195,000	40 %	35.4	45.4

95% confidence intervals are a measure of estimate precision. The wider the interval the more imprecise the estimate.

**Data are age-adjusted to the US 2000 Standard Population, and is restricted to those ages 25 years and older

††Based on total people per household and their net income compared to the Federal Poverty Level (FPL). High poverty households' incomes <200% FPL; medium: 200% to <400%; low: 400% to 600%

Table 2. Characteristics of evacuees and non-evacuees living in Zone A in 2011 and 2012, New York City

Source: NYC Community Health Survey (CHS), 2012 and 2013

CHS data are weighted to the residential adult population per American Community Survey (2012 for CHS 2013; 2011 for CHS 2012).

	Hurricane Irene, 2011									Hurricane Sandy, 2012								
	Evacuees				Non Evacuees					Evacuees				Non Evacuees				
			95% Confidence Interval				95% Confidence Interval					95% Confidence Interval				95% Confidence Interval		
	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit	P-value	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit	P-value
Overall	131,000	31%	25.6	37.2	289,000	69%	62.8	74.4		178,000	37%	31.8	41.7	308,000	63%	58.3	68.2	
Age group																		
18-24	23,000	18% *	9.0	33.4	28,000	10%	6.0	14.9		31,000	17%	10.9	26.5	38,000	12%	8.4	17.9	
25-44	52,000	41% *	29.9	53.0	108,000	38%	30.8	44.8	0.280	76,000	43%	34.2	51.6	93,000	30%	24.8	36.5	0.010
45-64	37,000	29%	20.9	39.2	103,000	36%	29.6	42.1		48,000	27%	20.5	34.7	109,000	35%	29.9	41.3	
65+	15,000	12%	7.4	17.7	50,000	17%	13.2	22.4		23,000	13%	9.3	17.6	67,000	22%	17.4	27.1	
Gender																		
Male	43,000	33% *	23.4	44.3	154,000	53%	46.6	60.2	0.003	76,000	43%	34.5	51.5	144,000	47%	40.6	52.8	0.473
Female	87,000	67% *	55.7	76.6	134,000	47%	39.8	53.4		102,000	57%	48.5	65.5	164,000	53%	47.2	59.4	
Race/ethnicity																		
White, non-Hispanic	62,000	49% *	37.1	60.5	192,000	68%	60.9	73.7		106,000	61%	52.1	69.0	200,000	66%	59.7	71.9	
Black, non-Hispanic	28,000	22%	14.3	32.2	29,000	10%	6.5	15.3	0.029	32,000	18%	12.5	26.3	29,000	10%	6.5	14	0.015
Hispanic	26,000	21% *	11.3	35.2	37,000	13%	9.1	18.0		28,000	16%	10.8	22.9	34,000	11%	8	15.8	
Asian/Pacific Islander	11,000	8% *	4.2	16.3	27,000	9%	6.2	14.2		8,000	5% *	2.2	10.0	39,000	13%	8.9	18.7	
Household Poverty Level††																		
High: <200% FPL	51,000	46 % *	33.1	59	89,000	37%	30.1	44.3		66,000	42%	33.4	50.9	110,000	44%	36.7	50.8	
Medium: 200% - <400% FPL	16,000	15 %	8.3	24.5	47,000	19%	14.3	25.9	0.462	25,000	16%	10.3	23.4	58,000	23%	17.6	29.1	0.163
Low: >=400% FPL	44,000	40 % *	28.1	52.3	106,000	44%	36.5	51.1		67,000	42%	33.8	51.4	85,000	34%	27.7	40.1	
Age Adjusted Education Level**																		
High school or less	36,000	36% *	26.1	48.1	107,000	41%	34.2	48.4		39,000	27%	20.3	34.5	97,000	36%	29.4	43.5	
Some college or more	67,000	64% *	51.9	73.9	154,000	59%	51.6	65.8	0.399	108,000	73%	65.5	79.7	164,000	64%	56.5	70.6	0.035
Employment Status																		
Employed	75,000	57% *	45.2	68.6	179,000	62%	55.1	68.3		103,000	58%	49.6	66.5	164,000	54%	47.4	59.7	
Unemployed	10,000	8% *	3.9	14.5	18,000	6%	3.6	10.6	0.764	12,000	7%	3.9	11.9	20,000	6%	4.2	9.9	0.625
Not in labor force	46,000	35% *	24.2	47.6	92,000	32%	25.9	38.4		61,000	35%	27.0	43.5	122,000	40%	34	46.2	
Self-reported Health																		
Excellent/Good Health	92,000	70% *	58.6	80.0	218,000	76%	69.5	81.1	0.392	143,000	81%	74.4	86.0	231,000	75%	69.4	80.4	0.180
Fair/Poor Health	38,000	30% *	20.0	41.4	70,000	24%	18.9	30.5		34,000	19%	14.0	25.6	76,000	25%	19.6	30.6	
Nativity																		
US Born	71,000	54% *	42.3	65.6	193,000	68%	61.4	73.6	0.051	109,000	61%	52.9	69.4	180,000	59%	52.3	64.8	0.605
Foreign Born	60,000	46% *	34.4	57.7	91,000	32%	26.4	38.6		68,000	39%	30.6	47.1	127,000	41%	35.2	47.7	
Child in Home²																		
Yes	43,000	33% *	23.4	44.5	95,000	33%	27.2	40.1	0.972	69,000	40%	31.3	48.5	123,000	40%	33.8	46.3	0.951
No	87,000	67% *	55.5	76.6	191,000	67%	59.9	72.8		105,000	60%	51.5	68.7	185,000	60%	53.7	66.2	

95% confidence intervals are a measure of estimate precision. The wider the interval the more imprecise the estimate.

*Estimate should be interpreted with caution. The relative standard error (a measure of estimate precision) is greater than 30, making the estimate potentially unreliable.

**Data are age-adjusted to the US 2000 Standard Population, and is restricted to those ages 25 years and older

P value=χ^2

††Based on total people per household and their net income compared with the Federal Poverty Level (FPL). High poverty households' incomes <200% FPL; medium: 200% to <400%; low: 400% to 600%

²Children younger than 18 living in the household

Table 3. Characteristics of evacuees from Zone A in 2011 and 2012, New York City

Source: NYC Community Health Survey (CHS), 2012 and 2013

CHS data are weighted to the residential adult population per American Community Survey (2012 for CHS 2013; 2011 for CHS 2012).

| | Irene, 2011 | | | | | Sandy, 2012 | | | | | P-value Irene vs. Sandy ** |
| | | | 95% Confidence Interval | | | | | 95% Confidence Interval | | | |
	Weighted #	Percent	Lower Limit	Upper Limit	P-value	Weighted #	Percent	Lower Limit	Upper Limit	P-value	
Overall Evacuation Rate	131,000	31%	25.6	37.2		178,000	37%	31.8	41.7		0.163
Age group											
18-24	23,000	46% *	25.1	67.6	ref	31,000	45% *	29.5	60.8	ref	0.947
25-44	52,000	32%	23.2	43	0.296	76,000	45%	35.9	54.1	0.98	0.071
45-64	37,000	26%	19.6	34.6	0.118	48,000	31%	23.7	38.5	0.12	0.441
65+	15,000	23%	15.1	32.7	0.067	23,000	**25%**	18.7	33.7	**0.04**	0.643
Gender											
Male	43,000	22%	15.6	29.6	ref	76,000	35%	28.0	41.9	ref	**0.012**
Female	87,000	**39%**	31.2	48.3	**0.002**	102,000	38%	31.6	45.4	0.473	0.837
Race/ethnicity											
White, non-Hispanic	62,000	24%	18.4	31.6	ref	106,000	35%	28.6	41.0	ref	**0.030**
Black, non-Hispanic	28,000	**49%** *	34	65	**0.005**	32,000	**52%** *	38.0	66.2	**0.028**	0.797
Hispanic	26,000	42% *	25	61.1	0.086	28,000	45% *	31.9	58.1	0.182	0.821
Asian/Pacific Islander	11,000	29% *	14.9	47.8	0.648	8,000	**17%** *	8.1	33.5	**0.016**	0.295
Household Poverty Level††											
High: <200% FPL	51,000	36% *	25.7	48.2	ref	66,000	37%	29.5	46.2	ref	0.86
Medium: 200% - <400% FPL	16,000	26% *	15	39.9	0.221	25,000	30% *	20.2	42.4	0.306	0.597
Low: >=400% FPL	44,000	29%	21.2	38.9	0.352	67,000	44%	35.6	52.7	0.289	**0.020**
Nativity											
US Born	71,000	27%	20.4	34.4	ref	109,000	38%	31.4	44.3	ref	**0.026**
Foreign Born	60,000	**40%** *	29.9	50.0	**0.044**	68,000	35%	27.7	43.0	0.603	0.485
Age Adjusted Education Level*											
High school or less	36,000	26%	16.9	36.8	0.477	39,000	30%	22.0	40.0	0.08	0.499
Some college or more	67,000	30%	23.7	37.2	ref	108,000	40%	34.1	46.5	ref	**0.032**

95% confidence intervals are a measure of estimate precision. The wider the interval the more imprecise the estimate.

*Estimate should be interpreted with caution. The relative standard error (a measure of estimate precision) is greater than 30, making the estimate potentially unreliable.

Bold text indicates significant differences from the reference group, P<0.05

††Based on total people per household and their net income compared to the Federal Poverty Level (FPL). High poverty households' incomes <200% FPL; medium: 200% to <400%; low: 400% to 600%

** Bold text indicates significant difference between years, P<0.05

***Data are age-adjusted to the US 2000 Standard Population, and is restricted to those ages 25 years and older

Table 4. Percent of New York City adults reporting various chronic conditions, overall and among those living in Zone A in 2011 and 2012

Source: NYC Community Health Survey (CHS), 2012 and 2013

CHS data are weighted to the residential adult population per American Community Survey (2012 for CHS 2013; 2011 for CHS 2012).

	Hurricane Irene, 2011								Hurricane Sandy, 2012							
	City		95% Confidence Interval		Zone A		95% Confidence Interval		City		95% Confidence Interval		Zone A		95% Confidence Interval	
	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit
Total	6,307,000	100%	-	-	495,000	8%	7.1	8.7	6,385,000	100%	-	-	486,000	8%	6.9	8.3
Obesity	1,498,000	24%	22.8	25.5	132,000	27%	22.3	31.8	1,473,000	23%	22.2	24.7	120,000	25%	20.9	29.6
Asthma	792,000	13%	11.5	13.7	59,000	12%	8.4	16.5	744,000	12%	10.8	12.6	61,000	13%	9.6	16.3
High Blood Pressure	1,727,000	27%	26.1	28.8	127,000	**26%**	21.9	30.4	1,816,000	29%	27.3	29.8	156,000	**32%**	27.8	37
High Cholesterol	1,811,000	29%	27.6	30.4	158,000	32%	27.4	37.1	1,883,000	30%	28.4	31	169,000	35%	30.2	39.9
Diabetes	667,000	11%	9.7	11.5	54,000	11%	8.2	14.3	676,000	11%	9.8	11.5	51,000	11%	8.1	13.7
Any Physical Health Condition	3,635,000	58%	56.7	59.9	300,000	61%	55.3	67	3,649,000	58%	56.5	59.5	310,000	65%	59.6	69.4

95% confidence intervals are a measure of estimate precision. The wider the interval the more imprecise the estimate.

Bold text -significant difference between years, among residents in Zone A, P<0.05

Note: City includes zone A

Table 5. Percent of New York City adults living in Zone A in 2011 and 2012 reporting various chronic conditions, by evacuation status

Source: NYC Community Health Survey (CHS), 2012 and 2013

CHS data are weighted to the residential adult population per American Community Survey (2012 for CHS 2013; 2011 for CHS 2012).

	Hurricane Irene, 2011									Hurricane Sandy, 2012								
	Evacuees				Non-Evacuees					Evacuees				Non-Evacuees				
			95% Confidence Interval				95% Confidence Interval					95% Confidence Interval				95% Confidence Interval		
	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit	P-value	Weighted #	Percent	Lower Limit	Upper Limit	Weighted #	Percent	Lower Limit	Upper Limit	P-value
Total	131,000	31%	25.6	37.2	289,000	69%	62.8	74.4		178,000	37%	31.8	41.7	308,000	63%	58.3	68.2	
Obesity	35,000	27%	18.9	36.8	81,000	28%	22.5	34.9	0.81	39,000	22%	16.5	29.5	81,000	27%	21.3	32.7	0.34
Asthma	16,000	12%	7.3	19.8	33,000	12%	7.8	16.9	0.86	32,000	**18%**	12.3	26.2	29,000	**9%**	6.6	13.1	**0.03**
High Blood Pressure	29,000	23%	16.5	31.9	79,000	27%	22.2	33.0	0.43	51,000	29%	21.7	36.6	105,000	34%	28.8	40.4	0.23
High Cholesterol	45,000	35% *	25.2	45.3	95,000	33%	27.0	39.2	0.77	53,000	30%	22.3	38.3	116,000	38%	32.1	44.2	0.11
Diabetes	19,000	15%	8.4	23.9	29,000	10%	7.0	13.9	0.28	14,000	8% *	4.4	14.0	37,000	12%	9.0	16.1	0.16
Any Physical Health Condition	77,000	61% *	48.0	72.7	180,000	62%	55.3	68.8	0.87	109,000	62%	53.6	70.5	200,000	66%	59.7	71.7	0.50

95% confidence intervals are a measure of estimate precision. The wider the interval the more imprecise the estimate.

*Estimate should be interpreted with caution. Estimate's Relative Standard Error (a measure of estimate precision) is greater than 30% or the 95% Confidence Interval half-width is too large, or the sample size is too small, making the estimate potentially unreliable.

P-value=χ²

Bold text indicates significant differences by evacuation status