Enhancing Coordination of Behavioral Health Services after Superstorm Sandy: Planning for Future Disasters

Final Data Profile: Long Branch and Monmouth Beach Community Medicare Fee-for-Service Beneficiaries

Demographics, Behavioral Health Conditions, and Utilization of Health Services (Medicare Fee-for-Service Beneficiaries)

July 9, 2014

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On October 29, 2012, Superstorm Sandy hit the Eastern Seaboard, impacting more than a dozen states. New Jersey, which took the brunt of the storm along its densely populated coastline, was devastated. Thousands of residents were displaced, their homes and communities damaged or destroyed.

Lessons learned from prior natural disasters showed that victims of storms like Superstorm Sandy are often at an elevated risk for acute or behavioral health issues such as post-traumatic stress disorder (PTSD), depression, and substance abuse.[1,2] While disaster-related issues subside over time, evidence shows that victims can experience a prolonged period of elevated risk, especially those with pre-existing mental health issues.[3] Older adults and disabled residents with mental health conditions are at increased risk of deteriorating health, depression, increased isolation, and breakdown in the continuum of health care. Additionally, past natural disasters also show that access to informational resources on disaster-related mental health disorders, outcomes, and service utilization are important factors to consider.[4,5]

This final community profile can help healthcare professionals learn more about the behavioral health status and utilization patterns of Medicare Fee-for-Service (FFS) beneficiaries before and after Superstorm Sandy. As such, it may be a useful tool in planning for future disasters. The profile explores community-level health status and health determinants of post-disaster spikes in behavioral health issues and treatments. This last update includes one more quarter of comprehensive post- Sandy data than the previous profile, which was published in May 2014.

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*E*nhancing Coordination of Behavioral Health Services after Superstorm Sandy: Planning for Future Disasters is a Special Innovation Project funded by the Centers for Medicare & Medicaid Services (CMS). As part of this project, Healthcare Quality Strategies, Inc. (HQSI), the CMS quality improvement organization (QIO) for New Jersey, studied data on prevalence and incidence of selected behavioral health conditions, the utilization of health services, and demographic information from the Medicare claims database for Medicare FFS beneficiaries residing in the 10 New Jersey FEMA-declared disaster counties after Superstorm Sandy. From its analysis, HQSI created data profiles for 10 FEMA-designated counties, as well as a subset of 10 selected communities.

This final profile is the last update planned for the Long Branch and Monmouth Beach community and includes data from January 1, 2011 to December 31, 2013. The Long Branch and Monmouth Beach community was selected because it had high rates of Medicare FFS beneficiaries both with and at risk for depression or proxy disorders prior to Superstorm Sandy. This profile can be used to determine and compare the community's prevalence and incidence of the selected behavioral health conditions and utilization of services to its county rate before and after Superstorm Sandy.

The data in the profile is based on Medicare FFS claims data and provides a glimpse into the prevalence and incidence of selected behavioral health conditions and risk factors for depression, as well as the utilization of Medicare-covered behavioral health services among Medicare beneficiaries residing in the community before and after Superstorm Sandy. Since patients with behavioral health conditions may receive other health services because of medical problems caused by their behavioral health conditions or they may avoid utilizing behavioral health services, this report also looks at the utilization of non-behavioral health services.

The county and community profiles are being shared with state and local governments and agencies, health care providers, community-based organizations, and the research community to support a community-based approach to enhance the coordination of behavioral health services after a natural disaster, and to increase utilization of the Medicare depression screening benefit which became a covered service in October 2011. This benefit is important for victims of major disasters like Superstorm Sandy who are often at an elevated risk for behavioral health issues and can experience a prolonged period of elevated risk after a disaster. Older adults and disabled residents with behavioral health conditions in particular are at increased risk of deteriorating health, depression, increased isolation, and breakdown in the continuum of health care. They are also less likely to report symptoms, which a depression screening can capture.

WHAT'S NEW IN THIS UPDATE

This second updated profile shows four quarters of post-Sandy data, with the most updated claims from January 2011 to December 2013. The profile compares the 12-month rates from the year before and after the storm. In this profile, we define October 2011 to September 2012 as the year before Superstorm Sandy, October 1, 2012 through December 31, 2012 as the time frame when Superstorm Sandy occurred, and January 2013 to December 2013 as the year after the storm.

HOW TO USE THIS PROFILE

This profile includes an analysis of the eight behavioral health conditions which, based on literature review and feedback from the subject matter experts consulted for this project, were found to increase after natural disasters.

This profile is divided into the following sections, each of which is preceded by a user-friendly overview:

- Demographics (page 11)
- Prevalence and incidence of behavioral health conditions (page 13)
- Risk factors for depression or proxy disorders (page 29)
- Utilization of outpatient behavioral health assessments (page 35)
- Utilization of outpatient behavioral health therapies (page 44)
- Utilization of inpatient health services (page 49)
- Utilization of inpatient health services within 30 days of acute care hospital discharge (page 54)
- Utilization of other settings (page 58)
- Listing of major health providers (page 63)

Here are some additional tips for using this profile:

- Use the Executive Summary (pages 9-10) for a quick overview of this profile's key points, as well as a snapshot table that summarizes the prevalence of the selected behavioral health conditions and utilization of behavioral health services before and after Sandy

- Use the Behavioral Health Conditions section (pages 13-34) for in-depth analyses and graphical comparison on the prevalence and incidence of eight behavioral health conditions before and after Superstorm Sandy

- Use the New Jersey and county maps to: identify areas with higher rates of Medicare FFS beneficiaries at risk for depression and proxy disorders (pages 31-32); and areas with low utilization of the depression screening benefit (pages 38-39)

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METHODOLOGY

Each community profile compares the community's statistics to the statistics of the county where each community is located. Primary data sources include Medicare FFS Part A and Part B claims, the Medicare enrollment database, and U.S. Census data. The Medicare enrollment database includes basic demographic statistics such as age, gender, and race while the U.S. Census data provides a proxy indicator (average household income) for socio-economic status.[6] Based on the ICD-9-CM (International Classification of Disease, Ninth Revision, Clinical Modification), CPT (Current Procedural Terminology), or HCPCS (Healthcare Common Procedure Coding System) codes in Medicare Part A and Part B claims, beneficiaries were identified for diseases/conditions related to behavioral health conditions such as depression. Appendices A through G contain documentation, technical notes, codes, algorithms, data sources, and references.

Medicare Part A claims were also used to analyze utilization of health services in acute care hospitals, skilled nursing facilities, medical rehabilitation facilities, home health agencies, hospice, and inpatient psychiatric facilities. Medicare Part A and Part B claims provide information on the utilization of mental health outpatient services for assessment (e.g., depression screening, diagnostic psychological tests) and treatment (e.g., individual psychotherapy, biofeedback therapy).

To identify beneficiaries with an elevated risk of depression after the storm, HQSI conducted a literature review of risk factors for depression (see Appendix B). Previous studies identified psychosocial and biological factors, increased age, history of cancer, Parkinson's disease, Alzheimer's disease, changes in mental function, and medication side effects as risk factors for developing depression. Based on findings from the literature review and factors available through Medicare claims, logistic regression analysis was conducted with Medicare claims, and the top five risk factors (Alzheimer's disease and related disorders or senile dementia, hip/pelvic fractures, amputations, substance or alcohol abuse or tobacco use, and sleep disturbance) were used to identify beneficiaries with high risk for developing depression or proxy disorders (i.e., anxiety and adjustment disorders).

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MEASUREMENT TIME FRAMES

This profile includes data from January 1, 2011 through December 31, 2013. Results are presented using different charts and measurement time frames as follows:

- Annual bar charts show the annual rates in the year before (October 1, 2011 to September 30, 2012) and after (January 1, 2011 to December 31, 2013) Superstorm Sandy. Statistics on demographics, prevalence of behavioral health conditions, and utilization of health services are presented for this 12-month period. These statistics allow for comparison before and after Superstorm Sandy

- Annual trend charts with rolling quarters for the behavioral health conditions and utilization statistics are included to adjust for seasonal variation and to examine possible changes in the year before and after Superstorm Sandy. The time period includes nine data points from January 1, 2011 to December 31, 2013

- Annual percent change (relative change) bar charts show relative increase or decrease in rates from the year before and after Superstorm Sandy. These statistics allow for comparison of the community to the county and to analyze the potential impact of Superstorm Sandy

- Quarterly new incidence charts for eight behavioral health conditions include eight quarters of data from January 1, 2012 to December 31, 2013. This allows for the identification of new cases in a given quarter when compared to the prior year

- Quarterly line charts show the trend in the utilization of depression screening for eight quarters from January 1, 2012 to December 31, 2013

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DATA CONSIDERATIONS

There are now four quarters of post-storm data available, which are reflected in this final update. The claims data processing lag of at least six months, coupled with the one-year project time frame, reduces the optimal time frame for more accurate estimation of post-Sandy effects.

Identification of beneficiaries with behavioral health conditions is based on diagnoses being reported in Medicare FFS claims and could result in underestimation. There is no accurate way to identify when certain health conditions began and ended when claims data is used.

According to the subject matter experts consulted for this project, unlike other conditions, behavioral health issues are often underdiagnosed in our society and the stigma associated with behavioral health conditions may prevent people from seeking care in mental health facilities. The subject matter experts also indicated that estimating the prevalence of depression using claims data can be particularly difficult as depression is often undiagnosed or not documented. Depression can be present with symptoms of anxiety and adjustment disorders. Based on this feedback, a combination measure named "depression or proxy disorders" was created to estimate prevalence and incidence of depression. If a patient had at least one of the three conditions reported in Medicare claims, he/she was flagged as having depression or proxy disorders.

This community profile can be used to compare the prevalence and incidence rates of eight selected behavioral health conditions (see page 19) based on the ICD-9-CM codes through the analysis of Medicare claims. This profile may be used to prioritize and plan community and county preparation for the care, tracking, and monitoring of Medicare beneficiary behavioral health status and health care utilization patterns.

This is the final update of these data profiles which includes one more quarter of data than the previous profile during the post-Superstorm Sandy time period as the project ends on July 31, 2014.

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KEY OBSERVATIONS

The following observations show the Long Branch and Monmouth Beach community's percent change and rates after Superstorm Sandy among Medicare FFS beneficiaries.

1. The Long Branch and Monmouth Beach community experienced a larger increase in substance abuse alone (4.66%) than Monmouth County. There was a relative increase in depression (3.79%), alcohol or substance abuse (1.97%), and PTSD (6.75%) in the community.

2. The Long Branch and Monmouth Beach community experienced a larger decrease in suicide and intentional self-inflicted injuries (9.17%) than Monmouth County.

3. The demographic breakdown of beneficiaries residing in the Long Branch and Monmouth Beach community, who experienced higher rates of depression or proxy disorders, is as follows: Whites (239.19 per 1,000 beneficiaries), females (260.92 per 1,000 beneficiaries), and those below age 65 (406.36 per 1,000 beneficiaries).

4. In the Long Branch and Monmouth Beach community, there was a 3.64% relative decrease in any of the top five risk factors for depression or proxy disorders. This includes a larger decrease in Alzheimer's disease and related disorders or senile dementia (17.66%) than Monmouth County.

5. Annual depression screening in the Long Branch and Monmouth Beach community increased from 2.61 per 1,000 beneficiaries before the storm to 6.66 per 1,000 after the storm.

6. Unlike Monmouth County, the Long Branch and Monmouth Beach community experienced an increase in the utilization of all behavioral health therapies: individual psychotherapy (1.61%), family psychotherapy (10.89%), and group psychotherapy (43.13%).

7. The Long Branch and Monmouth Beach community experienced a larger decrease in observation stays (30.62%) and observation stays that occurred within 30 days of discharge (9.18%) than Monmouth County.

8. The Long Branch and Monmouth Beach community experienced a larger decrease in the utilization of home health agency services (11.34%) than Monmouth County.

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Executive Summary

The *Snapshot of the Long Branch and Monmouth Beach Community* (Figure 1) summarizes the prevalence of the behavioral health conditions as well as risk factors for depression or proxy disorders analyzed for this profile. This *Snapshot* also lists the most frequently performed behavioral health assessments and therapies in the Long Branch and Monmouth Beach community compared to the average of Monmouth County. The non-behavioral health utilization measures that were calculated for this profile are not included in the *Snapshot*.

Figure 1. Snapshot of Long Branch and Monmouth Beach						
	Prevalence per 1,000 Medicare FFS Beneficiaries					
	Long Branch and Monmouth Beach			Monmouth County		
Behavioral Health Disorders	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Depression or Proxy Disorders	241.93	231.73	-4.22	206.98	209.21	1.08
• Depression alone	151.05	156.78	3.79	133.28	133.07	-0.16
• Anxiety Disorders alone	134.05	126.71	-5.48	114.40	119.46	4.42
• Adjustment Disorders alone	48.39	46.60	-3.70	39.16	37.29	-4.78
Alcohol or Substance Abuse	74.98	76.46	1.97	34.42	39.88	15.86
• Substance Abuse alone	42.07	44.03	4.66	17.34	18.07	4.21
PTSD	7.85	8.38	6.75	5.15	5.84	13.40
Suicide and Intentional Self-Inflicted Injury	16.79	15.25	-9.17	5.28	5.17	-2.08
Any of the Top Five Risk Factors* for Depression or Proxy Disorders						
• Any of the Top Five Risk Factors	157.80	152.06	-3.64	133.70	135.84	1.60
• Substance or Alcohol Abuse or Tobacco Use	112.47	110.18	-2.04	79.29	85.31	7.59
• Alzheimer's Disease and related disorders or Senile Dementia	31.83	26.21	-17.66	35.85	31.78	-11.35
• Sleep Disturbance	25.51	24.92	-2.31	24.35	24.72	1.52
• Hip/Pelvic Fractures	9.38	6.66	-29.00	7.47	7.51	0.54
• Amputations	1.09	0.65	-40.37	0.75	0.80	6.67
	Utilization per 1,000 Medicare FFS Beneficiaries					
	Long Branch and Monmouth Beach			Monmouth County		
Behavioral Health Services	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Assessments						
• Depression Screening**	2.61	6.66	155.17	4.72	13.97	195.97
• Psychiatric Diagnostic Procedures	86.10	82.90	-3.72	61.59	54.19	-12.01
• Neuropsychological Tests	11.56	6.66	-42.39	10.46	10.99	5.07
Therapy						
• Individual Psychotherapy	62.56	63.57	1.61	53.59	52.00	-2.97
• Family Psychotherapy	3.49	3.87	10.89	3.56	2.68	-24.72
• Group Psychotherapy	4.80	6.87	43.13	3.23	2.55	-21.05
Psychiatric Hospital Admissions	29.21	28.78	-1.47	9.44	7.78	-17.58

*The top five risk factors were identified based on findings from a literature review (Appendix B) and factors available through Medicare claims. Logistic regression analysis was conducted with Medicare claims.

**Depression Screening comparison time frames are different (January 1, 2012 – December 31, 2012 vs. January 1, 2013 – December 31, 2013) due to availability of depression screening data starting in January 2012.

Long Branch and Monmouth Beach

Medicare FFS Demographics

At A Glance
(January 1, 2013 – December 31, 2013)

Total Medicare FFS Population	4,996
Females	2,765 (55.34%)
Males	2,231 (44.66%)
White	3,955 (79.16%)
Black	761 (15.23%)
Asian	27 (0.54%)
Hispanic	130 (2.60%)
Other	123 (2.46%)
Average Age	70.60
ZIP Codes	07740, 07750

Source: Medicare Claims Database

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FIGURE 2. TOTAL MEDICARE FFS BENEFICIARIES*

	10/1/11-9/30/12	1/1/13-12/31/13
Long Branch and Monmouth Beach	5,263	4,996
Monmouth	101,644	100,021
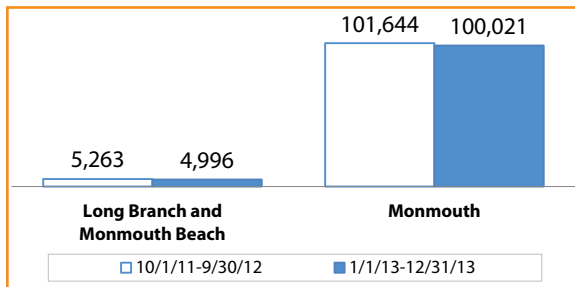
* Total beneficiaries who were under Medicare FFS coverage for at least one month during the time frame.

The total Medicare FFS population of the Long Branch and Monmouth Beach community prior to Superstorm Sandy was 5,263. After the storm, this number decreased to 4,996.

FIGURE 3. PERCENT OF MEDICARE FFS BENEFICIARIES IN THE GENERAL POPULATION IN 2012*

Long Branch and Monmouth Beach	Monmouth
19.34%	15.66%
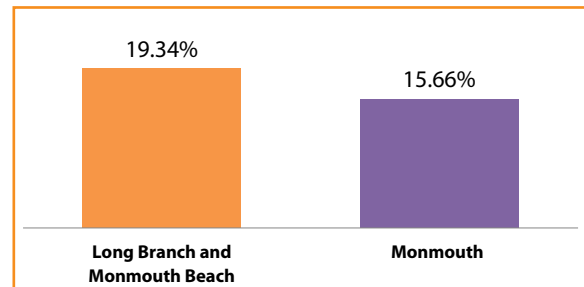
* Source: Medicare denominator file CY 2012, U.S. Census Bureau, American Cancer Survey (ACS), 2012 http://www.census.gov/.

Medicare FFS beneficiaries made up 19.34% of the Long Branch and Monmouth Beach community in calendar year 2012.

FIGURE 4. PERCENT OF MEDICARE FFS BENEFICIARY POPULATION BY FEMALE

	10/1/11 – 9/30/12	1/1/13 – 12/31/13	Absolute Change*
Long Branch and Monmouth Beach	55.79	55.34	-0.44
Monmouth County	56.24	56.01	-0.23

* Due to rounding, the absolute change may not be the same as the difference subtracted from the two time frames shown.

Prior to the storm, females made up 55.79% of the entire Medicare FFS population residing in the Long Branch and Monmouth Beach community and males made up 44.21%. After the storm, the female beneficiary population decreased to 55.34% and males increased to 44.66%.

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FIGURE 5. PERCENT OF MEDICARE FFS BENEFICIARY POPULATION BY RACE

Race	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	Absolute Change*	10/1/11 – 9/30/12	1/1/13 – 12/31/13	Absolute Change*
White	79.57	79.16	-0.41	87.88	87.54	-0.35
Black	15.20	15.23	0.03	7.00	6.70	-0.30
Hispanic	2.72	2.60	-0.11	0.81	0.79	-0.02
Asian	0.53	0.54	0.01	1.57	1.57	0.00
Other	1.98	2.46	0.49	2.73	3.40	0.67

* Due to rounding, the absolute change may not be the same as the difference subtracted from the two time frames shown.

Both before and after Superstorm Sandy, the majority of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community were White followed by Black, Hispanic, and Asian.

FIGURE 6. PERCENT OF MEDICARE FFS BENEFICIARY POPULATION BY AGE*

Age	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	Absolute Change**	10/1/11 – 9/30/12	1/1/13 – 12/31/13	Absolute Change**
<65	19.78	19.08	-0.70	12.52	12.08	-0.43
65 – 74	41.95	43.73	1.78	46.43	47.88	1.45
75 – 84	23.50	22.74	-0.77	25.92	25.34	-0.58
85 and Above	14.76	14.45	-0.31	15.13	14.70	-0.43
Average Age	70.67	70.60	-0.06	72.44	72.40	-0.04

* Age calculated as end date of time frame or date of death minus birth date.
** Due to rounding, the absolute change may not be the same as the difference subtracted from the two time frames shown.

Both before and after Superstorm Sandy, the largest age group of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community was between ages 65 and 74 years old, followed by beneficiaries between 75 and 84 years old. The average age of beneficiaries residing in this community decreased from 70.67 years old prior to the storm to 70.60 years old after the storm.

FIGURE 7. 2012 MEDIAN HOUSEHOLD INCOME (65 YEARS AND ABOVE)

$51,545 — Long Branch and Monmouth Beach
$53,705 — Monmouth
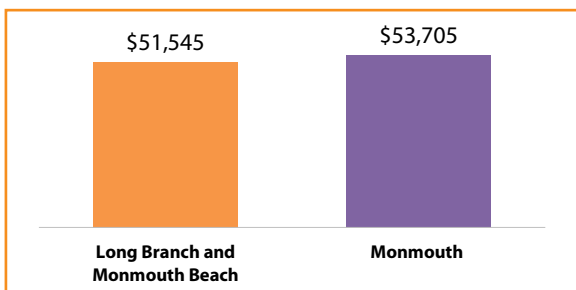
According to U.S. Census Data from 2012, residents aged 65 and older residing in the Long Branch and Monmouth Beach community had a median household income of $51,545. This was lower than the average income among seniors residing in all of Monmouth County.

Source: U.S. Census Bureau, American Community Survey (ACS), 2012 http://www.census.gov/.

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PREVALENCE AND INCIDENCE

Using Medicare FFS claims data, eight behavioral health conditions were analyzed: depression or proxy disorders, depression, adjustment disorder, anxiety disorder, post-traumatic stress disorder (PTSD), alcohol or substance abuse, substance abuse alone, and suicide and intentional self-inflicted injury. These conditions were chosen based on literature review and feedback from subject matter experts.

Claims data can underestimate the real prevalence and incidence of depression in the population and individuals with depression could be diagnosed as having anxiety or adjustment disorders, as noted by the subject matter experts consulted for this project. Therefore, HQSI created a combination measure for depression (depression or proxy disorders) which includes beneficiaries who were reported for either depression, anxiety, or adjustment disorders.

The behavioral health data from January 1, 2011 to December 31, 2013 for these different measures were calculated to quantify condition occurrence:

1. The annual prevalence bar chart compares rates in two annual time frames

2. New incidence in a quarter for the specified condition that was not present in the prior 12 months (Q1 2012 – Q4 2013)

3. The yearly prevalence of the condition with quarterly rolling trends to account for seasonal variation

Refer to Appendix A for measurement calculation and Appendix E for quarterly time frames and formulae.

Summary

Figure 8. Percent Change of Prevalence of Selected Behavioral Health Conditions per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Depression or Proxy Disorders	241.93	231.73	-4.22	206.98	209.21	1.08
• Depression	151.05	156.78	3.79	133.28	133.07	-0.16
• Anxiety	134.05	126.71	-5.48	114.40	119.46	4.42
• Adjustment	48.39	46.60	-3.70	39.16	37.29	-4.78
Alcohol or Substance Abuse	74.98	76.46	1.97	34.42	39.88	15.86
• Substance abuse alone	42.07	44.03	4.66	17.34	18.07	4.21
PTSD	7.85	8.38	6.75	5.15	5.84	13.40
Suicide and intentional self-inflicted injuries	16.79	15.25	-9.17	5.28	5.17	-2.08

The Long Branch and Monmouth Beach community experienced a larger increase in substance abuse and a larger decrease in suicide and intentional self-inflicted injuries than Monmouth County.

FIGURE 9. QUARTERLY NEW INCIDENCE TREND OF SELECTED BEHAVIORAL HEALTH CONDITIONS: DEPRESSION OR PROXY DISORDERS* PER 1,000 MEDICARE FFS BENEFICIARIES
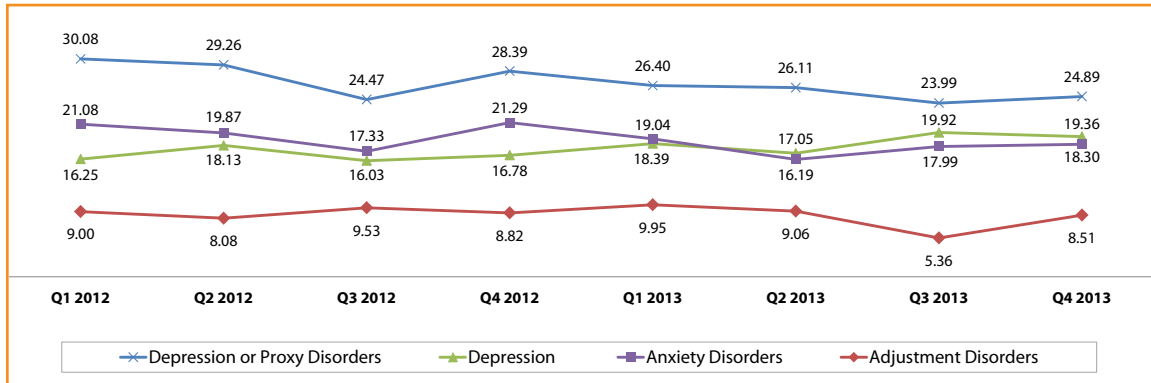
* Quarterly new incidence of conditions that were not diagnosed in the prior year.

FIGURE 10. QUARTERLY NEW INCIDENCE TREND OF OTHER SELECTED BEHAVIORAL HEALTH CONDITIONS* PER 1,000 MEDICARE FFS BENEFICIARIES
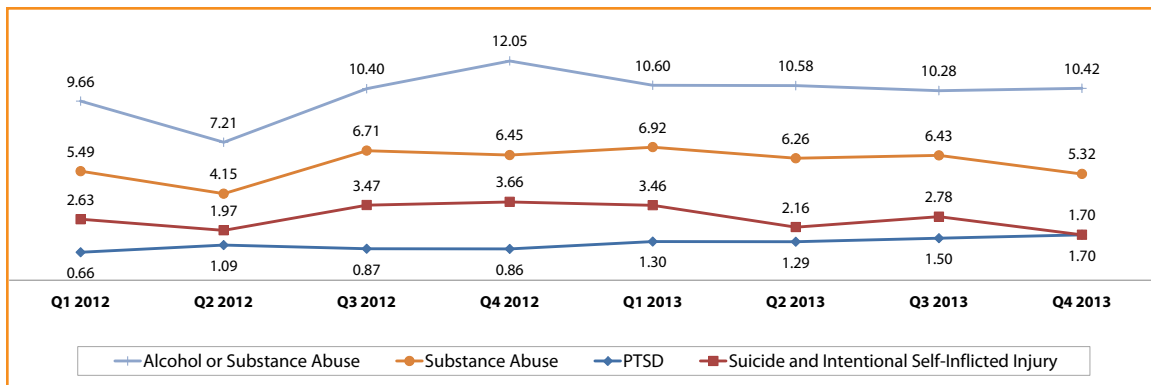
* Quarterly new incidence of conditions that were not diagnosed in the prior year.

The charts above reflect quarterly trending in new incidence of the eight selected behavioral health conditions among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

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FIGURE 11. ANNUAL PREVALENCE TREND OF SELECTED BEHAVIORAL HEALTH CONDITIONS: DEPRESSION OR PROXY DISORDERS PER 1,000 MEDICARE FFS BENEFICIARIES
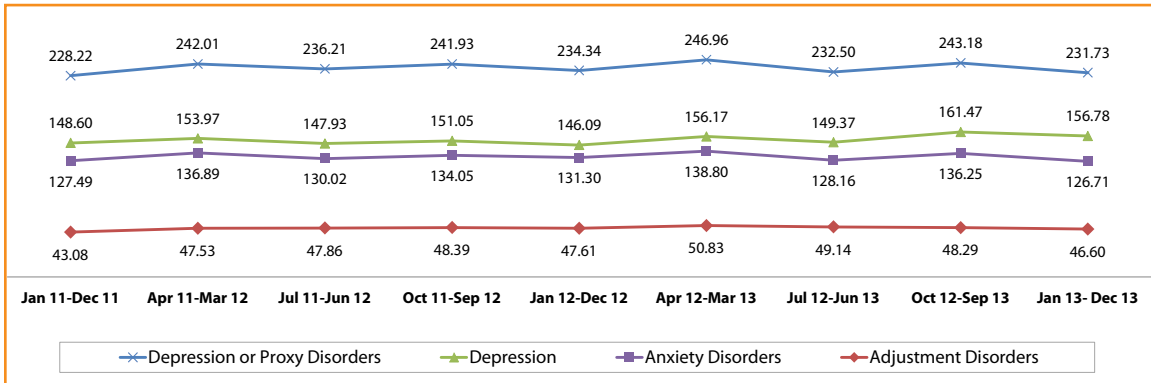
FIGURE 12. ANNUAL PREVALENCE TREND OF OTHER SELECTED BEHAVIORAL HEALTH CONDITIONS PER 1,000 MEDICARE FFS BENEFICIARIES
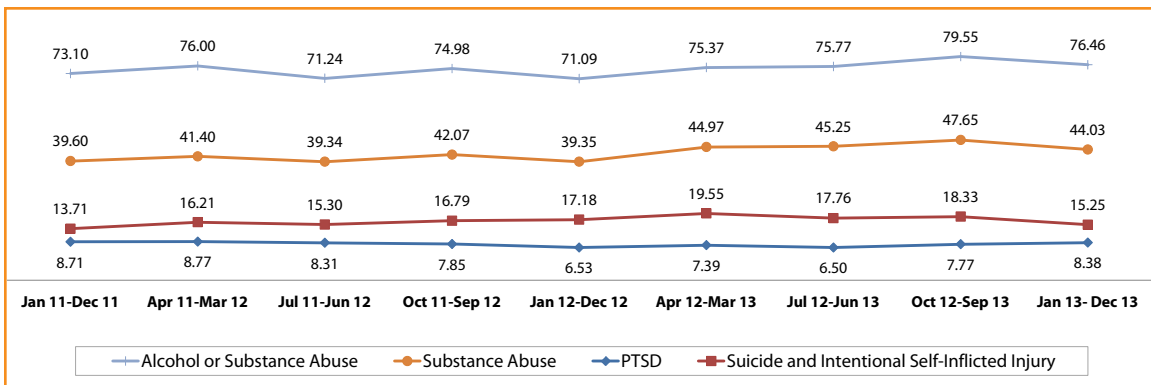
The charts above reflect annual trending in the prevalence of the eight selected behavioral health conditions among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

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Depression or Proxy Disorders

Figure 13. Demographics of Depression or Proxy Disorders among Medicare FFS Beneficiaries				
	10/1/11 – 9/30/12		1/1/13 – 12/31/13	
	Number of Beneficiaries	Percent (%)	Number of Beneficiaries	Percent (%)
Race				
• White	902	81.26	885	82.02
• Black	158	14.23	151	13.99
• Hispanic	30	2.70	27	2.50
• Asian	7	0.63	5	0.46
• Other	13	1.17	11	1.02
Gender				
• Males	402	36.22	404	37.44
• Females	708	63.78	675	62.56
Age				
• Below 65	363	32.70	358	33.18
• 65-74	319	28.74	307	28.45
• 75-84	238	21.44	229	21.22
• 85 and Above	190	17.12	185	17.15
Total	1,110	100.00	1,079	100.00

This table displays the number and percentage of Medicare FFS beneficiaries of each race, gender, and age diagnosed with depression or proxy disorders before and after Superstorm Sandy. There were 1,110 beneficiaries residing in the Long Branch and Monmouth Beach community diagnosed with depression or proxy disorders before the storm. This decreased to 1,079 beneficiaries after the storm.

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Figure 14. Depression or Proxy Disorders Rate per 1,000 Medicare FFS Beneficiaries by Demographic Group					
	10/1/11 – 9/30/12			1/1/13 – 12/31/13		
	Numerator	Denomi-nator*	Rate per 1,000 Beneficiaries	Numerator	Denomi-nator*	Rate per 1,000 Beneficiaries
Race						
• White	902	3,658	246.58	885	3,700	239.19
• Black	158	702	225.07	151	707	213.58
• Hispanic	30	120	250.00	27	119	226.89
• Asian	7	25	280.00	5	25	200.00
• Other	13	87	149.43	11	108	101.85
Gender						
• Males	402	2,004	200.60	404	2,070	195.17
• Females	708	2,586	273.78	675	2,587	260.92
Age						
• Below 65	363	871	416.76	358	881	406.36
• 65-74	319	1,891	168.69	307	2,025	151.60
• 75-84	238	1,144	208.04	229	1,091	209.90
• 85 and Above	190	684	277.78	185	661	279.88
Total	1,110	4,590	241.83	1,079	4,658	231.64

* Total eligible beneficiaries (denominator) computed after adjusting for total enrolled FFS days divided by the total measurement days in the time frame

This table displays the rate of Medicare FFS beneficiaries per 1,000 diagnosed with depression or proxy disorders by race, gender, and age both before and after Superstorm Sandy by different demographic groups. The numerator is the number of beneficiaries with a claim for depression or proxy disorders; the denominator is the total number of beneficiaries residing in the community for each group.

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FIGURE 15. DEPRESSION OR PROXY DISORDERS RATE BY RACE PER 1,000 MEDICARE FFS BENEFICIARIES
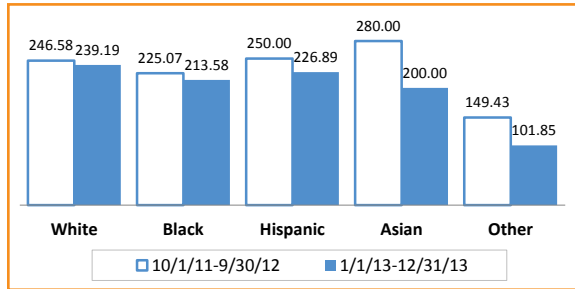
White Medicare FFS beneficiaries have the highest rate of depression or proxy disorders. In the 12 months prior to Superstorm Sandy, 246.58 per 1,000 White beneficiaries were diagnosed with depression or proxy disorders. After the storm, this rate decreased to 239.19 per 1,000 beneficiaries.

FIGURE 16. DEPRESSION OR PROXY DISORDERS RATE BY GENDER PER 1,000 MEDICARE FFS BENEFICIARIES
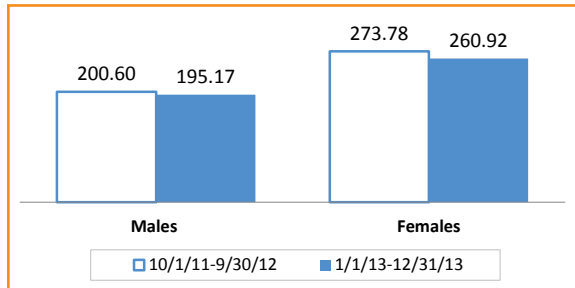
Female Medicare FFS beneficiaries have a higher rate of depression or proxy disorders. In the 12 months prior to Superstorm Sandy, 273.78 per 1,000 female beneficiaries were diagnosed with depression or proxy disorders. After the storm, this rate decreased to 260.92 per 1,000 beneficiaries.

FIGURE 17. DEPRESSION OR PROXY DISORDERS RATE BY AGE GROUP PER 1,000 MEDICARE FFS BENEFICIARIES
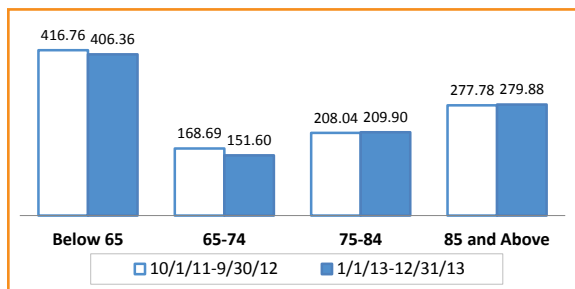
Medicare FFS beneficiaries below the age of 65 have the highest rate of depression of proxy disorders. In the 12 months prior to Superstorm Sandy, 416.76 per 1,000 beneficiaries below the age of 65 were diagnosed with depression or proxy disorders. After the storm, this rate decreased to 406.36 per 1,000 beneficiaries.

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FIGURE 18. DEPRESSION OR PROXY DISORDERS PER 1,000 MEDICARE FFS BENEFICIARIES
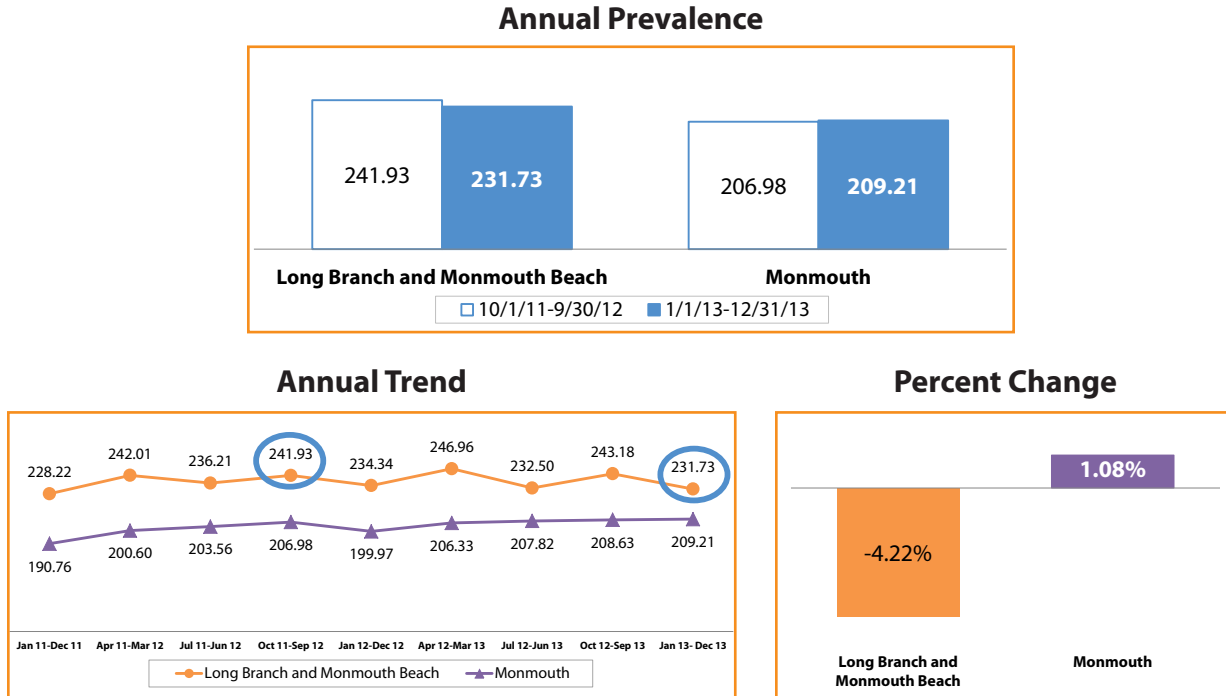
Annual Prevalence

Long Branch and Monmouth Beach: 241.93 (10/1/11-9/30/12), 231.73 (1/1/13-12/31/13)
Monmouth: 206.98 (10/1/11-9/30/12), 209.21 (1/1/13-12/31/13)

☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13

Annual Trend

Long Branch and Monmouth Beach: 228.22, 242.01, 236.21, 241.93, 234.34, 246.96, 232.50, 243.18, 231.73
Monmouth: 190.76, 200.60, 203.56, 206.98, 199.97, 206.33, 207.82, 208.63, 209.21

Jan 11-Dec 11 | Apr 11-Mar 12 | Jul 11-Jun 12 | Oct 11-Sep 12 | Jan 12-Dec 12 | Apr 12-Mar 13 | Jul 12-Jun 13 | Oct 12-Sep 13 | Jan 13- Dec 13

—●— Long Branch and Monmouth Beach —▲— Monmouth

Percent Change

Long Branch and Monmouth Beach: -4.22%
Monmouth: 1.08%

The prevalence rate of depression or proxy disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 241.93 per 1,000 beneficiaries. After the storm, this rate decreased to 231.73 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 4.22% relative decrease.

FIGURE 19. QUARTERLY NEW INCIDENCE OF DEPRESSION OR PROXY DISORDERS* PER 1,000 MEDICARE FFS BENEFICIARIES

Long Branch and Monmouth Beach: 30.08, 29.26, 25.12, 28.39, 26.40, 26.11, 23.99, 24.89
Monmouth: 26.88, 25.14, 24.47, 24.56, 25.05, 25.04, 23.91, 24.54

Q1 2012 | Q2 2012 | Q3 2012 | Q4 2012 | Q1 2013 | Q2 2013 | Q3 2013 | Q4 2013

—●— Long Branch and Monmouth Beach —▲— Monmouth

This chart reflects trending of quarterly new incidence of depression or proxy disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.

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FIGURE 20. PREVALENCE OF DEPRESSION OR PROXY DISORDERS*
PER 1,000 MEDICARE FFS BENEFICIARIES IN 10 COUNTIES

October 1, 2011 – September 30, 2012   **January 1, 2013 – December 31, 2013**

205.05 - 476.96	217.50 - 722.77
182.96 - 205.04	195.63 - 217.49
168.39 - 182.95	182.75 - 195.62
150.86 - 168.38	165.83 - 182.74
40.20 - 150.85	85.18 - 165.82

The color-coded map of New Jersey depicts prevalence of depression or proxy disorders from high (red) to low (blue) in the 10 FEMA-declared disaster counties before and after Superstorm Sandy.

* Mapped using ZIP codes of the 10 counties.

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FIGURE 21. MONMOUTH COUNTY PREVALENCE OF DEPRESSION OR PROXY DISORDERS* PER 1,000 MEDICARE FFS BENEFICIARIES

October 1, 2011 – September 30, 2012

January 1, 2013 – December 31, 2013

212.94 - 292.77	
194.88 - 212.93	
175.96 - 194.87	
161.94 - 175.95	
73.24 - 161.93	

228.03 - 317.00	
208.50 - 228.02	
188.87 - 208.49	
171.01 - 188.86	
121.51 - 171.00	

The color-coded map of Monmouth County depicts regional variation of prevalence of depression or proxy disorders from high (red) to low (blue) before and after Superstorm Sandy.

* Mapped using ZIP codes; may not display all the city names located within the ZIP code.

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Depression

FIGURE 22. DEPRESSION PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Prevalence

Long Branch and Monmouth Beach: 151.05 (10/1/11-9/30/12), 156.78 (1/1/13-12/31/13)
Monmouth: 133.28 (10/1/11-9/30/12), 133.07 (1/1/13-12/31/13)

☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13

Annual Trend

Long Branch and Monmouth Beach: 148.60, 153.97, 147.93, 151.05, 146.09, 156.17, 149.37, 161.47, 156.78
Monmouth: 124.92, 130.43, 131.48, 133.28, 127.27, 131.77, 132.20, 132.51, 133.07

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach: 3.79%
Monmouth: -0.16%

The prevalence rate of depression among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 151.05 per 1,000 beneficiaries. After the storm, this rate increased to 156.78 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 3.79% relative increase.

FIGURE 23. QUARTERLY NEW INCIDENCE OF DEPRESSION* PER 1,000 MEDICARE FFS BENEFICIARIES
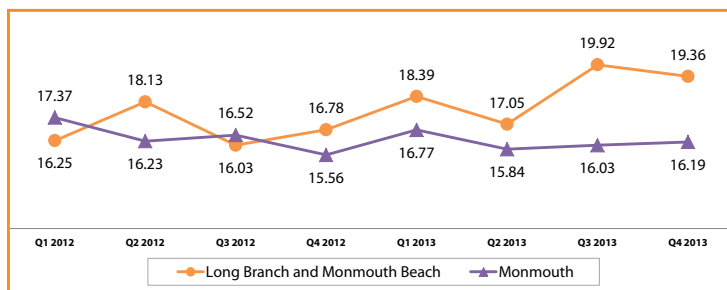
Long Branch and Monmouth Beach: 16.25, 18.13, 16.52, 16.78, 18.39, 17.05, 19.92, 19.36
Monmouth: 17.37, 16.23, 16.03, 15.56, 16.77, 15.84, 16.03, 16.19

Q1 2012, Q2 2012, Q3 2012, Q4 2012, Q1 2013, Q2 2013, Q3 2013, Q4 2013

This chart reflects trending of quarterly new incidence of depression among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.
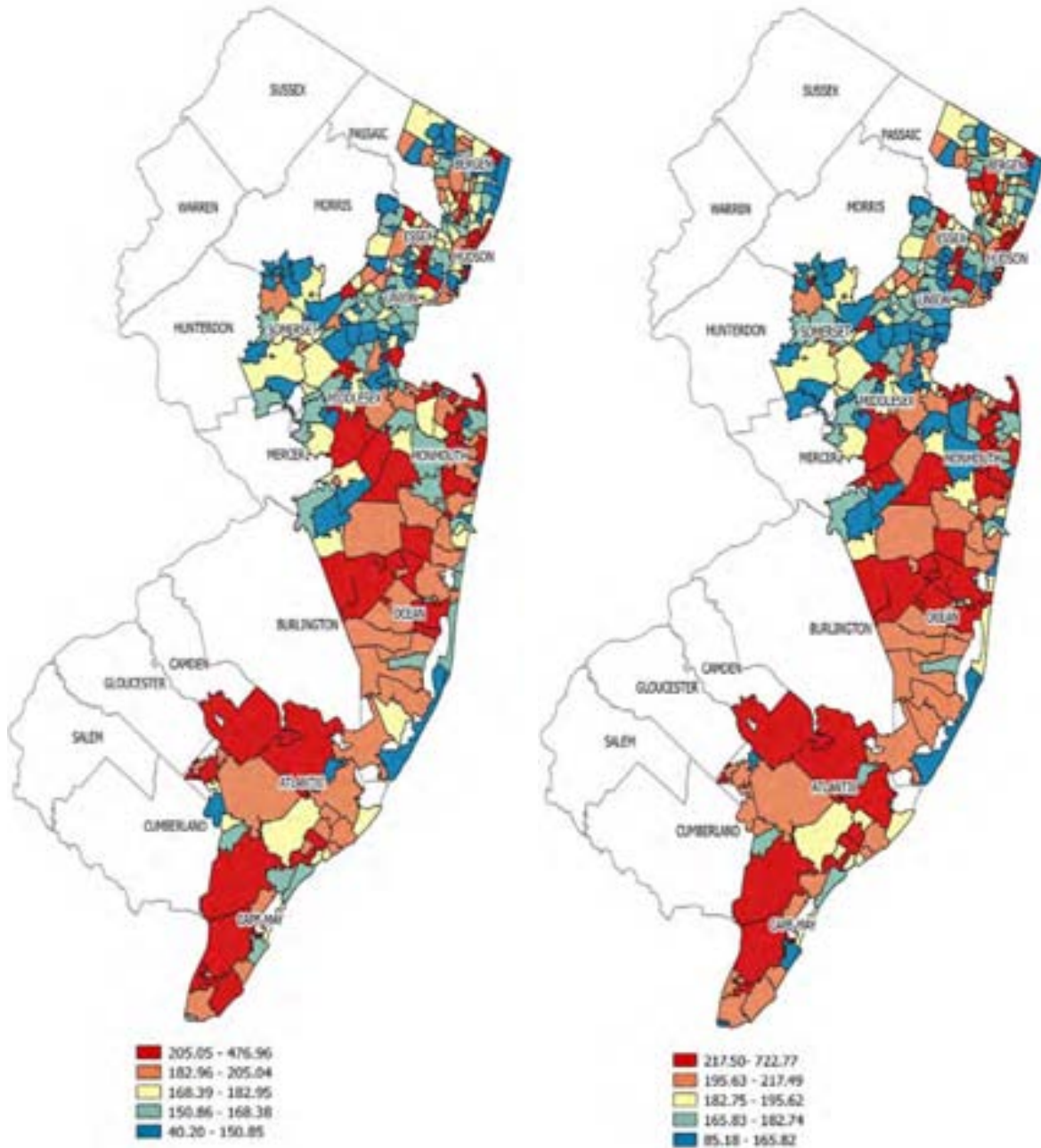
* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.

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Anxiety Disorders

FIGURE 24. ANXIETY DISORDERS PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Prevalence

	10/1/11-9/30/12	1/1/13-12/31/13
Long Branch and Monmouth Beach	134.05	126.71
Monmouth	114.40	119.46

Annual Trend

Long Branch and Monmouth Beach: 127.49, 136.89, 130.02, 134.05, 131.30, 138.80, 128.16, 136.25, 126.71

Monmouth: 100.50, 107.67, 111.06, 114.40, 112.28, 115.66, 118.44, 119.48, 119.46

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach	Monmouth
-5.48%	4.42%

The prevalence rate of anxiety disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 134.05 per 1,000 beneficiaries. After the storm, this rate decreased to 126.71 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 5.48% relative decrease.

FIGURE 25. QUARTERLY NEW INCIDENCE OF ANXIETY DISORDERS* PER 1,000 MEDICARE FFS BENEFICIARIES

Long Branch and Monmouth Beach: 21.08, 19.87, 17.64, 21.29, 19.04, 16.19, 17.99, 18.30

Monmouth: 18.41, 17.59, 17.33, 17.81, 16.92, 18.41, 17.24, 16.77

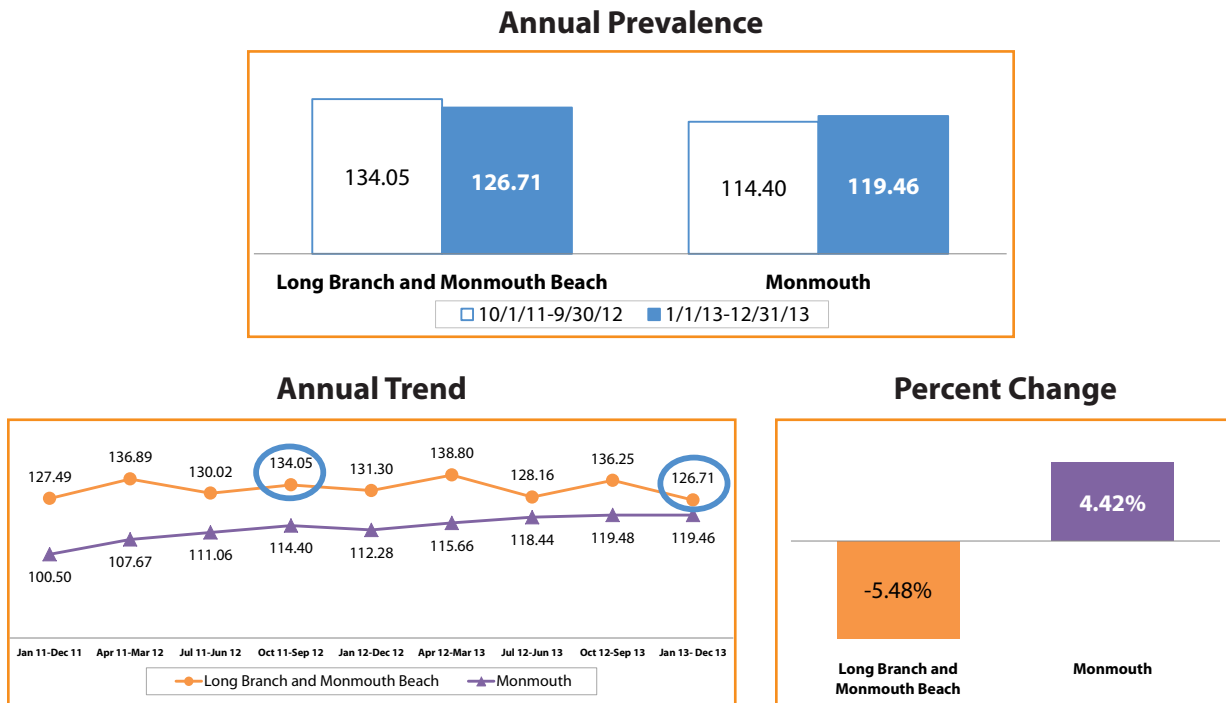Q1 2012, Q2 2012, Q3 2012, Q4 2012, Q1 2013, Q2 2013, Q3 2013, Q4 2013

This chart reflects trending of quarterly new incidence of anxiety disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

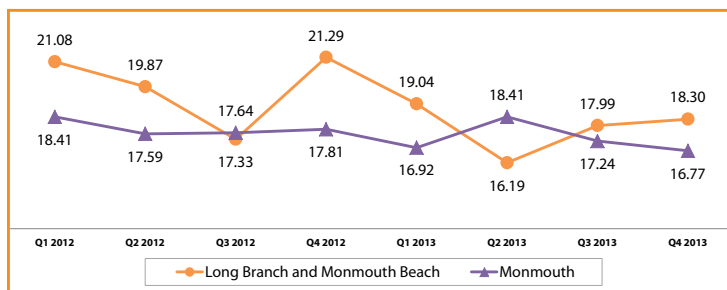* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.

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Adjustment Disorders

Figure 26. Adjustment Disorders per 1,000 Medicare FFS Beneficiaries

Annual Prevalence

Long Branch and Monmouth Beach		Monmouth	
48.39	**46.60**	39.16	**37.29**

☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13

Annual Trend

Long Branch and Monmouth Beach: 43.08, 47.53, 47.86, 48.39, 47.61, 50.83, 49.14, 48.29, 46.60

Monmouth: 33.61, 36.40, 37.77, 39.16, 36.94, 38.15, 38.24, 38.00, 37.29

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13-Dec 13

—●— Long Branch and Monmouth Beach —▲— Monmouth

Percent Change

Long Branch and Monmouth Beach	Monmouth
-3.70%	-4.78%

The prevalence rate of adjustment disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 48.39 per 1,000 beneficiaries. After the storm, this rate decreased to 46.60 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 3.70% relative decrease.

Figure 27. Quarterly New Incidence of Adjustment Disorders* per 1,000 Medicare FFS Beneficiaries

Long Branch and Monmouth Beach: 9.00, 8.08, 9.53, 8.82, 9.95, 9.06, 5.82, 8.51

Monmouth: 7.02, 6.51, 6.87, 6.18, 6.89, 6.44, 5.36, 6.04

Q1 2012, Q2 2012, Q3 2012, Q4 2012, Q1 2013, Q2 2013, Q3 2013, Q4 2013

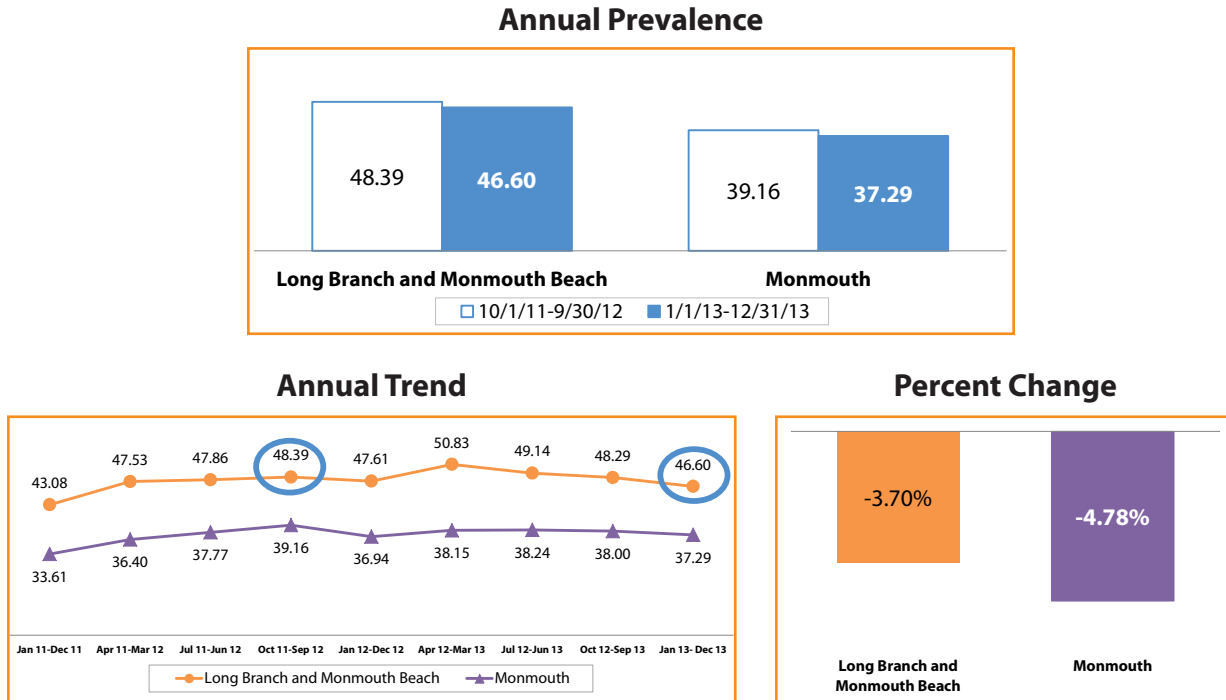—●— Long Branch and Monmouth Beach —▲— Monmouth

This chart reflects trending of quarterly new incidence of adjustment disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

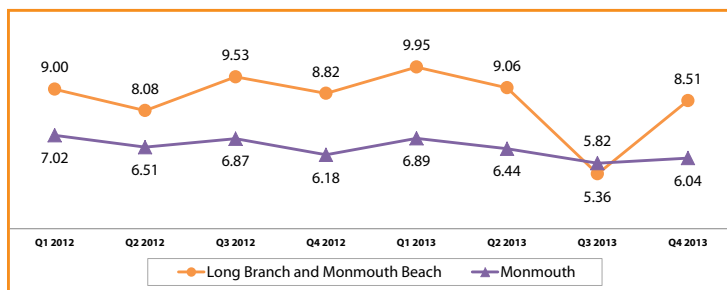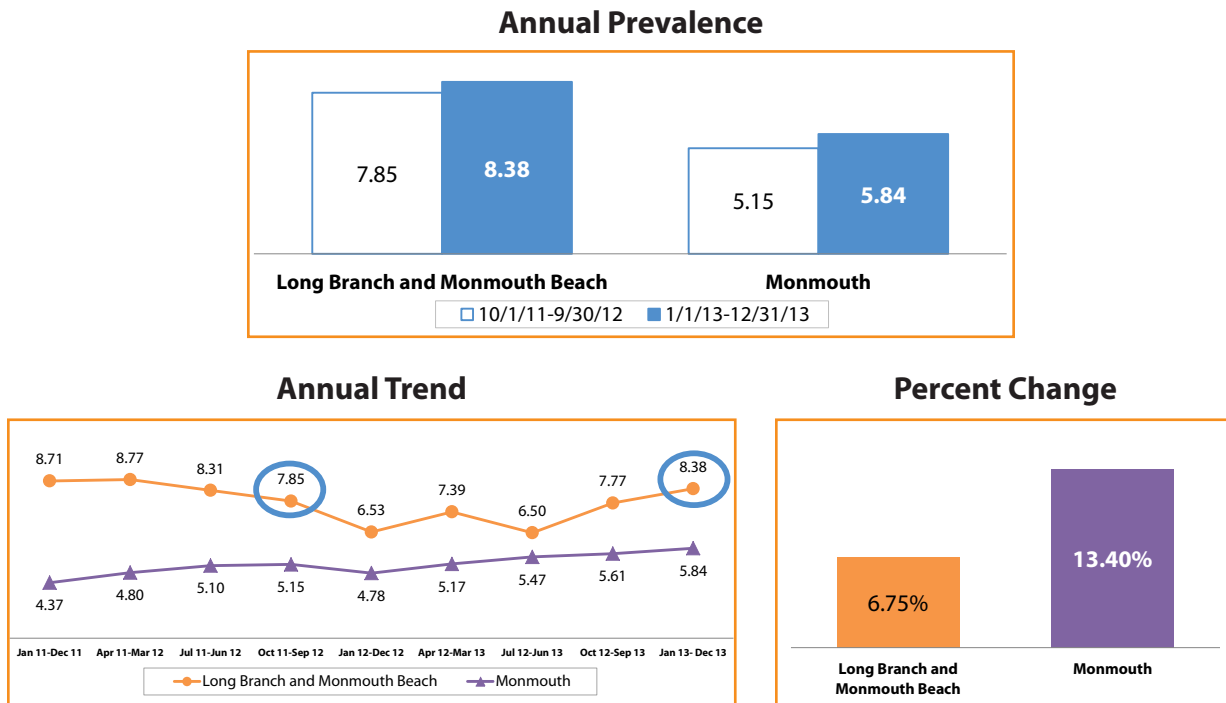* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.

Post-Traumatic Stress Disorder (PTSD)

FIGURE 28. PTSD PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Prevalence

	10/1/11-9/30/12	1/1/13-12/31/13
Long Branch and Monmouth Beach	7.85	8.38
Monmouth	5.15	5.84

Annual Trend

Percent Change

The prevalence rate of PTSD among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 7.85 per 1,000 beneficiaries. After the storm, this rate increased to 8.38 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 6.75% relative increase.

FIGURE 29. QUARTERLY NEW INCIDENCE OF PTSD*
PER 1,000 MEDICARE FFS BENEFICIARIES

This chart reflects trending of quarterly new incidence of PTSD among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.
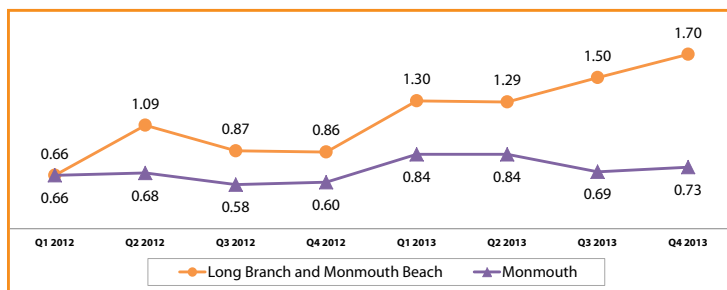
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Alcohol or Substance Abuse

FIGURE 30. ALCOHOL OR SUBSTANCE ABUSE PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Prevalence

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	74.98	34.42
1/1/13-12/31/13	76.46	39.88

Annual Trend

Long Branch and Monmouth Beach: 73.10, 76.00, 71.24, 74.98, 71.09, 75.37, 75.77, 79.55, 76.46

Monmouth: 31.33, 33.24, 33.65, 34.42, 32.72, 34.42, 37.03, 38.90, 39.88

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach: 1.97%

Monmouth: 15.86%

The prevalence rate of alcohol or substance abuse among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 74.98 per 1,000 beneficiaries. After the storm, this rate increased to 76.46 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 1.97% relative increase.

FIGURE 31. QUARTERLY NEW INCIDENCE OF ALCOHOL OR SUBSTANCE ABUSE* PER 1,000 MEDICARE FFS BENEFICIARIES

Long Branch and Monmouth Beach: 9.66, 7.21, 10.40, 12.05, 10.60, 10.58, 10.28, 10.42

Monmouth: 5.29, 5.01, 5.63, 5.42, 5.82, 7.25, 6.85, 6.17

Q1 2012, Q2 2012, Q3 2012, Q4 2012, Q1 2013, Q2 2013, Q3 2013, Q4 2013

This chart reflects trending of quarterly new incidence of alcohol or substance abuse among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.
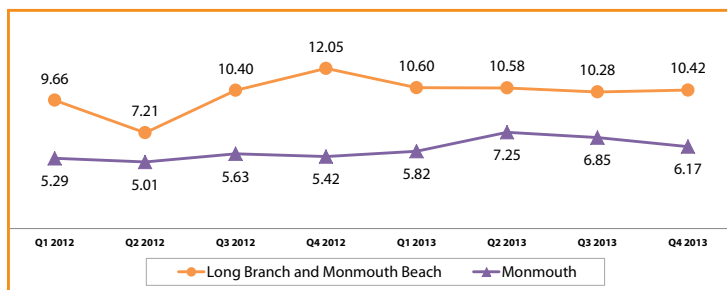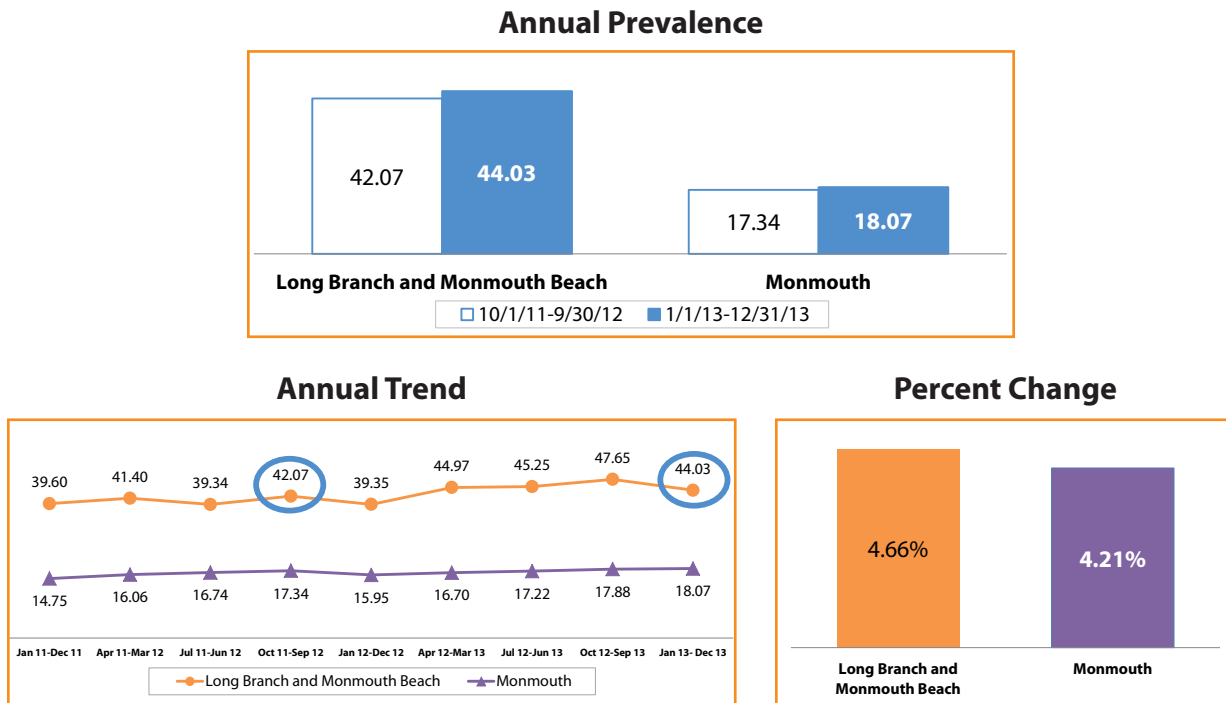
Substance Abuse Alone

FIGURE 32. SUBSTANCE ABUSE ALONE PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Prevalence

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	42.07	17.34
1/1/13-12/31/13	**44.03**	**18.07**

Annual Trend

Long Branch and Monmouth Beach: 39.60, 41.40, 39.34, 42.07, 39.35, 44.97, 45.25, 47.65, 44.03

Monmouth: 14.75, 16.06, 16.74, 17.34, 15.95, 16.70, 17.22, 17.88, 18.07

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach	Monmouth
4.66%	**4.21%**

The prevalence rate of substance abuse alone among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 42.07 per 1,000 beneficiaries. After the storm, this rate increased to 44.03 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 4.66% relative increase, a larger increase than in Monmouth County.

FIGURE 33. QUARTERLY NEW INCIDENCE OF SUBSTANCE ABUSE ALONE* PER 1,000 MEDICARE FFS BENEFICIARIES

Long Branch and Monmouth Beach: 5.49, 4.15, 6.71, 6.45, 6.92, 6.26, 6.43, 5.32

Monmouth: 2.75, 2.77, 2.80, 2.42, 2.68, 3.04, 2.96, 2.63

Q1 2012, Q2 2012, Q3 2012, Q4 2012, Q1 2013, Q2 2013, Q3 2013, Q4 2013

This chart reflects trending of quarterly new incidence of substance abuse alone among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.
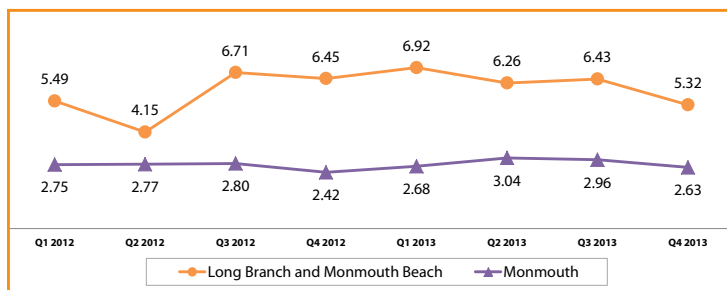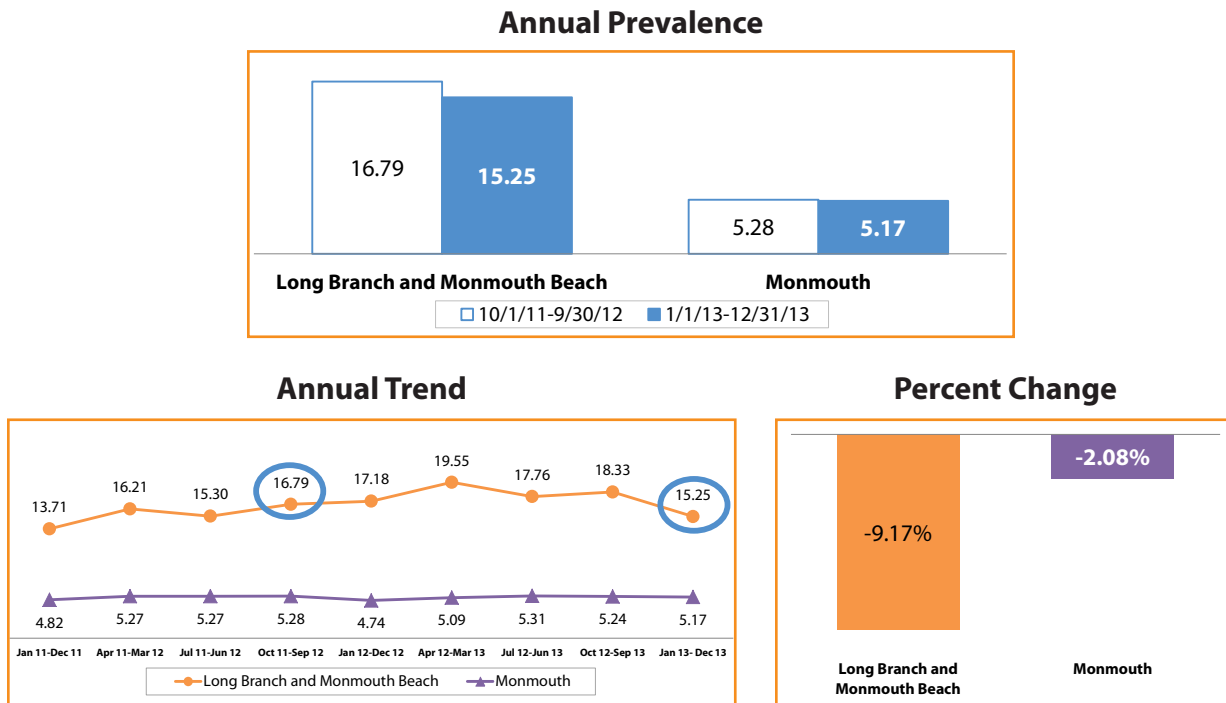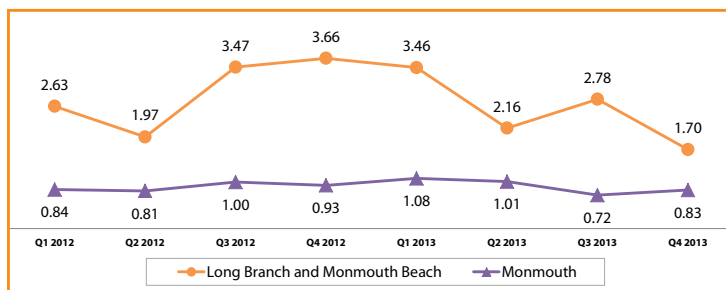
Suicide and Intentional Self-Inflicted Injury

FIGURE 34. SUICIDE AND INTENTIONAL SELF-INFLICTED INJURY PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Prevalence

Long Branch and Monmouth Beach: 16.79 (10/1/11-9/30/12), 15.25 (1/1/13-12/31/13)
Monmouth: 5.28 (10/1/11-9/30/12), 5.17 (1/1/13-12/31/13)

☐ 10/1/11-9/30/12   ■ 1/1/13-12/31/13

Annual Trend

Long Branch and Monmouth Beach:
Jan 11-Dec 11: 13.71
Apr 11-Mar 12: 16.21
Jul 11-Jun 12: 15.30
Oct 11-Sep 12: 16.79
Jan 12-Dec 12: 17.18
Apr 12-Mar 13: 19.55
Jul 12-Jun 13: 17.76
Oct 12-Sep 13: 18.33
Jan 13- Dec 13: 15.25

Monmouth:
4.82, 5.27, 5.27, 5.28, 4.74, 5.09, 5.31, 5.24, 5.17

—●— Long Branch and Monmouth Beach   —▲— Monmouth

Percent Change

Long Branch and Monmouth Beach: -9.17%
Monmouth: -2.08%

The prevalence rate of suicide and intentional self-inflicted injuries among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 16.79 per 1,000 beneficiaries. After the storm, this rate decreased to 15.25 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 9.17% relative decrease, a larger decrease than in Monmouth County.

FIGURE 35. QUARTERLY NEW INCIDENCE OF SUICIDE AND INTENTIONAL SELF-INFLICTED INJURY* PER 1,000 MEDICARE FFS BENEFICIARIES

Long Branch and Monmouth Beach:
Q1 2012: 2.63
Q2 2012: 1.97
Q3 2012: 3.47
Q4 2012: 3.66
Q1 2013: 3.46
Q2 2013: 2.16
Q3 2013: 2.78
Q4 2013: 1.70

Monmouth:
0.84, 0.81, 1.00, 0.93, 1.08, 1.01, 0.72, 0.83

—●— Long Branch and Monmouth Beach   —▲— Monmouth

This chart reflects trending of quarterly new incidence of suicide and intentional self-inflicted injuries among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

* Quarterly new incidences of conditions that were non-existent (not reported) in the last 12 months.

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RISK FACTORS FOR DEPRESSION OR PROXY DISORDERS

To identify beneficiaries at risk of developing depression or proxy disorders, HQSI conducted a literature review on the potential risk factors for depression or proxy disorders. Previous studies suggested that psychosocial factors, biological factors, deteriorating physical functioning, and medication side effects could increase the risk of depression or proxy disorders.

Based on the literature review and data analysis using factors available through Medicare claims data, the top five risk factors for depression or proxy disorders were identified as: Alzheimer's disease and related disorders or senile dementia, sleep disturbance, alcohol or substance abuse or tobacco use, hip/pelvic fractures, and amputations (see Appendix B).
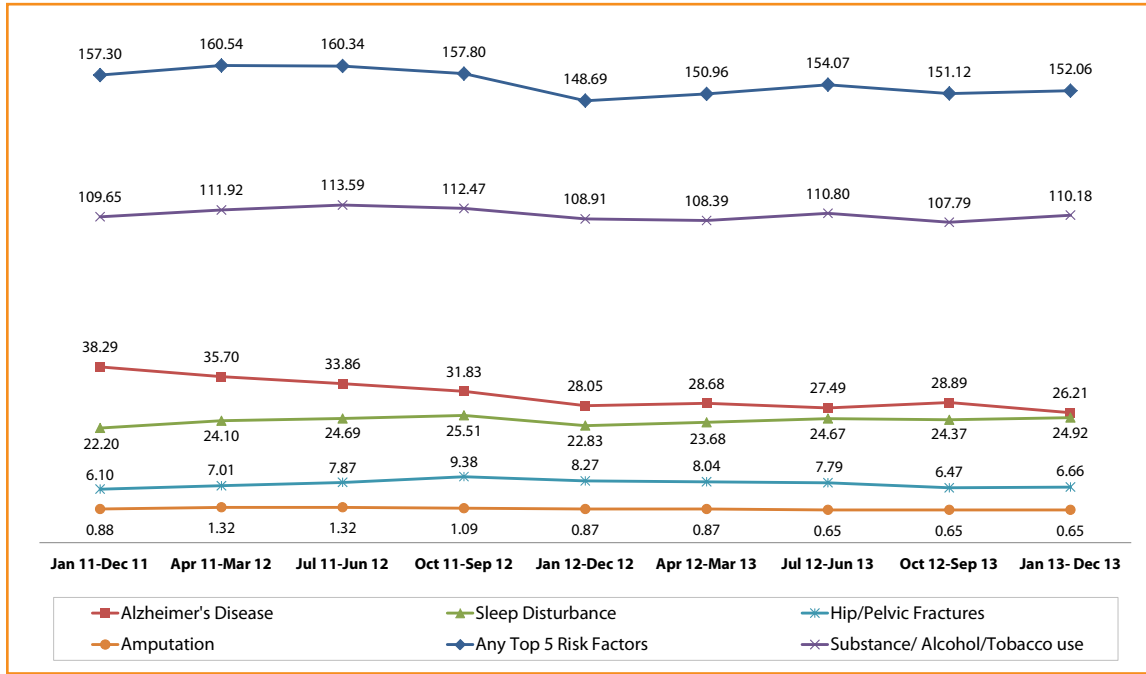
For Medicare FFS beneficiaries residing in the community who were diagnosed with these risk factor conditions prior to being diagnosed with depression or proxy disorders, these conditions may have contributed to the risk of developing depression or proxy disorders. The following figures show the prevalence rates for these five conditions in the 12 months before and after Superstorm Sandy.

Summary

Figure 36. Percent Change of Prevalence of the Top Five Risk Factors of Depression or Proxy Disorders per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Any of the Top Five Risk Factors for Depression or Proxy Disorders	157.80	152.06	-3.64	133.70	135.84	1.60
• Substance or Alcohol Abuse or Tobacco Use	112.47	110.18	-2.04	79.29	85.31	7.59
• Alzheimer's Disease and related disorders or Senile Dementia	31.83	26.21	-17.66	35.85	31.78	-11.35
• Sleep Disturbance	25.51	24.92	-2.31	24.35	24.72	1.52
• Hip/Pelvic Fractures	9.38	6.66	-29.00	7.47	7.51	0.54
• Amputations	1.09	0.65	-40.37	0.75	0.80	6.67

The Long Branch and Monmouth Beach community experienced a larger decrease in Alzheimer's disease and related disorders or senile dementia than Monmouth County.

FIGURE 37. ANNUAL PREVALENCE TREND FOR RISK FACTORS OF DEPRESSION OR PROXY DISORDERS PER 1,000 MEDICARE FFS BENEFICIARIES

The chart above reflects annual trending in the prevalence of any of the top five risk factors for depression or proxy disorders among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

Any of the Top Five Risk Factors for Depression or Proxy Disorders

FIGURE 38. ANNUAL PREVALENCE OF ANY OF THE TOP FIVE RISK FACTORS FOR DEPRESSION OR PROXY DISORDERS PER 1,000 MEDICARE FFS BENEFICIARIES
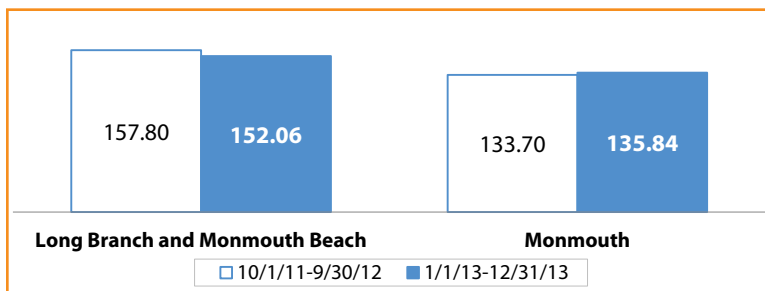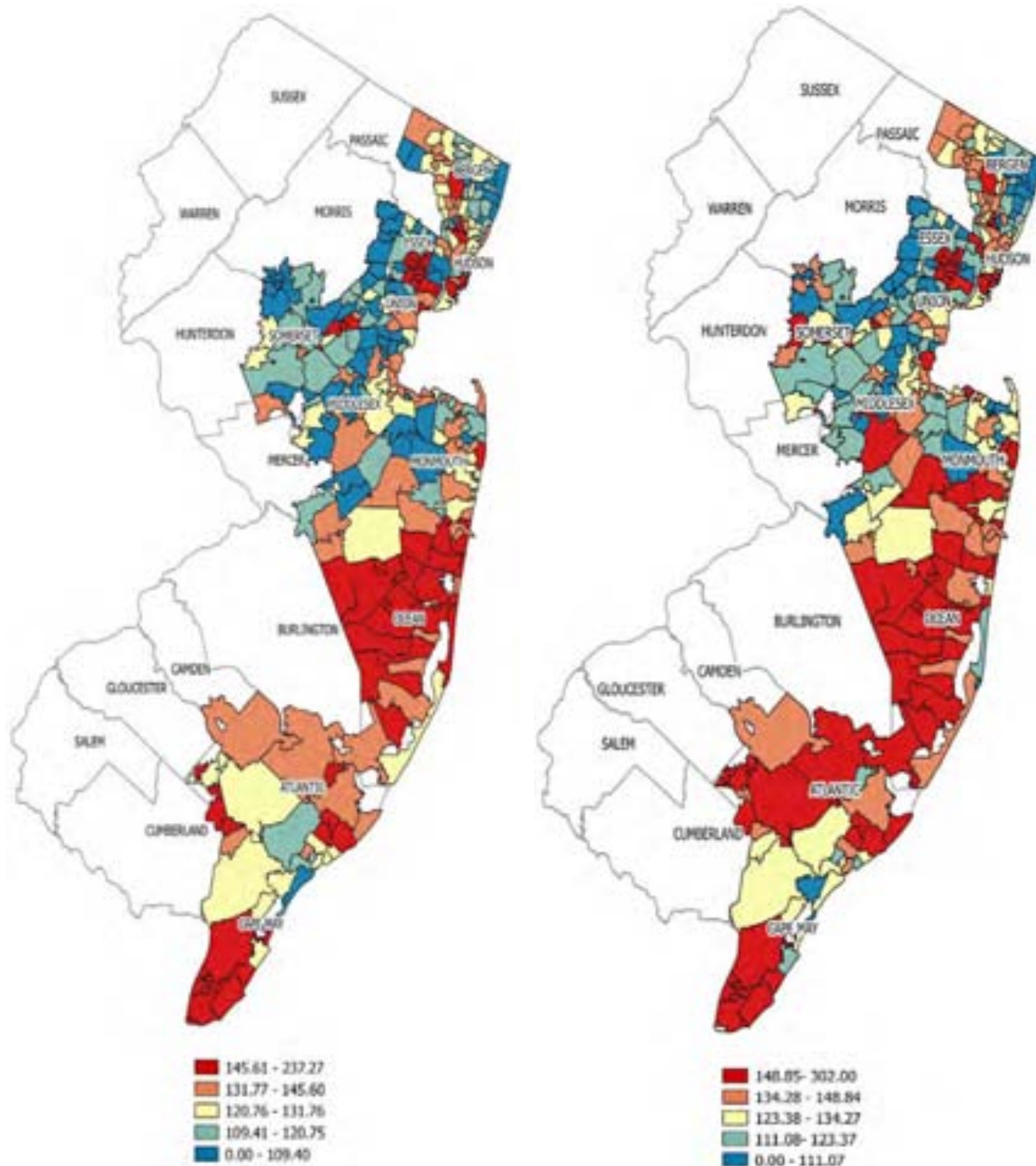

The prevalence rate of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community with any of the top five risk factors for depression or proxy disorders in the 12 months prior to Superstorm Sandy was 157.80 per 1,000 beneficiaries. After the storm, the rate decreased to 152.06 per 1,000 beneficiaries, which was higher than the county rate.

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FIGURE 39. PREVALENCE OF ANY OF THE TOP FIVE RISK FACTORS FOR DEPRESSION OR PROXY DISORDERS* PER 1,000 MEDICARE FFS BENEFICIARIES IN 10 COUNTIES

October 1, 2011 – September 30, 2012   **January 1, 2013 – December 31, 2013**

Legend (left map):
- 145.61 - 237.27
- 131.77 - 145.60
- 120.76 - 131.76
- 109.41 - 120.75
- 0.00 - 109.40

Legend (right map):
- 148.85 - 302.00
- 134.28 - 148.84
- 123.38 - 134.27
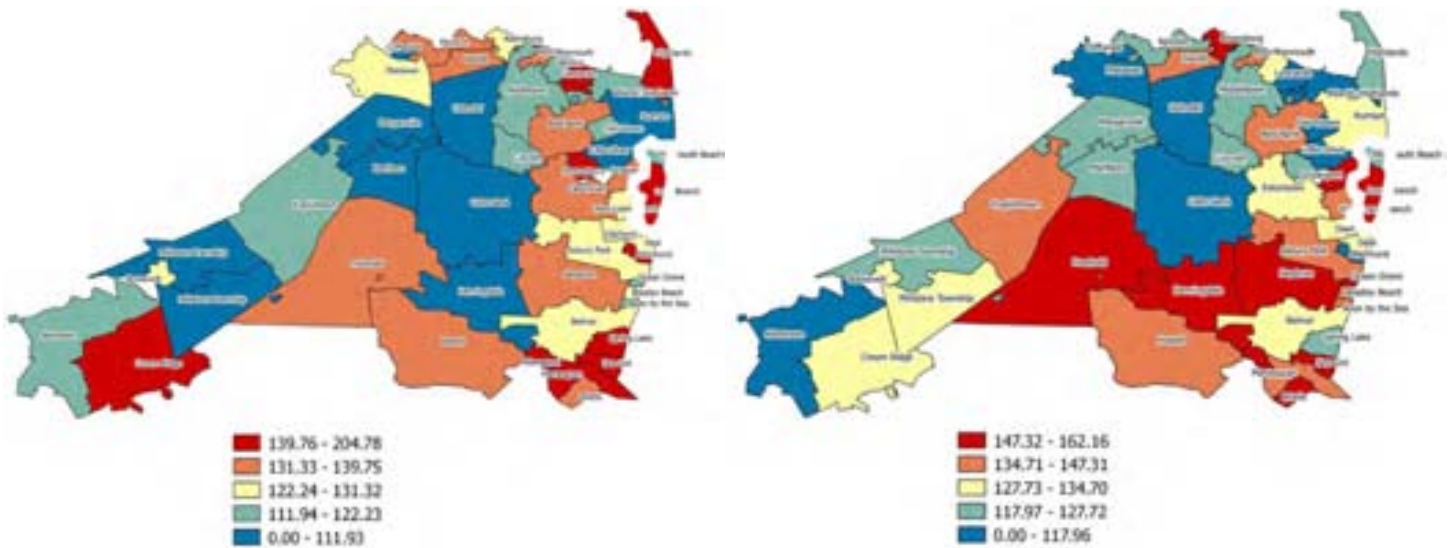- 111.08 - 123.37
- 0.00 - 111.07

The color-coded map of New Jersey depicts prevalence of any of the top five risk factors from high (red) to low (blue) in the 10 FEMA-declared disaster counties before and after Superstorm Sandy.

* Mapped using ZIP codes of the 10 counties.

FIGURE 40. MONMOUTH COUNTY PREVALENCE OF ANY OF THE TOP FIVE RISK FACTORS FOR DEPRESSION OR PROXY DISORDERS* PER 1,000 MEDICARE FFS BENEFICIARIES

October 1, 2011 – September 30, 2012   **January 1, 2013 – December 31, 2013**

Legend (left map):
- 139.76 - 204.78
- 131.33 - 139.75
- 122.24 - 131.32
- 111.94 - 122.23
- 0.00 - 111.93

Legend (right map):
- 147.32 - 162.16
- 134.71 - 147.31
- 127.73 - 134.70
- 117.97 - 127.72
- 0.00 - 117.96

The color-coded map of Monmouth County depicts regional variation of prevalence of any of the top five risk factors from high (red) to low (blue) before and after Superstorm Sandy.

* Mapped using ZIP codes; may not display all the city names located within the ZIP code.

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## Alzheimer's Disease and Related Disorders or Senile Dementia

FIGURE 41. ANNUAL PREVALENCE OF ALZHEIMER'S DISEASE AND RELATED DISORDERS OR SENILE DEMENTIA PER 1,000 MEDICARE FFS BENEFICIARIES
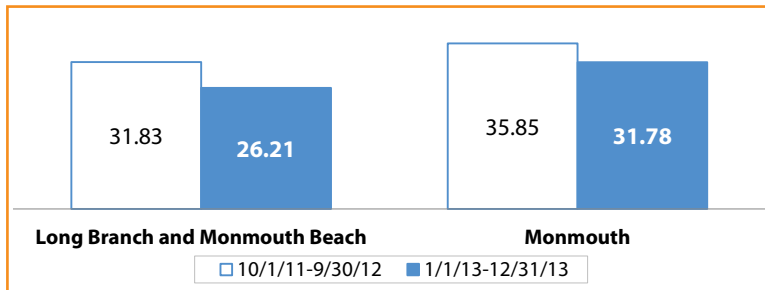
The prevalence rate of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community with Alzheimer's disease and related disorders or senile dementia in the 12 months prior to Superstorm Sandy was 31.83 per 1,000 beneficiaries. After the storm, the rate decreased to 26.21 per 1,000 beneficiaries.

Long Branch and Monmouth Beach: 31.83, 26.21
Monmouth: 35.85, 31.78
☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13
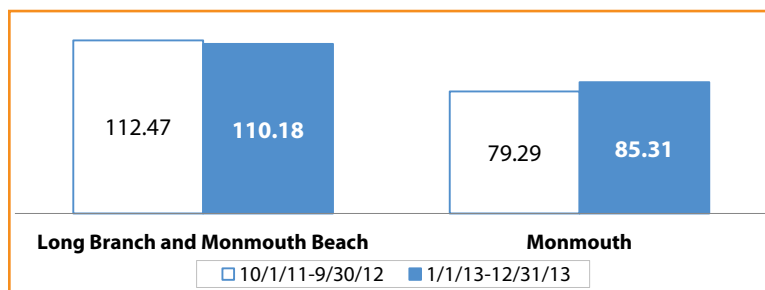
Sleep Disturbance

FIGURE 42. ANNUAL PREVALENCE OF SLEEP DISTURBANCE PER 1,000 MEDICARE FFS BENEFICIARIES
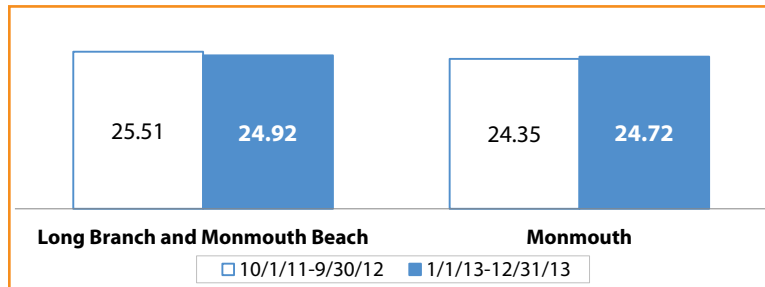
The prevalence rate of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community with sleep disturbance in the 12 months prior to Superstorm Sandy was 25.51 per 1,000 beneficiaries. After the storm, the rate decreased to 24.92 per 1,000 beneficiaries, which was higher than the county rate.

Long Branch and Monmouth Beach: 25.51, 24.92
Monmouth: 24.35, 24.72
☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13

Substance or Alcohol Abuse or Tobacco Use

FIGURE 43. ANNUAL PREVALENCE OF SUBSTANCE OR ALCOHOL ABUSE OR TOBACCO USE PER 1,000 MEDICARE FFS BENEFICIARIES

The prevalence rate of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community with substance or alcohol abuse or tobacco use in the 12 months prior to Superstorm Sandy was 112.47 per 1,000 beneficiaries. After the storm, the rate decreased to 110.18 per 1,000 beneficiaries, which was higher than the county rate.
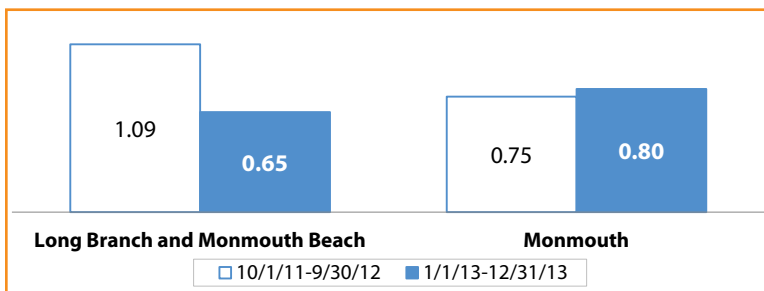
Long Branch and Monmouth Beach: 112.47, 110.18
Monmouth: 79.29, 85.31
☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13

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Hip/Pelvic Fractures

FIGURE 44. ANNUAL PREVALENCE OF HIP/PELVIC FRACTURES PER 1,000 MEDICARE FFS BENEFICIARIES
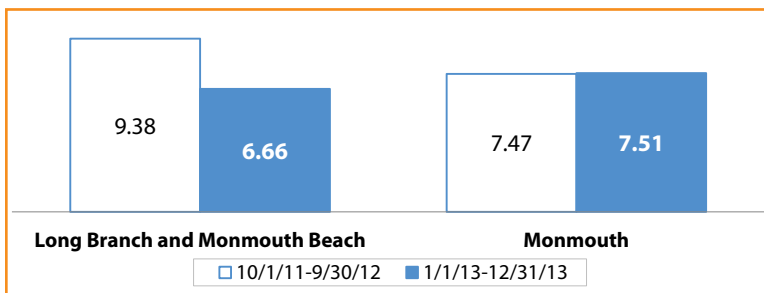
9.38

6.66

7.47

7.51

Long Branch and Monmouth Beach   Monmouth

□ 10/1/11-9/30/12   ■ 1/1/13-12/31/13

The prevalence rate of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community with hip/pelvic fractures in the 12 months prior to Superstorm Sandy was 9.38 per 1,000 beneficiaries. After the storm, the rate decreased to 6.66 per 1,000 beneficiaries.

Amputations

FIGURE 45. ANNUAL PREVALENCE OF AMPUTATIONS PER 1,000 MEDICARE FFS BENEFICIARIES

1.09

0.65

0.75

0.80

Long Branch and Monmouth Beach   Monmouth

□ 10/1/11-9/30/12   ■ 1/1/13-12/31/13

The prevalence rate of Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community with amputations in the 12 months prior to Superstorm Sandy was 1.09 per 1,000 beneficiaries. After the storm, the rate decreased to 0.65 per 1,000 beneficiaries.

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UTILIZATION OF OUTPATIENT BEHAVIORAL HEALTH SERVICES

Assessments*

### Summary

Figure 46. Percent Change of Behavioral Health Service Utilization – Assessments per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Annual Depression Screening*	2.61	6.66	155.17	4.72	13.97	195.97
Psychiatric Diagnostic Procedures	86.10	82.90	-3.72	61.59	54.19	-12.01
Neuropsychological Tests	11.56	6.66	-42.39	10.46	10.99	5.07

* Depression screening comparison time frames are different (January 1, 2012 – December 31, 2012 vs. October 1, 2012 – September 30, 2013)

Annual depression screening in the Long Branch and Monmouth Beach community increased from 2.61 per 1,000 Medicare FFS beneficiaries before the storm to 6.66 per 1,000 beneficiaries after the storm.

FIGURE 47. ANNUAL UTILIZATION TREND OF BEHAVIORAL HEALTH ASSESSMENT SERVICES PER 1,000 MEDICARE FFS BENEFICIARIES
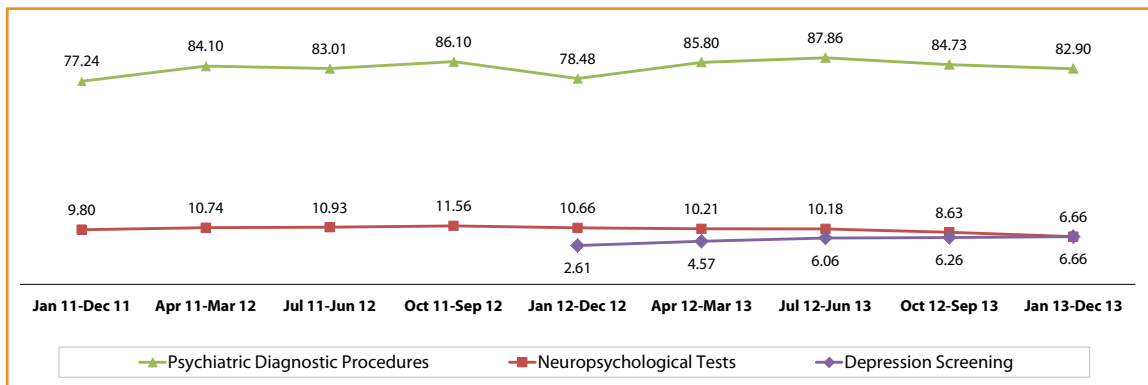
The chart above reflects annual trending in the utilization of behavioral health assessment services among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.
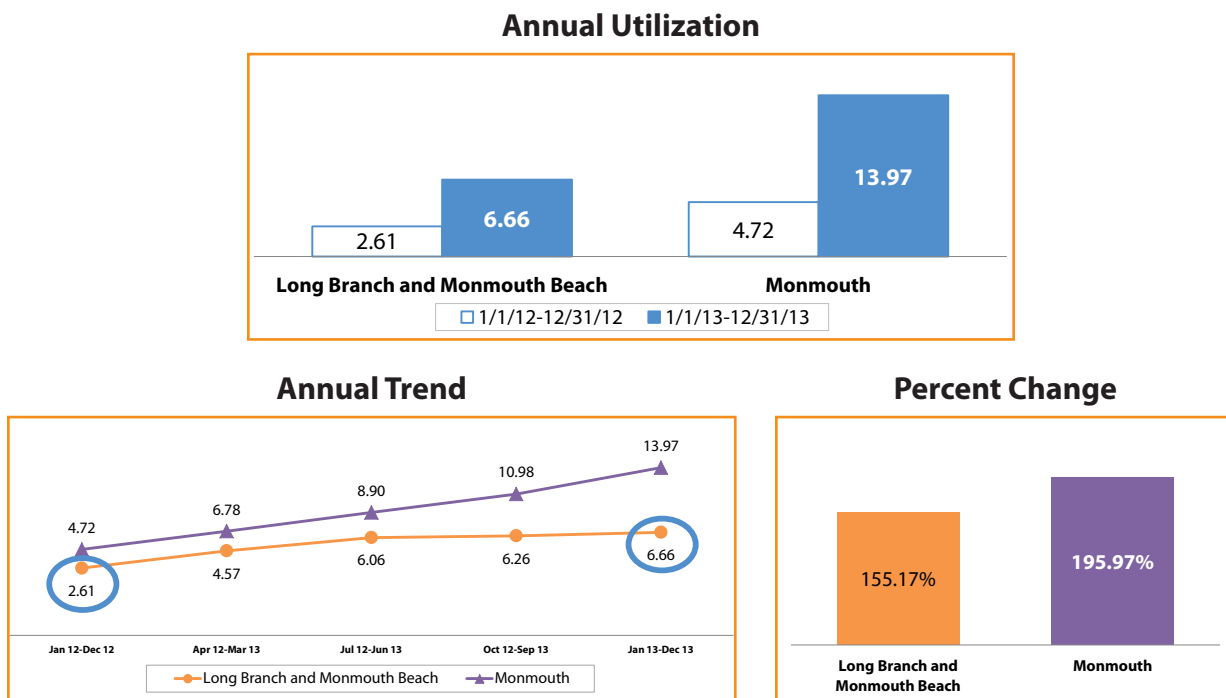
Depression Screening

One of the long-term goals of this project is to increase the awareness and use of Medicare-covered depression screening among at-risk Medicare FFS beneficiaries residing in the 10 counties during Superstorm Sandy.

*The utilization rates for Diagnostic Psychological Tests and Health and Behavior Assessment/Intervention are not provided in this profile due to low rates.

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Beginning October 2011, depression screening became a Medicare-covered service. According to the CMS Screening for Depression Booklet,[7] Medicare Part B covers an annual screening for depression of 15 minutes in length for beneficiaries in primary care settings when staff-assisted depression care supports are in place to assure accurate diagnosis, effective treatment, and follow-up. The first quarter of data in this profile for depression screening starts on January 2012 since there were only 14 claims filed for depression screening in the last quarter of 2011 in all 10 counties.
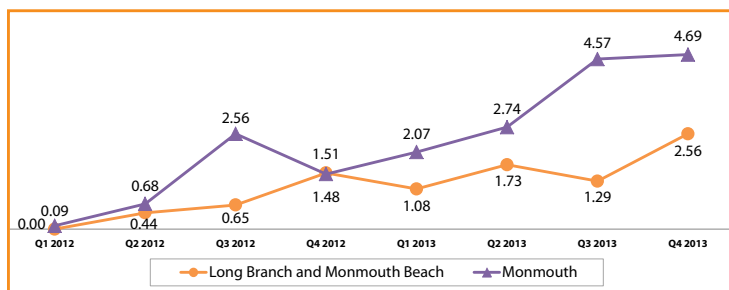
The depression screening utilization rates have been low in all 10 communities.

FIGURE 48. DEPRESSION SCREENING PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

Annual Trend

Percent Change

The rate of depression screening in the Long Branch and Monmouth Beach community for calendar year 2012 was 2.61 per 1,000 Medicare FFS beneficiaries. After the storm, this rate increased to 6.66 per 1,000 beneficiaries, reflecting a 155.17% relative increase.

### FIGURE 49. QUARTERLY DEPRESSION SCREENING PER 1,000 MEDICARE FFS BENEFICIARIES

This chart reflects trending of quarterly utilization of depression screening among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

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Figure 50. Provider Location for Depression Screening* Claims for Medicare FFS Beneficiaries Residing in Long Branch and Monmouth Beach Community				
	1/1/12-12/31/12		1/1/13-12/31/13	
Providers	Number of Claims N=12	Percent	Number of Claims N=31	Percent
Outside of New Jersey	0	0.0	5	16.1
New Jersey	12	100.0	26	83.9
• Monmouth County	8	66.7	20	64.5
– Long Branch and Monmouth Beach Community	0	0.0	0	0.0
• Other Counties	4	33.3	6	19.4

* Depression screening is a one time benefit per year. Depression screening comparison time frames are different (January 1, 2012 – December 31, 2012 vs. October 1, 2012 – September 30, 2013)

After Superstorm Sandy, 31 claims for depression screening were filed for beneficiaries residing in the Long Branch and Monmouth Beach community with 16.1% filed outside of New Jersey and 83.9% filed within New Jersey. Of those filed in New Jersey, 64.5% were filed in Monmouth County and 19.4% were filed in other counties.

FIGURE 51. DEPRESSION SCREENING* CLAIMS FOR MEDICARE FFS BENEFICIARIES
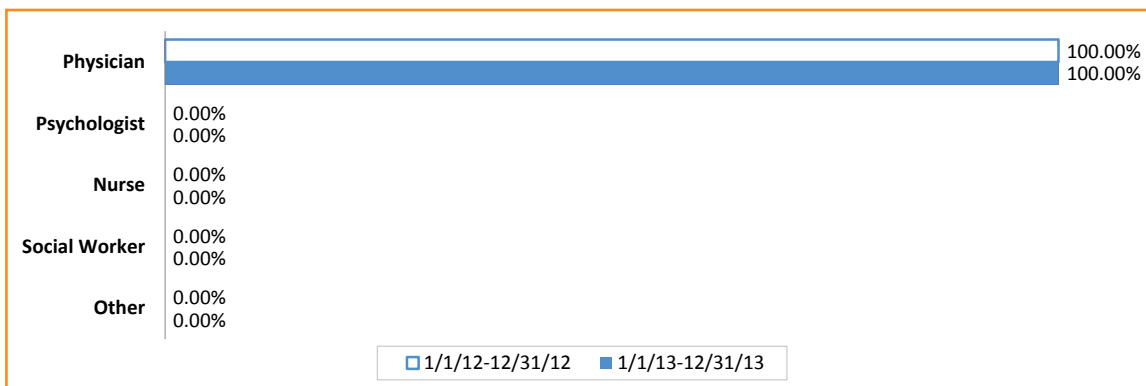
* Depression screening is a one time benefit per year

During calendar year 2012, 100% of depression screening claims in the Long Branch and Monmouth Beach community were filed by physicians. After the storm, all depression screening claims were still filed by physicians.

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Figure 52. Depression Screening*
per 1,000 Medicare FFS Beneficiaries in 10 Counties

January 1, 2012 – December 31, 2012   **January 1, 2013 – December 31, 2013**
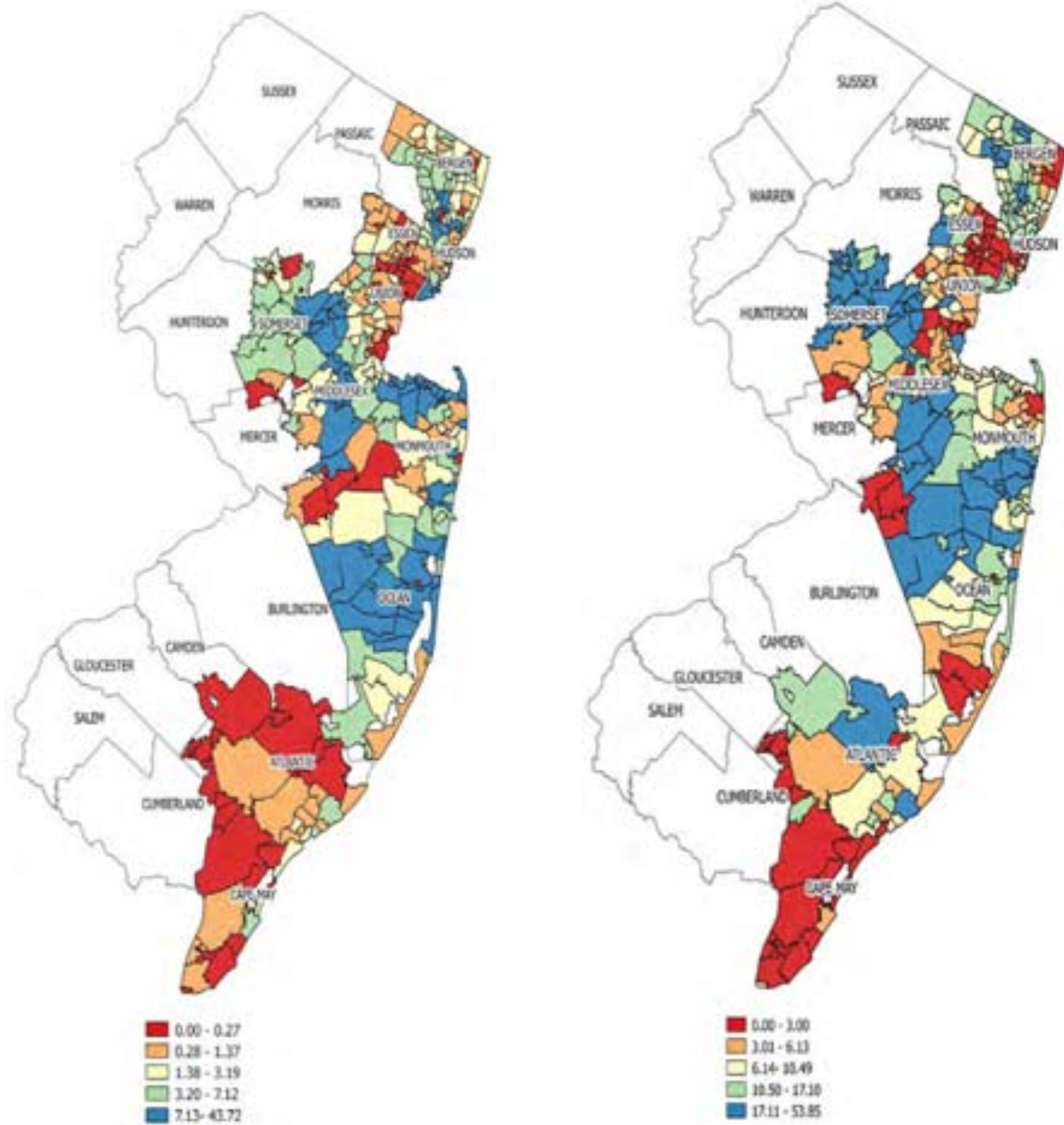
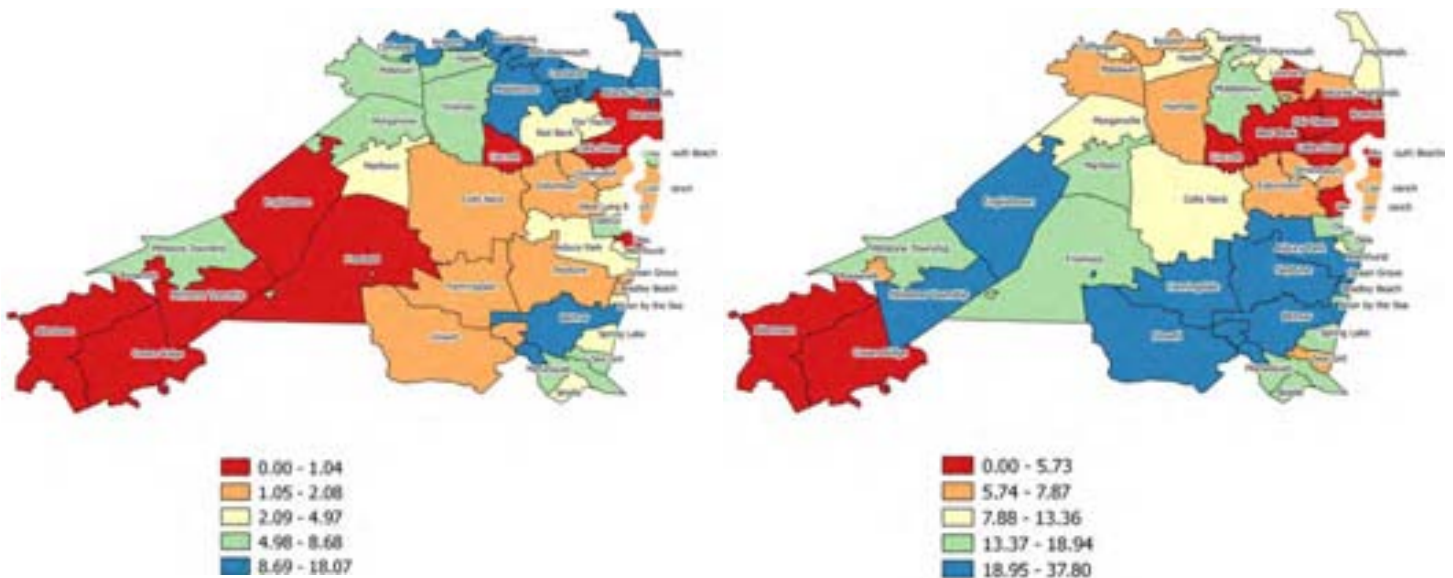The color-coded map of New Jersey depicts the use of depression screening from low (red) to high (blue) in the 10 FEMA-declared disaster counties before and after Superstorm Sandy.

* Mapped using ZIP codes of the 10 counties.

Long Branch and Monmouth Beach

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FIGURE 53. MONMOUTH COUNTY DEPRESSION SCREENING*
PER 1,000 MEDICARE FFS BENEFICIARIES

January 1, 2012 – December 31, 2012   **January 1, 2013 – December 31, 2013**

Legend (2012):
- 0.00 – 1.04
- 1.05 – 2.08
- 2.09 – 4.97
- 4.98 – 8.68
- 8.69 – 18.07

Legend (2013):
- 0.00 – 5.73
- 5.74 – 7.87
- 7.88 – 13.36
- 13.37 – 18.94
- 18.95 – 37.80

The color-coded map of Monmouth County depicts regional variation in the rates of the use of the depression screening benefit from low (red) to high (blue) before and after Superstorm Sandy.

* Mapped using ZIP codes; may not display all the city names located within the ZIP code.

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Neuropsychological Tests

According to the CMS Mental Health Services Billing Guide, neuropsychological tests are evaluations designed to determine the functional consequences of known or suspected brain injury through testing of the neurocognitive domains responsible for language, perception, memory, learning, problem solving, and adaptation.[8]

FIGURE 54. NEUROPSYCHOLOGICAL TESTS PER 1,000 MEDICARE FFS BENEFICIARIES
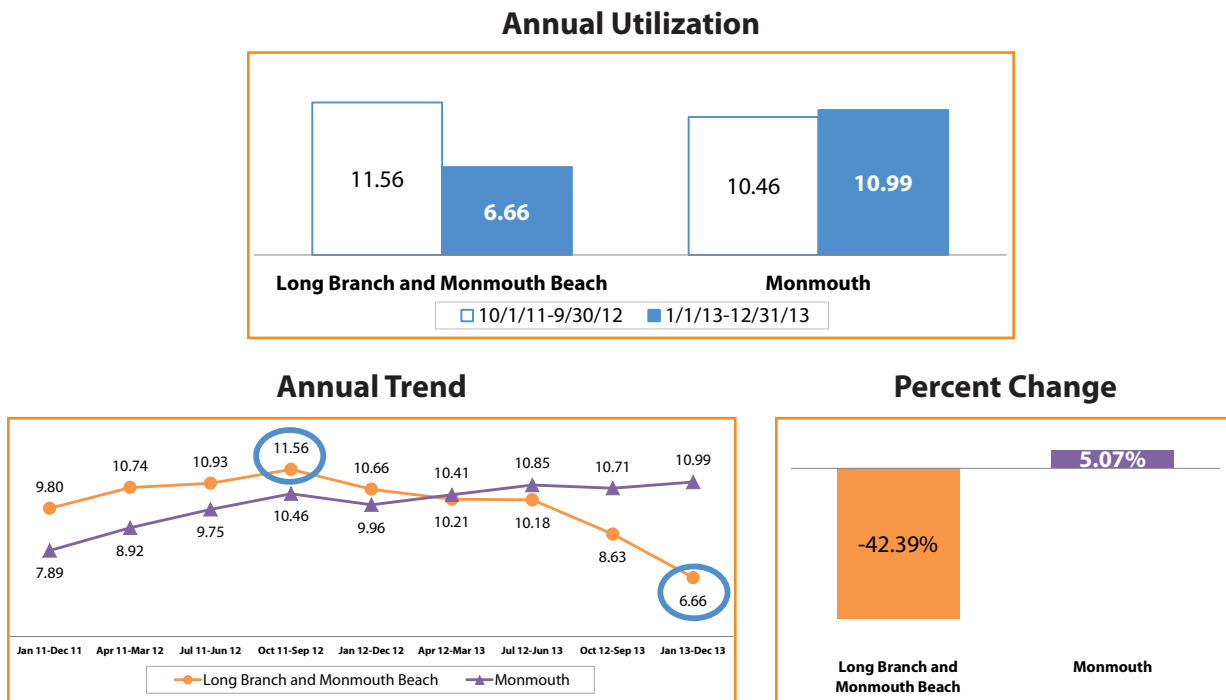
The rate of neuropsychological tests among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 11.56 per 1,000 beneficiaries. After the storm, this rate decreased to 6.66 per 1,000 beneficiaries, reflecting a 42.39% relative decrease.

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Figure 55. Provider Location for Neuropsychological Tests Claims for Medicare FFS Beneficiaries Residing in Long Branch and Monmouth Beach Community*				
	10/1/11-9/30/12		1/1/13-12/31/13	
Providers	Number of Claims N=66	Percent	Number of Claims N=38	Percent
Outside of New Jersey	5	7.6	2	5.3
New Jersey	61	92.4	36	94.7
• Monmouth County	46	69.7	16	42.1
– Long Branch and Monmouth Beach Community	0	0.0	0	0.0
• Other Counties	15	22.7	20	52.6

* Number of claims, instead of unique beneficiaries were used in this analysis because a beneficiary can have multiple encounters for these procedures at different locations.

After Superstorm Sandy, 38 claims for neuropsychological tests were filed for beneficiaries residing in the Long Branch and Monmouth Beach community, with 5.3% filed outside of New Jersey and 94.7% filed in New Jersey. Of those filed within New Jersey, 42.1% were filed in Monmouth County and 52.6% were filed in other counties.

FIGURE 56. NEUROPSYCHOLOGICAL TESTS CLAIMS FOR MEDICARE FFS BENEFICIARIES
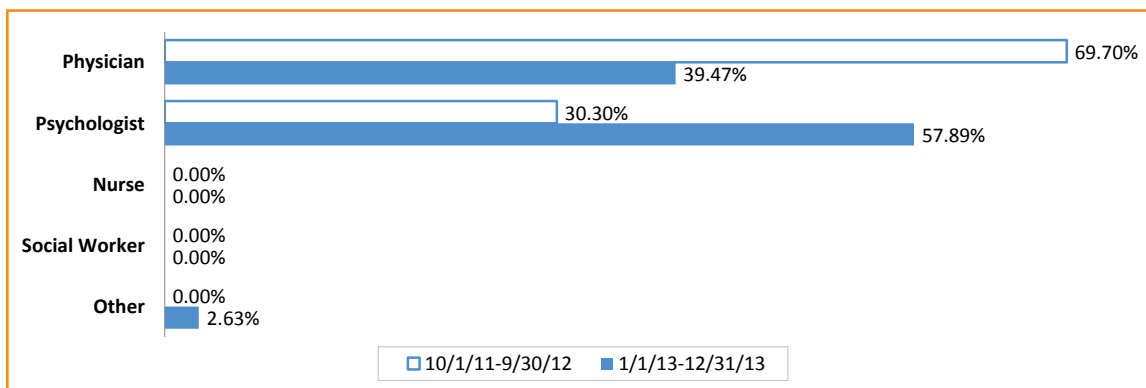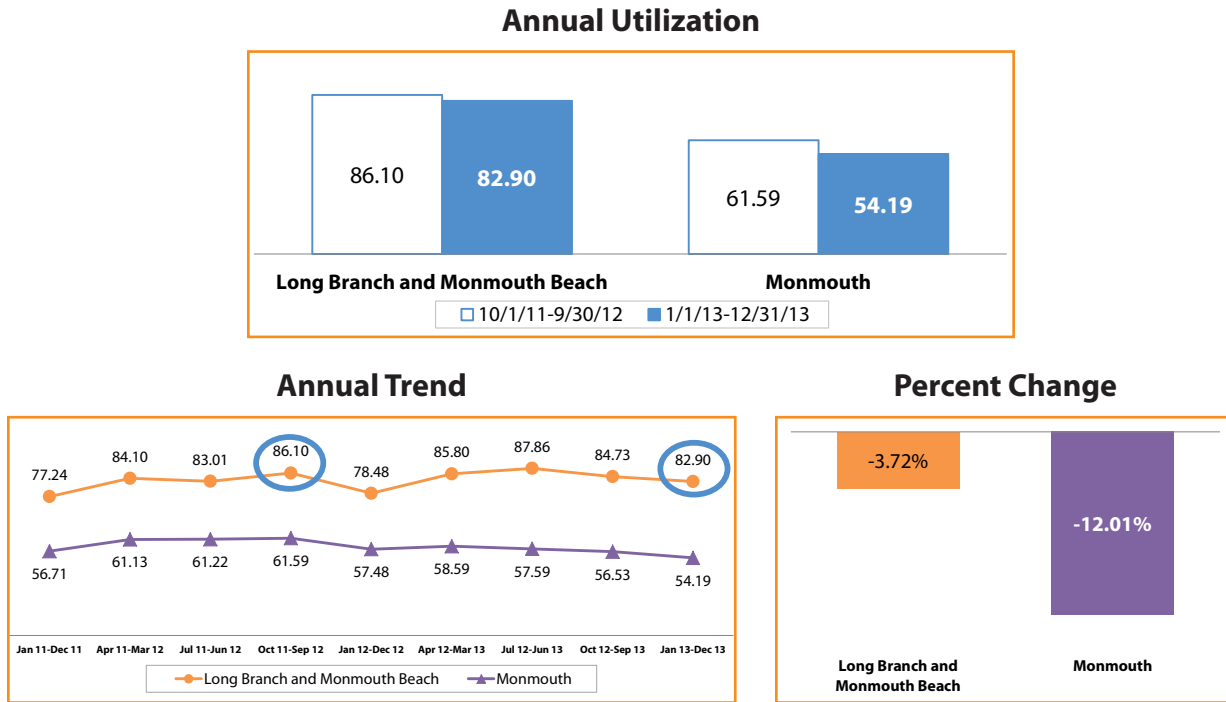

In the 12 months prior to Superstorm Sandy, 69.70% of neuropsychological tests claims were filed by physicians and 30.30% were filed by psychologists. After the storm, 57.89% of neuropsychological tests claims were filed by psychologists, 39.47% were filed by physicians, and 2.63% were filed by others.

Psychiatric Diagnostic Procedures

According to the CMS Mental Health Services Billing Guide, psychiatric diagnostic evaluation is an integrated biopsychosocial assessment, including history, mental status, and recommendations. The evaluation may include communication with family or other sources and review of diagnostic studies.[8]

FIGURE 57. PSYCHIATRIC DIAGNOSTIC PROCEDURES PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	86.10	61.59
1/1/13-12/31/13	82.90	54.19

Annual Trend

	Jan 11-Dec 11	Apr 11-Mar 12	Jul 11-Jun 12	Oct 11-Sep 12	Jan 12-Dec 12	Apr 12-Mar 13	Jul 12-Jun 13	Oct 12-Sep 13	Jan 13-Dec 13
Long Branch and Monmouth Beach	77.24	84.10	83.01	86.10	78.48	85.80	87.86	84.73	82.90
Monmouth	56.71	61.13	61.22	61.59	57.48	58.59	57.59	56.53	54.19

Percent Change

Long Branch and Monmouth Beach	Monmouth
-3.72%	-12.01%

The rate of psychiatric diagnostic procedures among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 86.10 per 1,000 beneficiaries. After the storm, this rate decreased to 82.90 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 3.72% relative decrease.
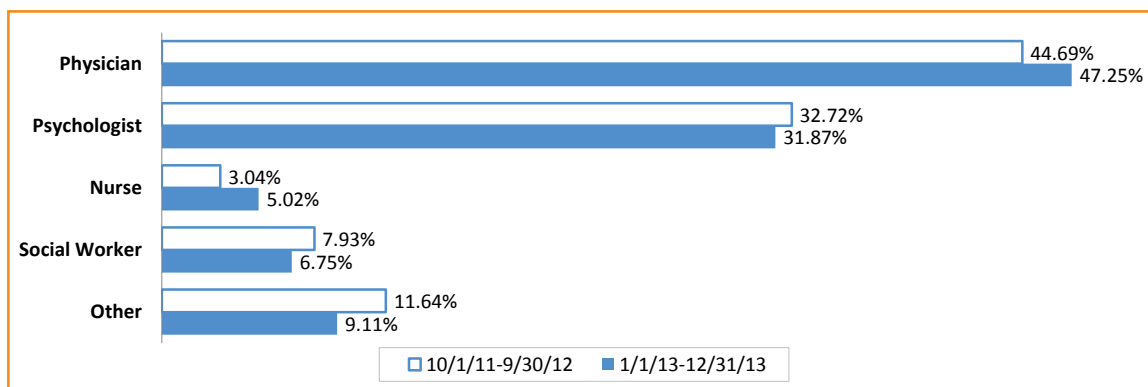
Figure 58. Provider Location for Psychiatric Diagnostic Procedures Claims for Medicare FFS Beneficiaries Residing in Long Branch and Monmouth Beach Community*				
	10/1/11-9/30/12		1/1/13-12/31/13	
Providers	Number of Claims N=593	Percent	Number of Claims N=637	Percent
Outside of New Jersey	21	3.5	16	2.5
New Jersey	572	96.5	621	97.5
• Monmouth County	344	58.0	368	57.8
− Long Branch and Monmouth Beach Community	70	11.8	159	25.0
• Other Counties	228	38.4	253	39.7

* Number of claims, instead of unique beneficiaries were used in this analysis because a beneficiary can have multiple encounters for these procedures at different locations.

After Superstorm Sandy, 637 claims for psychiatric diagnostic procedures were filed for beneficiaries residing in the Long Branch and Monmouth Beach community, with 2.5% filed outside of New Jersey and 97.5% filed within New Jersey. Of those filed in New Jersey, 57.8% were filed in Monmouth County, 25.0% were filed in the Long Branch and Monmouth Beach community, and 39.7% were filed in other counties.

FIGURE 59. PSYCHIATRIC DIAGNOSTIC PROCEDURES CLAIMS FOR MEDICARE FFS BENEFICIARIES

Provider	10/1/11-9/30/12	1/1/13-12/31/13
Physician	44.69%	47.25%
Psychologist	32.72%	31.87%
Nurse	3.04%	5.02%
Social Worker	7.93%	6.75%
Other	11.64%	9.11%

In the 12 months prior to Superstorm Sandy, 44.69% of psychiatric diagnostic procedures claims were filed by physicians, 32.72% were filed by psychologists, 11.64% were filed by others, 7.93% were filed by social workers, and 3.04% were filed by nurses.

After the storm, 47.25% of psychiatric diagnostic procedures claims were filed by physicians, 31.87% were filed by psychologists, 9.11% were filed by others, 6.75% were filed by social workers, and 5.02% were filed by nurses.

Therapies*

Summary

Figure 60. Percent Change of Behavioral Health Service Utilization – Therapies per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Individual Psychotherapy	62.56	63.57	1.61	53.59	52.00	-2.97
Family Psychotherapy	3.49	3.87	10.89	3.56	2.68	-24.72
Group Psychotherapy	4.80	6.87	43.13	3.23	2.55	-21.05

Unlike Monmouth County, the Long Branch and Monmouth Beach community experienced an increase in the utilization of all behavioral health therapy services.

FIGURE 61. ANNUAL UTILIZATION TREND OF BEHAVIORAL HEALTH THERAPY SERVICES PER 1,000 MEDICARE FFS BENEFICIARIES
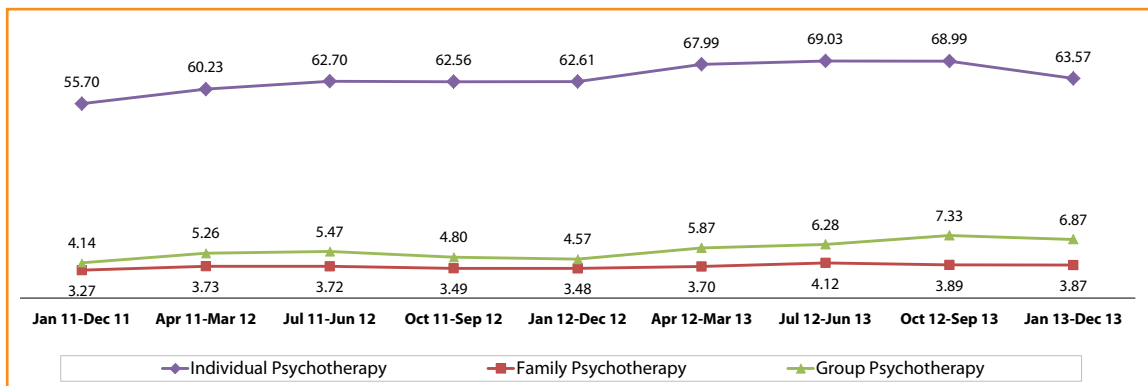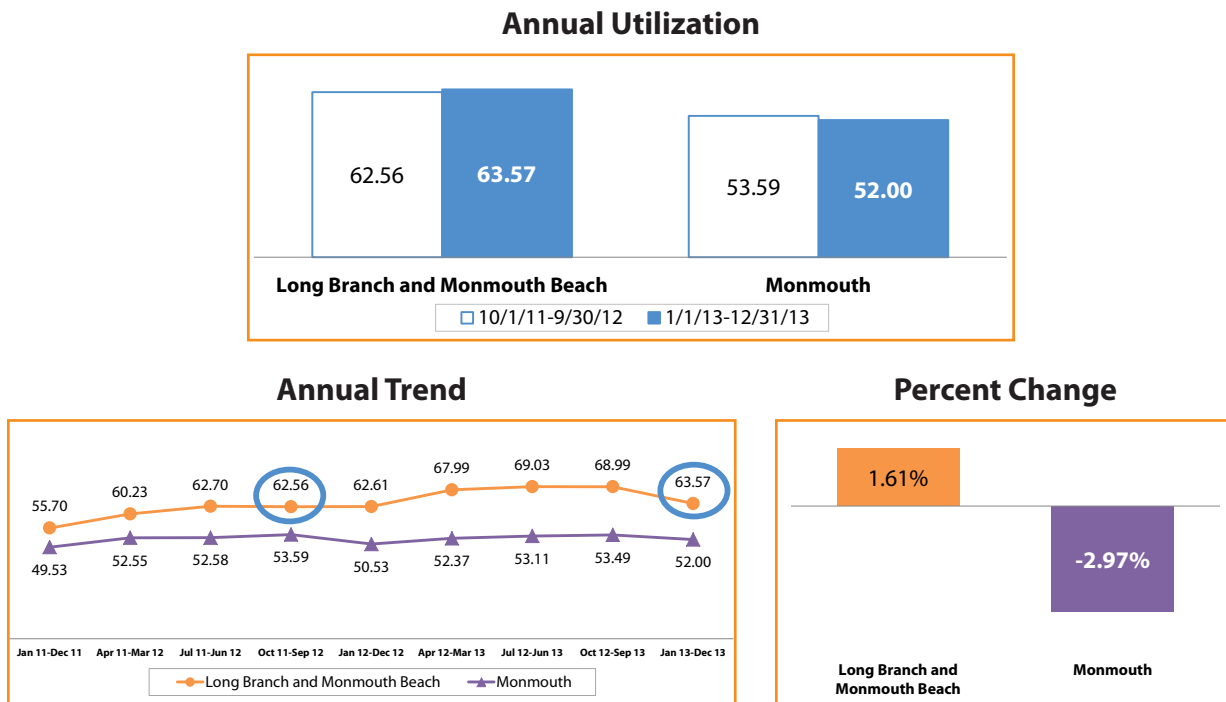

This chart reflects trending of annual utilization of behavioral health therapy services among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

*The utilization rates for Electroconvulsive Therapy and Biofeedback Therapy are not provided in this profile due to low rates.

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Individual Psychotherapy

According to the CMS Mental Health Services Billing Guide, individual psychotherapy is the treatment of mental illness and behavioral disturbances where the physician or other qualified health professional attempts to alleviate the emotional disturbances, reverse or change maladaptive patterns of behavior, and encourage personality growth and development. This is done through the use of definitive therapeutic communication.[8]

FIGURE 62. INDIVIDUAL PSYCHOTHERAPY PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	62.56	53.59
1/1/13-12/31/13	**63.57**	**52.00**

Annual Trend

Long Branch and Monmouth Beach: 55.70 (Jan 11-Dec 11), 60.23 (Apr 11-Mar 12), 62.70 (Jul 11-Jun 12), 62.56 (Oct 11-Sep 12), 62.61 (Jan 12-Dec 12), 67.99 (Apr 12-Mar 13), 69.03 (Jul 12-Jun 13), 68.99 (Oct 12-Sep 13), 63.57 (Jan 13-Dec 13)

Monmouth: 49.53, 52.55, 52.58, 53.59, 50.53, 52.37, 53.11, 53.49, 52.00

Percent Change

Long Branch and Monmouth Beach: 1.61%
Monmouth: -2.97%

The rate of individual psychotherapy among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 62.56 per 1,000 beneficiaries. After the storm, this rate increased to 63.57 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 1.61% relative increase.

Figure 63. Provider Location for Individual Psychotherapy Claims for Medicare FFS Beneficiaries Residing in Long Branch and Monmouth Beach Community*				
	10/1/11-9/30/12		1/1/13-12/31/13	
Providers	**Number of Claims N=2,585**	**Percent**	**Number of Claims N=2,644**	**Percent**
Outside of New Jersey	101	3.9	45	1.7
New Jersey	2,484	96.1	2,599	98.3
• Monmouth County	1,072	41.5	1,032	39.0
– Long Branch and Monmouth Beach Community	137	5.3	149	5.6
• Other Counties	1,412	54.6	1,567	59.3

* Number of claims, instead of unique beneficiaries were used in this analysis because a beneficiary can have multiple encounters for these procedures at different locations.

After Superstorm Sandy, 2,644 claims for individual psychotherapy were filed for beneficiaries residing in the Long Branch and Monmouth Beach community, with 1.7% filed outside of New Jersey and 98.3% filed in New Jersey. Of those filed within New Jersey, 39.0% were filed in Monmouth County, 5.6% were filed in the Long Branch and Monmouth Beach community, and 59.3% were filed in other counties.

FIGURE 64. INDIVIDUAL PSYCHOTHERAPY CLAIMS FOR MEDICARE FFS BENEFICIARIES
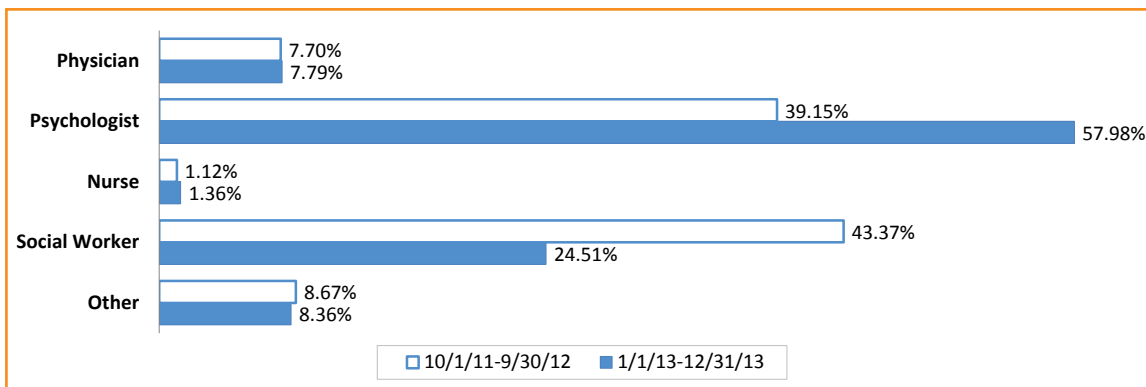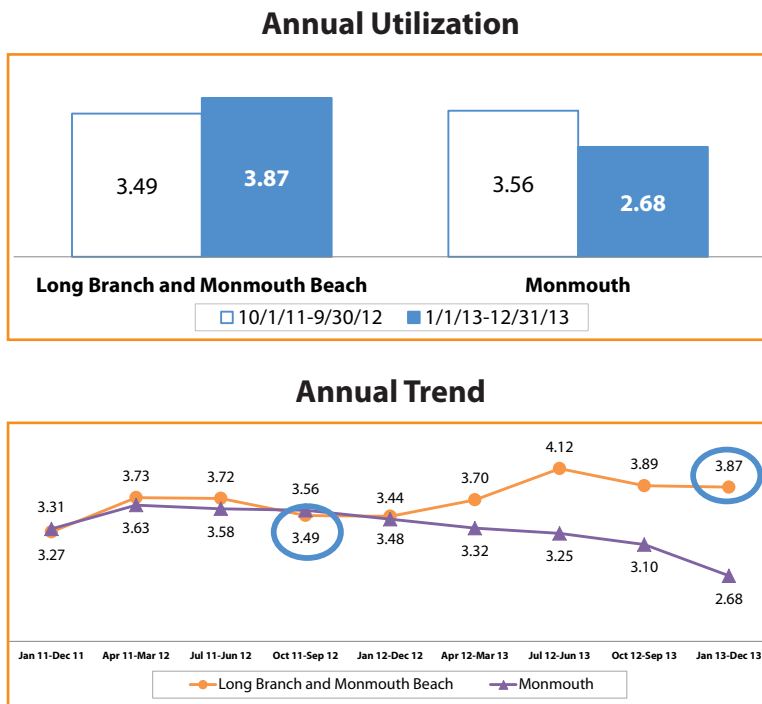

In the 12 months prior to Superstorm Sandy, 43.37% of individual psychotherapy claims were filed by social workers, 39.15% were filed by psychologists, 8.67% were filed by others, 7.70% were filed by physicians, and 1.12% were filed by nurses.

After the storm, 57.98% of individual psychotherapy claims were filed by psychologists, 24.51% were filed by social workers, 8.36% were filed by others, 7.79% were filed by physicians, and 1.36% were filed by nurses.

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Family Psychotherapy

According to the CMS Mental Health Services Billing Guide, family psychotherapy describes the treatment of the family unit when maladaptive behaviors of family members are exacerbating the beneficiary's mental illness or interfering with treatment. It can also be used to assist the family in addressing the maladaptive behaviors of the patient and improve treatment compliance.[8]

FIGURE 65. FAMILY PSYCHOTHERAPY PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

Long Branch and Monmouth Beach: 3.49 (10/1/11-9/30/12), 3.87 (1/1/13-12/31/13)
Monmouth: 3.56 (10/1/11-9/30/12), 2.68 (1/1/13-12/31/13)

□ 10/1/11-9/30/12   ■ 1/1/13-12/31/13

Annual Trend

|	Jan 11-Dec 11	Apr 11-Mar 12	Jul 11-Jun 12	Oct 11-Sep 12	Jan 12-Dec 12	Apr 12-Mar 13	Jul 12-Jun 13	Oct 12-Sep 13	Jan 13-Dec 13
Long Branch and Monmouth Beach	3.31	3.73	3.72	3.56	3.44	3.70	4.12	3.89	3.87
Monmouth	3.27	3.63	3.58	3.49	3.48	3.32	3.25	3.10	2.68

The rate of family psychotherapy among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 3.49 per 1,000 beneficiaries. After the storm, this rate increased to 3.87 per 1,000 beneficiaries, which was higher than the county rate.

Due to these low numbers, no percent change data has been provided for this therapy.

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Group Psychotherapy

According to the CMS Mental Health Services Billing Guide, group psychotherapy is a form of treatment where a selected group of patients are guided by a licensed psychotherapist for the purpose of helping to change maladaptive patterns which interfere with social functioning and are associated with a diagnosable psychiatric illness.[8]

FIGURE 66. GROUP PSYCHOTHERAPY PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

Annual Trend
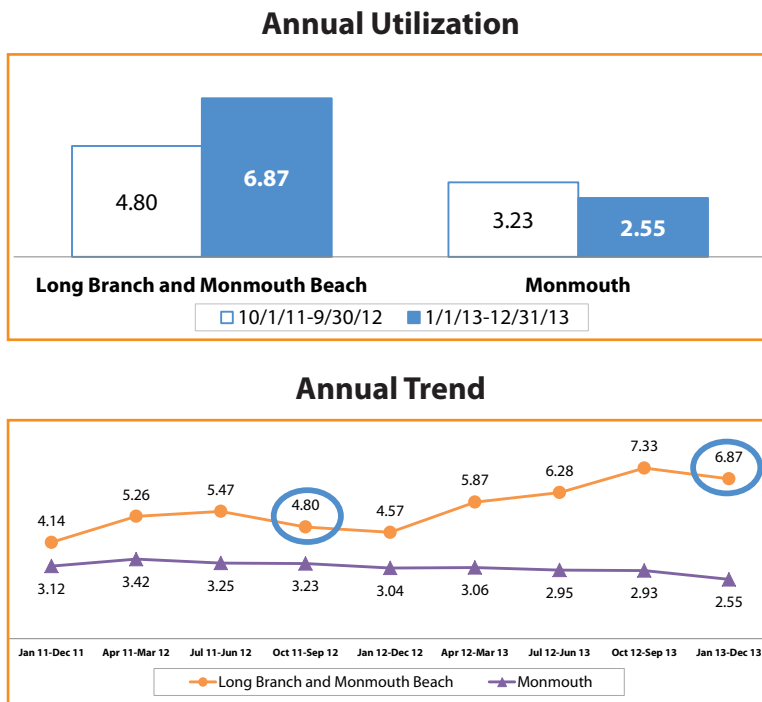
The rate of group psychotherapy among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community in the 12 months prior to Superstorm Sandy was 4.80 per 1,000 beneficiaries. After the storm, this rate increased to 6.87 per 1,000 beneficiaries, which was higher than the county rate.

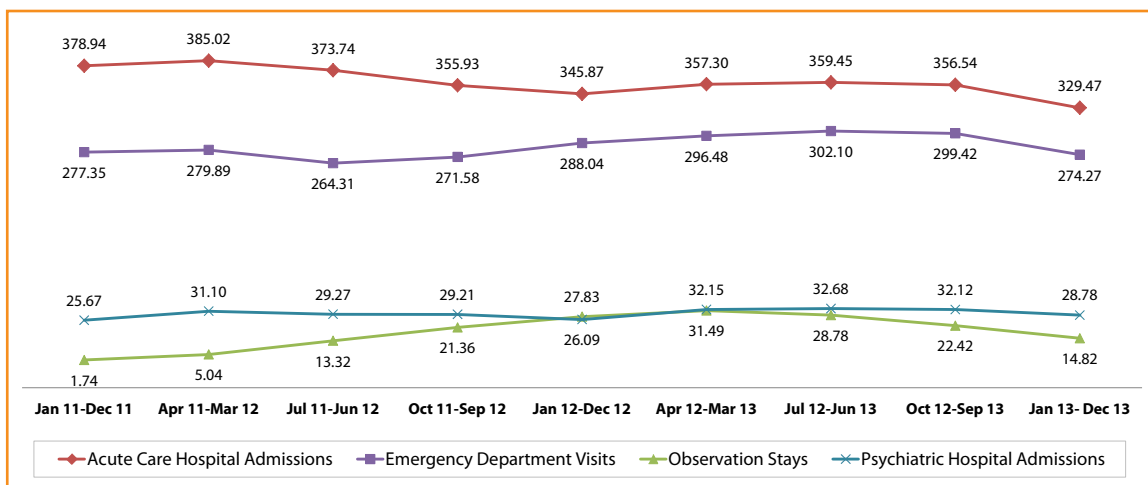Due to these low numbers, no percent change data has been provided for this therapy.

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INPATIENT **H**EALTH **S**ERVICES

Summary

Figure 67. Percent Change of Inpatient Health Service Utilization per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Psychiatric Admissions	29.21	28.78	-1.47	9.44	7.78	-17.58
Acute Care Hospital Admissions	355.93	329.47	-7.43	317.02	281.93	-11.07
Emergency Department Visits*	271.58	274.27	0.99	247.54	223.40	-9.75
Observation Stays*	21.36	14.82	-30.62	6.43	5.90	-8.24

* Emergency department visits and observation stay rates were based on inpatient Part A claims only.

The Long Branch and Monmouth Beach community experienced a larger decrease in observation stays than Monmouth County.
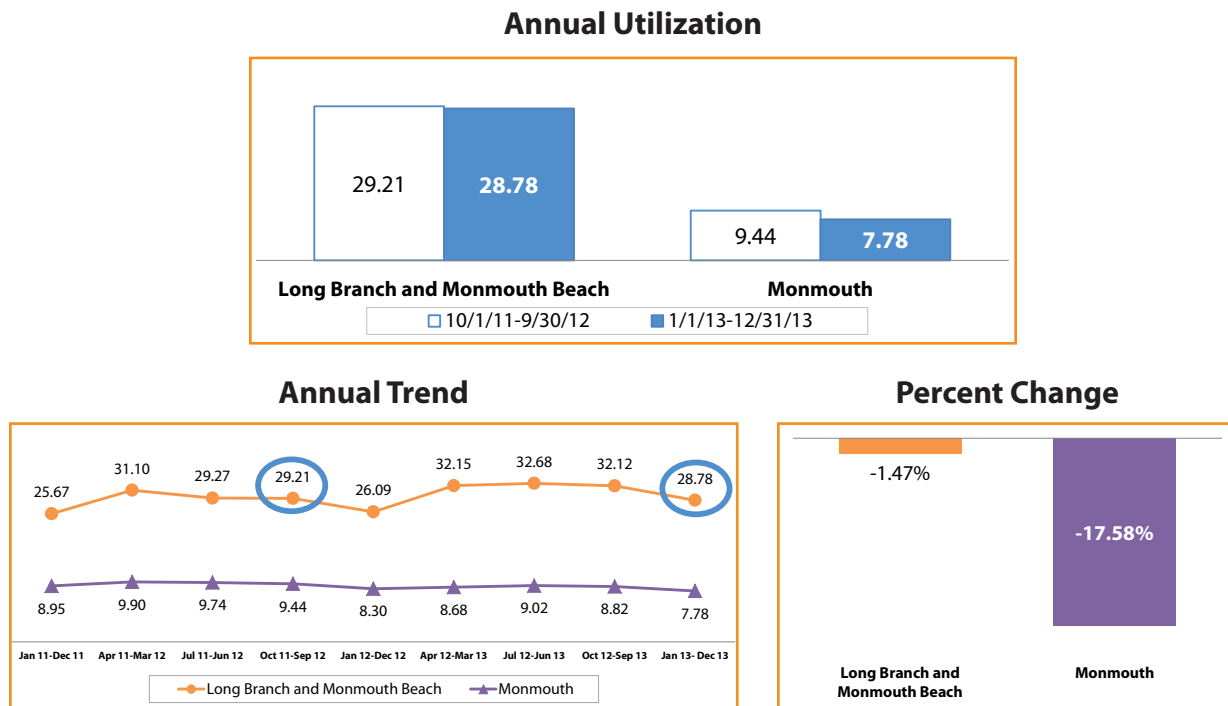
FIGURE **68. A**NNUAL **U**TILIZATION **T**REND OF **I**NPATIENT **H**EALTH **S**ERVICES PER **1,000 M**EDICARE **FFS B**ENEFICIARIES

This chart reflects trending of annual utilization of inpatient health services among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

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Psychiatric Hospital Admissions

FIGURE 69. PSYCHIATRIC HOSPITAL ADMISSIONS PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization
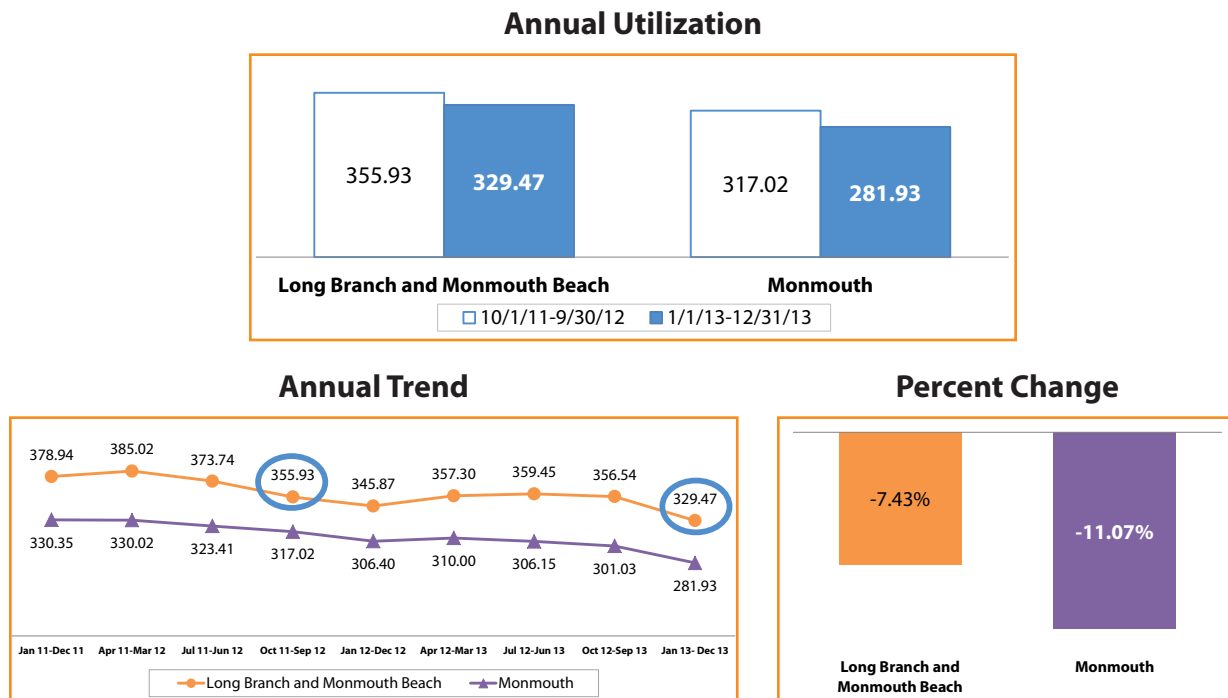
	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	29.21	9.44
1/1/13-12/31/13	28.78	7.78

Annual Trend

	Jan 11-Dec 11	Apr 11-Mar 12	Jul 11-Jun 12	Oct 11-Sep 12	Jan 12-Dec 12	Apr 12-Mar 13	Jul 12-Jun 13	Oct 12-Sep 13	Jan 13- Dec 13
Long Branch and Monmouth Beach	25.67	31.10	29.27	29.21	26.09	32.15	32.68	32.12	28.78
Monmouth	8.95	9.90	9.74	9.44	8.30	8.68	9.02	8.82	7.78

Percent Change

Long Branch and Monmouth Beach	Monmouth
-1.47%	-17.58%

In the 12 months prior to Superstorm Sandy, standalone psychiatric hospitals or distinct part psychiatric units in acute care hospitals in the Long Branch and Monmouth Beach community had an admissions rate of 29.21 per 1,000 beneficiaries. After the storm, the rate decreased to 28.78 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 1.47% relative decrease.

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Acute Care Hospitals

Admissions

The following data shows all-cause utilization measures and includes all Medicare FFS beneficiaries, not just beneficiaries with behavioral health conditions.

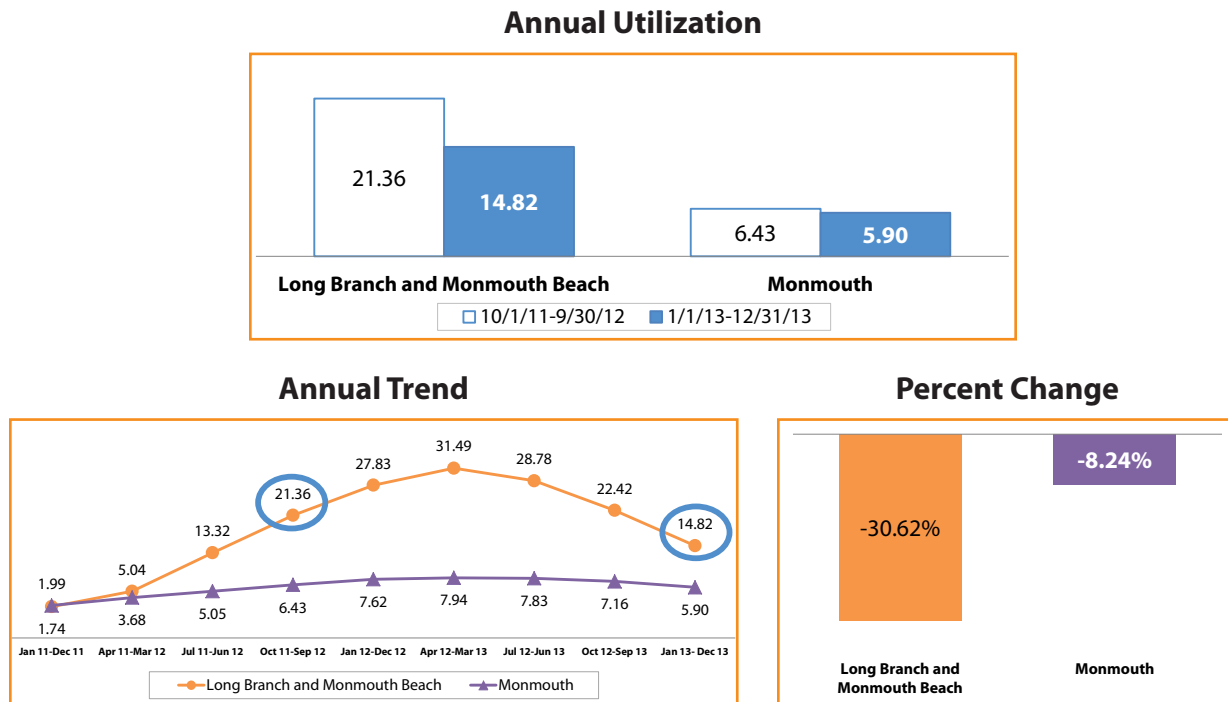FIGURE 70. ACUTE CARE HOSPITAL ADMISSIONS PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	355.93	317.02
1/1/13-12/31/13	329.47	281.93

Annual Trend

Long Branch and Monmouth Beach: 378.94, 385.02, 373.74, 355.93, 345.87, 357.30, 359.45, 356.54, 329.47

Monmouth: 330.35, 330.02, 323.41, 317.02, 306.40, 310.00, 306.15, 301.03, 281.93

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach	Monmouth
-7.43%	-11.07%

In the 12 months prior to Superstorm Sandy, acute care hospitals in the Long Branch and Monmouth Beach community had an acute care admissions rate of 355.93 per 1,000 beneficiaries. After the storm, the rate decreased to 329.47 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 7.43% relative decrease.

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Observation Stays

According to the U.S. Department of Health and Human Services, observation stays are short-term treatments and assessments provided to Medicare FFS beneficiaries as outpatients to determine whether they require further treatment as inpatients or can be discharged.

FIGURE 71. OBSERVATION STAYS PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	10/1/11-9/30/12	1/1/13-12/31/13
Long Branch and Monmouth Beach	21.36	14.82
Monmouth	6.43	5.90

Annual Trend

Long Branch and Monmouth Beach: 1.99, 5.04, 13.32, 21.36, 27.83, 31.49, 28.78, 22.42, 14.82
Monmouth: 1.74, 3.68, 5.05, 6.43, 7.62, 7.94, 7.83, 7.16, 5.90

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach: -30.62%
Monmouth: -8.24%

In the 12 months prior to Superstorm Sandy, observation stays in acute care hospitals in the Long Branch and Monmouth Beach community had a rate of 21.36 per 1,000 beneficiaries. After the storm, the rate decreased to 14.82 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 30.62% relative decrease, a larger decrease than in Monmouth County.

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Emergency Department Visits

Figure 72. Emergency Department Visits per 1,000 Medicare FFS Beneficiaries

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	271.58	247.54
1/1/13-12/31/13	274.27	223.40

Annual Trend

	Jan 11-Dec 11	Apr 11-Mar 12	Jul 11-Jun 12	Oct 11-Sep 12	Jan 12-Dec 12	Apr 12-Mar 13	Jul 12-Jun 13	Oct 12-Sep 13	Jan 13- Dec 13
Long Branch and Monmouth Beach	277.35	279.89	264.31	271.58	288.04	296.48	302.10	299.42	274.27
Monmouth	255.08	254.99	248.52	247.54	243.54	247.78	245.52	240.68	223.40

Percent Change

Long Branch and Monmouth Beach	Monmouth
0.99%	-9.75%

In the 12 months prior to Superstorm Sandy, emergency department visits in the Long Branch and Monmouth Beach community had a rate of 271.58 per 1,000 beneficiaries. After the storm, the rate increased to 274.27 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 0.99% relative increase.

Long Branch and Monmouth Beach

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Within 30 Days of Acute Care Hospital Discharge

Summary

Figure 73. Percent Change of Inpatient Health Service Utilization Within 30 Days of Discharge per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
30-Day Hospital Readmissions	64.95	62.50	-3.77	57.80	46.09	-20.26
Emergency Department Visits*	91.33	91.07	-0.28	71.78	61.90	-13.76
Observation Stays*	8.28	7.52	-9.18	6.16	5.86	-4.87

* Emergency department visits and observation stay rates were based on both inpatient and outpatient Part A claims.

The Long Branch and Monmouth Beach community experienced a larger decrease in observation stays within 30 days of discharge than Monmouth County.

Figure 74. Annual Utilization Trend of Inpatient Health Services Within 30 Days of Discharge per 1,000 Medicare FFS Beneficiaries
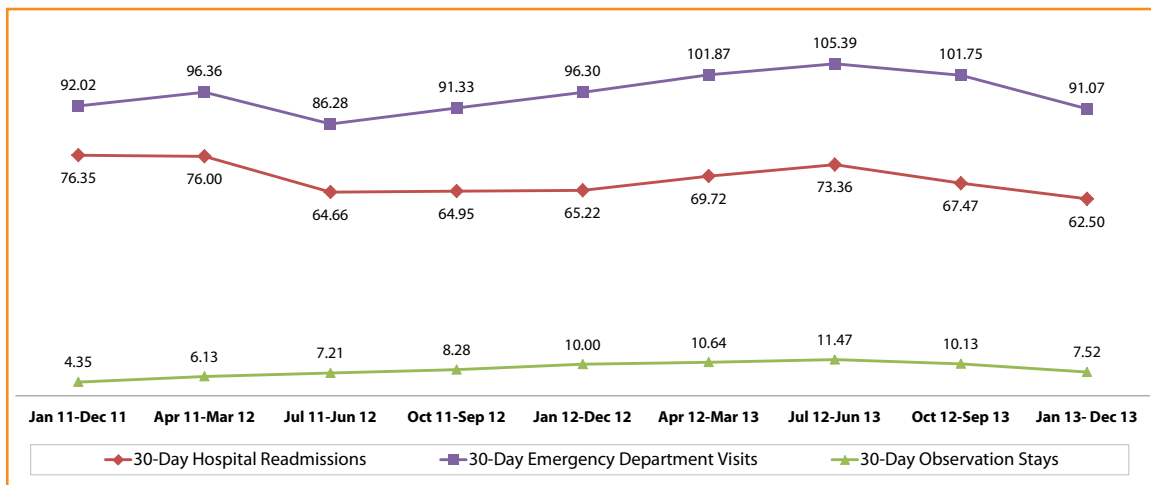
This chart reflects trending of annual utilization of inpatient health services within 30 days of discharge among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

30-Day Hospital Readmissions

FIGURE 75. 30-DAY HOSPITAL READMISSIONS PER 1,000 MEDICARE FFS BENEFICIARIES
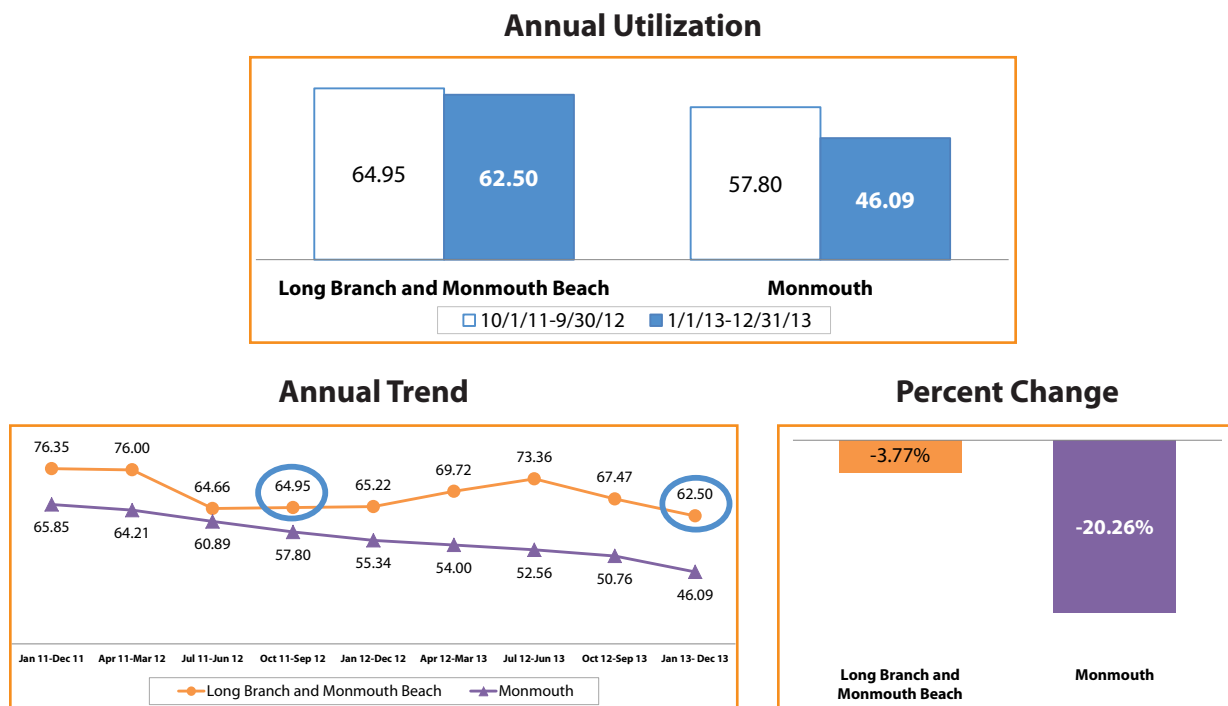
Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	64.95	57.80
1/1/13-12/31/13	**62.50**	**46.09**

Annual Trend

	Jan 11-Dec 11	Apr 11-Mar 12	Jul 11-Jun 12	Oct 11-Sep 12	Jan 12-Dec 12	Apr 12-Mar 13	Jul 12-Jun 13	Oct 12-Sep 13	Jan 13- Dec 13
Long Branch and Monmouth Beach	76.35	76.00	64.66	64.95	65.22	69.72	73.36	67.47	62.50
Monmouth	65.85	64.21	60.89	57.80	55.34	54.00	52.56	50.76	46.09

Percent Change

Long Branch and Monmouth Beach	Monmouth
-3.77%	-20.26%

In the 12 months prior to Superstorm Sandy, acute care hospitals in the Long Branch and Monmouth Beach community had a 30-day readmissions rate of 64.95 per 1,000 beneficiaries. After the storm, the rate decreased to 62.50 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 3.77% relative decrease.

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Observation Stays Within 30 Days of Discharge

FIGURE 76. OBSERVATION STAYS WITHIN 30 DAYS OF DISCHARGE PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

8.28 | 7.52 | 6.16 | 5.86

Long Branch and Monmouth Beach | Monmouth

☐ 10/1/11-9/30/12 ■ 1/1/13-12/31/13

Annual Trend

4.37 | 6.13 | 7.21 | 8.28 | 10.00 | 10.64 | 11.47 | 10.13 | 7.52

4.35 | 5.36 | 5.59 | 6.16 | 6.33 | 6.45 | 6.64 | 6.38 | 5.86

Jan 11-Dec 11 | Apr 11-Mar 12 | Jul 11-Jun 12 | Oct 11-Sep 12 | Jan 12-Dec 12 | Apr 12-Mar 13 | Jul 12-Jun 13 | Oct 12-Sep 13 | Jan 13- Dec 13

Long Branch and Monmouth Beach | Monmouth

Percent Change

-9.18% | -4.87%

Long Branch and Monmouth Beach | Monmouth
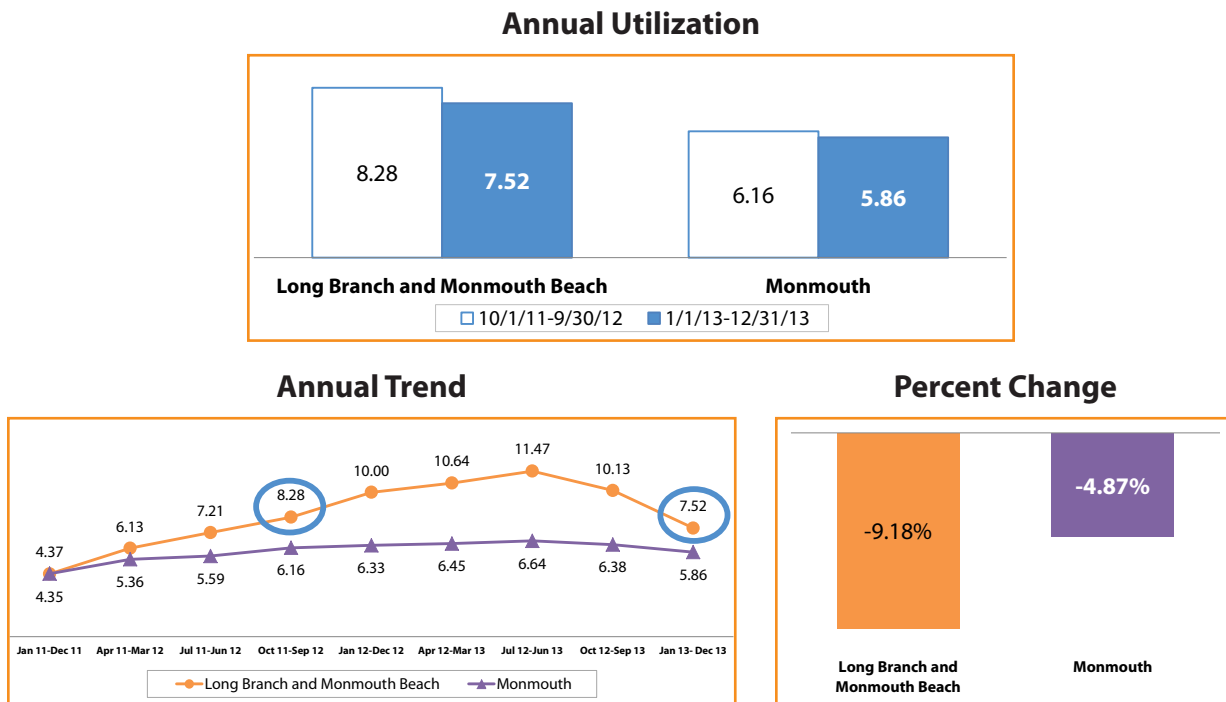
In the 12 months prior to Superstorm Sandy, the rate of observation stays within 30 days of discharge in the Long Branch and Monmouth Beach community was 8.28 per 1,000 beneficiaries. After the storm, the rate decreased to 7.52 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 9.18% relative decrease, a larger decrease than in Monmouth County.

Emergency Department Visits Within 30 Days of Discharge

FIGURE 77. EMERGENCY DEPARTMENT VISITS WITHIN 30 DAYS OF DISCHARGE PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	91.33	71.78
1/1/13-12/31/13	91.07	61.90

Annual Trend

	Jan 11-Dec 11	Apr 11-Mar 12	Jul 11-Jun 12	Oct 11-Sep 12	Jan 12-Dec 12	Apr 12-Mar 13	Jul 12-Jun 13	Oct 12-Sep 13	Jan 13- Dec 13
Long Branch and Monmouth Beach	92.02	96.36	86.28	91.33	96.30	101.87	105.39	101.75	91.07
Monmouth	77.56	77.36	73.76	71.78	70.19	69.47	68.80	67.79	61.90

Percent Change

Long Branch and Monmouth Beach	Monmouth
-0.28%	-13.76%
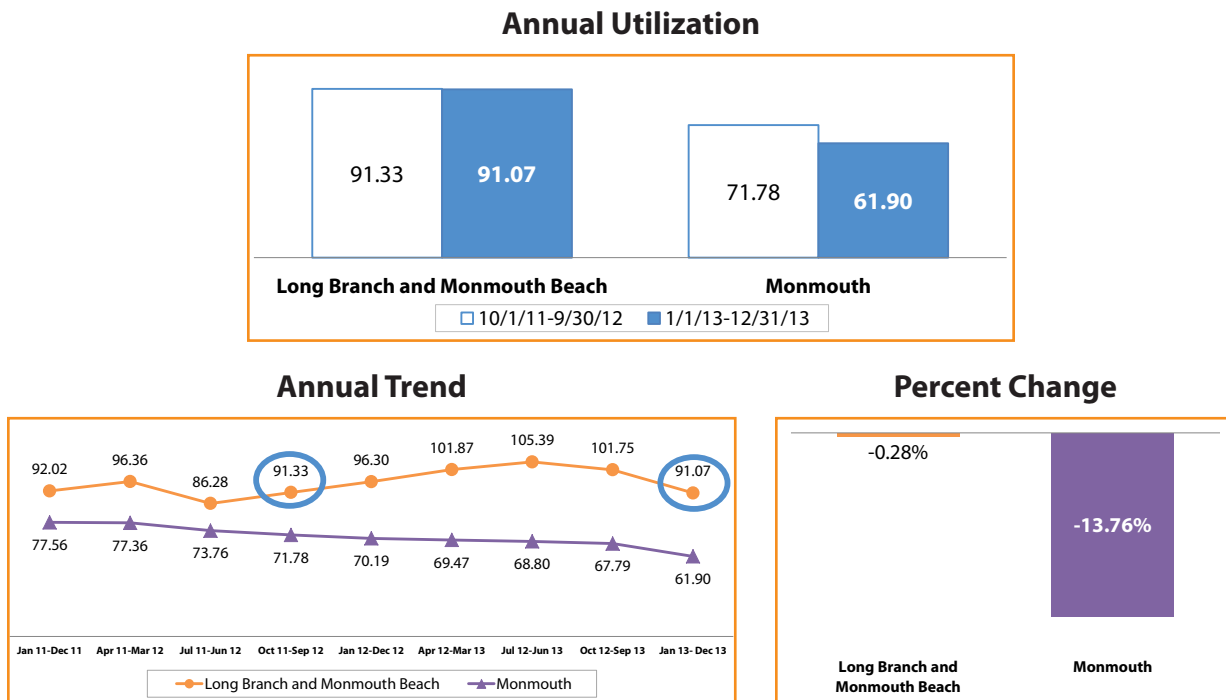
In the 12 months prior to Superstorm Sandy, the rate of emergency department visits within 30 days of discharge in the Long Branch and Monmouth Beach community was 91.33 per 1,000 beneficiaries. After the storm, the rate decreased to 91.07 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 0.28% relative decrease.

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Other Settings

Summary

Figure 78. Percent Change of Other Health Services Utilization per 1,000 Medicare FFS Beneficiaries						
	Long Branch and Monmouth Beach			Monmouth		
	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change	10/1/11 – 9/30/12	1/1/13 – 12/31/13	% Change
Home Health Agency	108.76	96.43	-11.34	96.00	88.13	-8.20
Skilled Nursing Facility	60.59	59.06	-2.53	71.39	65.96	-7.61
Hospice	27.68	30.07	8.63	30.11	27.72	-7.94
Medical Rehabilitation	31.60	33.29	5.35	16.06	15.27	-4.92

The Long Branch and Monmouth Beach community experienced a larger decrease in home health agency services than Monmouth County.

FIGURE 79. ANNUAL UTILIZATION TREND IN OTHER HEALTH SERVICES PER 1,000 MEDICARE FFS BENEFICIARIES
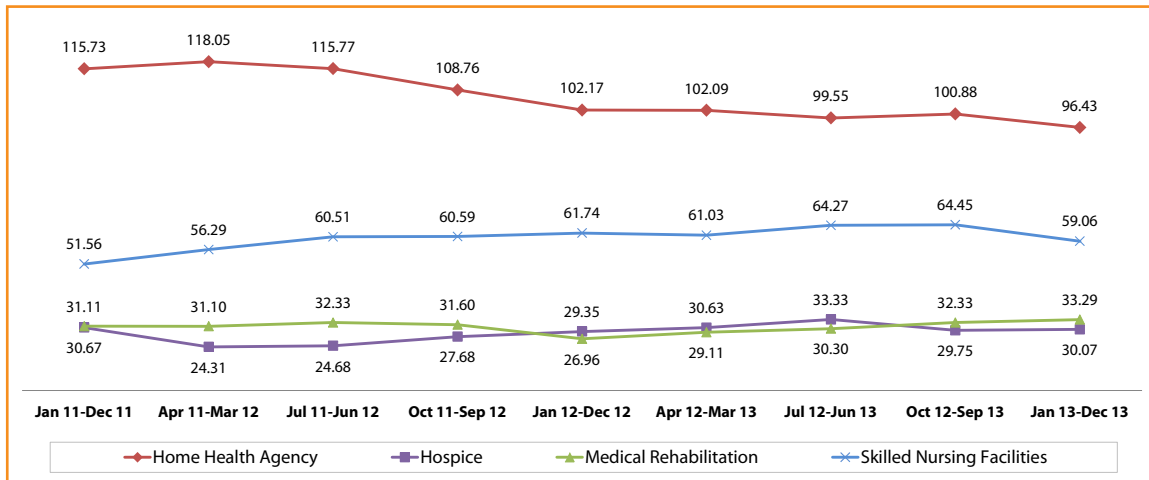
This chart reflects trending of annual utilization of other health services among Medicare FFS beneficiaries residing in the Long Branch and Monmouth Beach community.

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Home Health Agency Services

FIGURE 80. HOME HEALTH AGENCY SERVICES PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	108.76	96.00
1/1/13-12/31/13	96.43	88.13

Annual Trend

Long Branch and Monmouth Beach: 115.73, 118.05, 115.77, 108.76, 102.17, 102.09, 99.55, 100.88, 96.43

Monmouth: 98.59, 99.13, 97.32, 96.00, 92.10, 94.81, 93.13, 92.67, 88.13

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13-Dec 13

Percent Change

Long Branch and Monmouth Beach	Monmouth
-11.34%	-8.20%
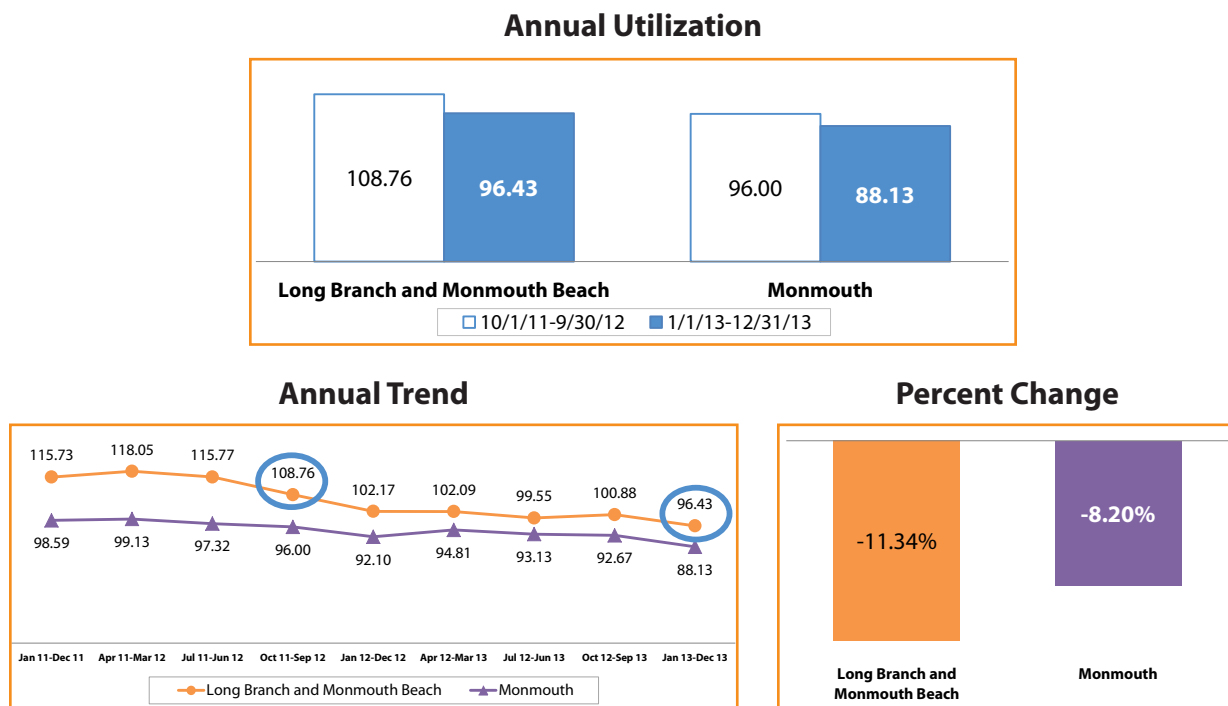
In the 12 months prior to Superstorm Sandy, the utilization rate of home health agency services in the Long Branch and Monmouth Beach community was 108.76 per 1,000 beneficiaries. After the storm, the rate decreased to 96.43 per 1,000 beneficiaries, which was higher than the county rate. This change reflects an 11.34% relative decrease, a larger decrease than in Monmouth County.

LONG BRANCH AND MONMOUTH BEACH

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Skilled Nursing Facility Services

Figure 81. Skilled Nursing Facility Services per 1,000 Medicare FFS Beneficiaries

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	60.59	71.39
1/1/13-12/31/13	59.06	65.96

Annual Trend

Long Branch and Monmouth Beach: 51.56, 56.29, 60.51, 60.59, 61.74, 61.03, 64.27, 64.45, 59.06

Monmouth: 73.07, 74.42, 73.00, 71.39, 69.45, 72.23, 72.14, 71.28, 65.96

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach	Monmouth
-2.53%	-7.61%
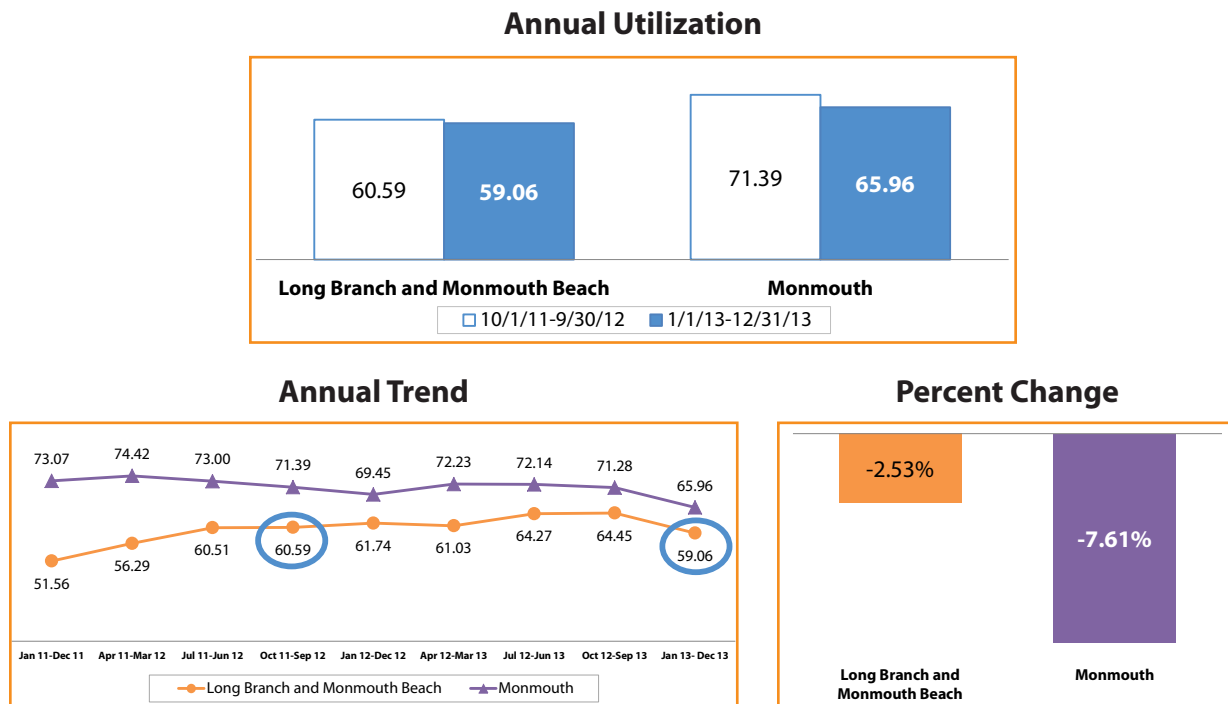
In the 12 months prior to Superstorm Sandy, the utilization rate of skilled nursing facility services in the Long Branch and Monmouth Beach community was 60.59 per 1,000 beneficiaries. After the storm, the rate decreased to 59.06 per 1,000 beneficiaries, reflecting a 2.53% relative decrease.

Long Branch and Monmouth Beach ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

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Hospice Services

FIGURE 82. HOSPICE SERVICES PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	27.68	30.11
1/1/13-12/31/13	30.07	27.72

Annual Trend

Long Branch and Monmouth Beach:
Jan 11-Dec 11: 30.67
Apr 11-Mar 12: 24.31
Jul 11-Jun 12: 24.68
Oct 11-Sep 12: 27.68
Jan 12-Dec 12: 29.35
Apr 12-Mar 13: 30.63
Jul 12-Jun 13: 33.33
Oct 12-Sep 13: 29.75
Jan 13- Dec 13: 30.07

Monmouth:
Jan 11-Dec 11: 29.88
Apr 11-Mar 12: 29.94
Jul 11-Jun 12: 29.58
Oct 11-Sep 12: 30.11
Jan 12-Dec 12: 29.65
Apr 12-Mar 13: 29.82
Jul 12-Jun 13: 29.63
Oct 12-Sep 13: 28.88
Jan 13- Dec 13: 27.72

Percent Change

Long Branch and Monmouth Beach	Monmouth
8.63%	-7.94%

In the 12 months prior to Superstorm Sandy, the utilization rate of hospice services in the Long Branch and Monmouth Beach community was 27.68 per 1,000 beneficiaries. After the storm, the rate increased to 30.07 per 1,000 beneficiaries which was higher than the county rate. This change reflects an 8.63% relative increase.

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Medical Rehabilitation Services

FIGURE 83. MEDICAL REHABILITATION SERVICES PER 1,000 MEDICARE FFS BENEFICIARIES

Annual Utilization

	Long Branch and Monmouth Beach	Monmouth
10/1/11-9/30/12	31.60	16.06
1/1/13-12/31/13	33.29	15.27

Annual Trend

Long Branch and Monmouth Beach: 31.11, 31.10, 32.33, 31.60, 26.96, 29.11, 30.30, 32.33, 33.29

Monmouth: 16.05, 16.33, 16.29, 16.06, 15.29, 15.85, 15.93, 15.94, 15.27

Jan 11-Dec 11, Apr 11-Mar 12, Jul 11-Jun 12, Oct 11-Sep 12, Jan 12-Dec 12, Apr 12-Mar 13, Jul 12-Jun 13, Oct 12-Sep 13, Jan 13- Dec 13

Percent Change

Long Branch and Monmouth Beach: 5.35%
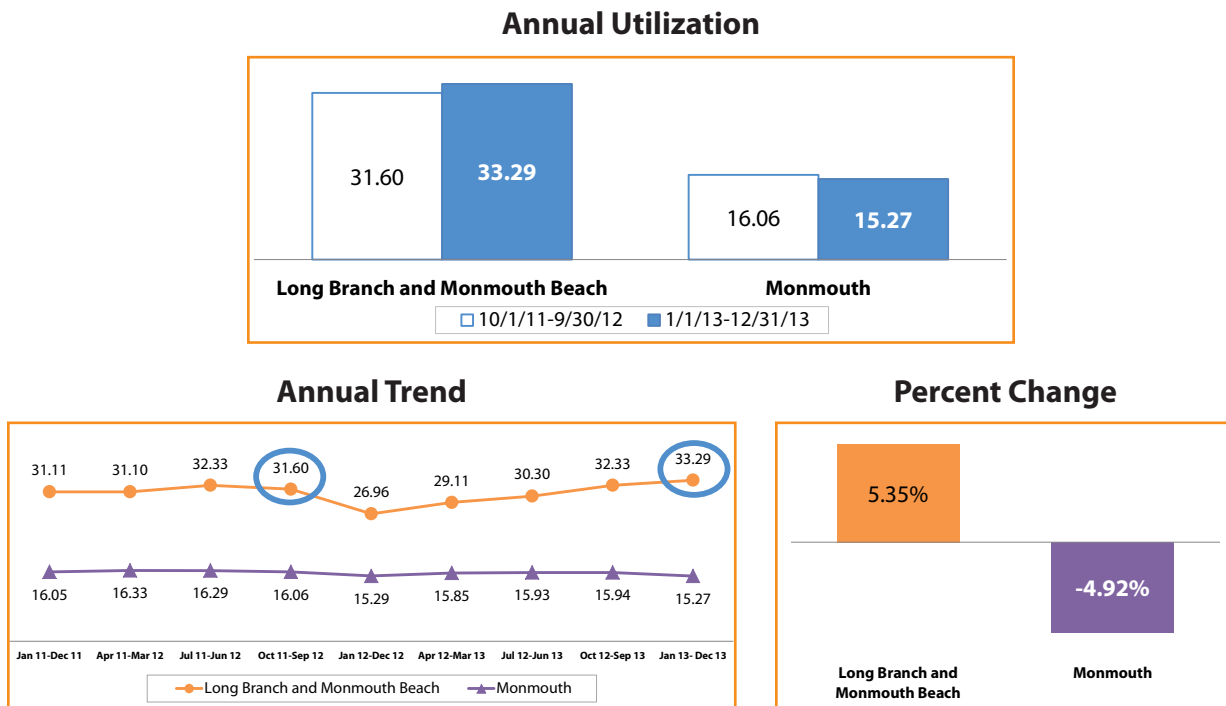
Monmouth: -4.92%

In the 12 months prior to Superstorm Sandy, the utilization rate of medical rehabilitation services in the Long Branch and Monmouth Beach community was 31.60 per 1,000 beneficiaries. After the storm, the rate increased to 33.29 per 1,000 beneficiaries, which was higher than the county rate. This change reflects a 5.35% relative increase.

LISTING OF MAJOR HEALTH PROVIDERS

The list below shows the major healthcare facilities that provided 90% of all health services to beneficiaries residing in the Long Branch and Monmouth Beach community. These are providers in different care settings and are not restricted to behavioral health providers or services. The map on the following page depicts the location of these providers in relation to the community.

Acute Care Hospitals

Jersey Shore University Medical Center

Monmouth Medical Center

Riverview Medical Center

Psychiatric Facilities

CentraState Medical Center

Jersey Shore University Medical Center

Monmouth Medical Center

Riverview Medical Center

Medical Rehabilitation Centers

HealthSouth Rehabilitation Hospital of Tinton Falls

Skilled Nursing Facilities

CareOne at King James

Gateway Care Center

Jersey Shore Center

Meridian Nursing and Rehabilitation at Shrewsbury

Monmouth Care Center

Hospice Facilities

Barnabas Health Hospice and Palliative Care Center

Home Health Agencies

Holy Redeemer Home Care NJ North

Meridian Home Care-Monmouth County

Visiting Nurse Association of Central Jersey

Long Branch and Monmouth Beach Community Providers

The map below shows the major healthcare facilities that served the beneficiaries of the Long Branch and Monmouth Beach community based on the Medicare Part A claims database. These are providers in all different care settings and are not restricted to behavioral health providers or services. There are four providers located in the community: one hospital, one psychiatric facility, one nursing home, and one hospice.

Map Legend

▼ Medical Rehabilitation Centers   ▼ Psychiatric Facilities   ▼ Hospice Facilities   ▼ Home Health Agencies

▼ Acute Care Hospitals   ▼ Skilled Nursing Facility

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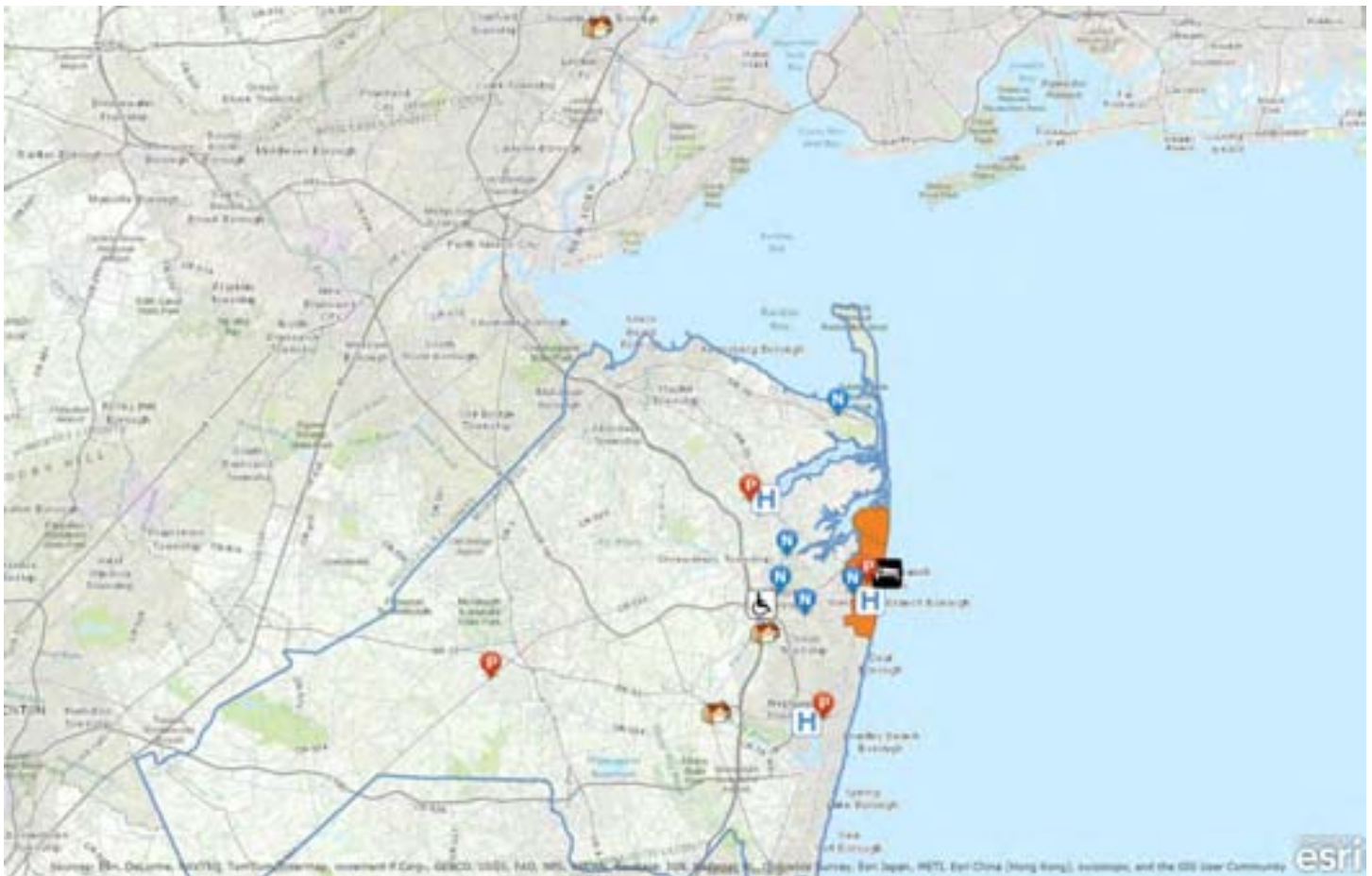
APPENDIX A: BEHAVIORAL HEALTH CONDITIONS

Documentation and Technical Notes

The following defines the study population, the time frames, and the exclusion and inclusion criteria:

Data Source

- New Jersey Medicare FFS Part A and Part B claims data and denominator file

Reference Time Period

- Annual prevalence for the selected behavioral health conditions comparing October 2011 –September 2012 to January 1, 2013 – December 31, 2013
- Annual prevalence trend with quarterly rolling for the selected behavioral health conditions (data starting from January 1, 2011 to December 31, 2013)
- Quarterly new incidence trend of conditions that were not existent (not reported) in the past 12 months of the selected eight behavioral health conditions (data starting from January 1, 2012 to December 31, 2013)

Mapping Tool

- QGIS Development Team, 2014, QGIS Geographic Information System. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
- Source: ZIP code boundaries based on the 2013 U.S. Census Tiger Files

Denominator

- Denominator was the sum of all eligible Medicare FFS beneficiaries who were in the CMS denominator file during the measurement time frame
- Eligible beneficiaries were computed after adjusting for total enrolled FFS days divided by the total measurement days in the time frame
- Where Medicare FFS enrolled days > 0

Numerator

- Unique Medicare FFS beneficiaries with disease-specific inpatient or outpatient claims during the time frame
- CCW and AHRQ disease diagnosis code match (ICD-9-CM codes) Part A dgns_cd_1-25 and dgns_e_cd_1-3; Match Part B dgns_cd_1_12

Exclusions

- HMO coverage period
- Age <18 or >= 110; Age calculated as end date of time frame or date of death – birth date
- Eligible Medicare FFS days/total measurement days = 0

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Resources

More information on the classification codes, requirements, and processing of the behavioral health conditions highlighted in this profile can be located at the following links:

- Buccaneer, A General Dynamics Company. Chronic Condition Data Warehouse: Additions and Access – Task Order 10 New Clinical Conditions: Requirements and Processing

- [Internet]. [unknown]: Buccaneer, A General Dynamics Company. 2013 May 22 [cited 17 Sep 2013]. Available from: https://www.ccwdata.org/cs/groups/public/documents/document/clin_cond_algo_req_proc.pdf

- Healthcare Cost and Utilization Project (H-CUP). Clinical Classifications Software (CCS) for ICD-9-CM [Internet]. Rockville (MD): Agency for Healthcare Research and Quality; Nov 2013 [15 Sep 2013]. Available from: http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp

The following table shows the ICD-9-CM codes for the eight behavioral health conditions:

Behavioral Health Conditions	Numerator: Valid ICD-9-CM Codes
Depression or Proxy Disorders (Depression, Anxiety Disorders or Adjustment Disorders)	29384, 29620, 29621, 29622, 29623, 29624, 29625, 29626, 29630, 29631, 29632, 29633, 29634, 29635, 29636, 30000, 30001, 30002, 30009, 30010, 30020, 30021, 30022, 30023, 30029, 3003, 3004, 3005, 30089, 3009, 3080, 3081, 3082, 3083, 3084, 3089, 3090, 3091, 30922, 30923, 30924, 30928, 30929, 3093, 3094, 30981, 30982, 30983, 30989, 3099, 311, 3130, 3131, 31321, 31322, 3133, 31382, 31383, V790
Depression	29620, 29621, 29622, 29623, 29624, 29625, 29626, 29630, 29631, 29632, 29633, 29634, 29635, 29636, 3004, 311, V790
Anxiety Disorders	29384, 30000, 30001, 30002, 30009, 30010, 30020, 30021, 30022, 30023, 30029, 3003, , 3005, 30089, 3009, 3080, 3081, 3082, 3083, 3084, 3089, 3130, 3131, 31321, 31322, 3133, 31382, 31383
Adjustment Disorders	3090, 3091, 30922, 30923, 30924, 30928, 30929, 3093, 3094, 30981, 30982, 30983, 30989, 3099
Post-Traumatic Stress Disorder (PTSD)	30981
Alcohol or Substance Abuse	2920, 29211, 29212, 2922, 29281, 29282, 29283, 29284, 29285, 29289, 2929, 30400, 30401, 30402, 30403, 30410, 30411, 30412, 30413, 30420, 30421, 30422, 30423, 30430, 30431, 30432, 30433, 30440, 30441, 30442, 30443, 30450, 30451, 30452, 30453, 30460, 30461, 30462, 30463, 30470, 30471, 30472, 30473, 30480, 30481, 30482, 30483, 30490, 30491, 30492, 30493, 30520, 30521, 30522, 30523, 30530, 30531, 30532, 30533, 30540, 30541, 30542, 30543, 30550, 30551, 30552, 30553, 30560, 30561, 30562, 30563, 30570, 30571, 30572, 30573, 30580, 30581, 30582, 30583, 30590, 30591, 30592, 30593, 64830, 64831, 64832, 64833, 64834, 65550, 65551, 65553, 76072, 76073, 76075, 7795, 96500, 96501, 96502, 96509, V6542 Alcohol Abuse: 2910, 2911, 2912, 2913, 2914, 2915, 2918, 29181, 29182, 29189, 2919, 30300, 30301, 30302, 30303, 30390, 30391, 30392, 30393, 30500, 30501, 30502, 30503, 76071, 9800

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Behavioral Health Conditions	Numerator: Valid ICD-9-CM Codes
Substance Abuse Alone	2920, 29211, 29212, 2922, 29281, 29282, 29283, 29284, 29285, 29289, 2929, 30400, 30401, 30402, 30403, 30410, 30411, 30412, 30413, 30420, 30421, 30422, 30423, 30430, 30431, 30432, 30433, 30440, 30441, 30442, 30443, 30450, 30451, 30452, 30453, 30460, 30461, 30462, 30463, 30470, 30471, 30472, 30473, 30480, 30481, 30482, 30483, 30490, 30491, 30492, 30493, 30520, 30521, 30522, 30523, 30530, 30531, 30532, 30533, 30540, 30541, 30542, 30543, 30550, 30551, 30552, 30553, 30560, 30561, 30562, 30563, 30570, 30571, 30572, 30573, 30580, 30581, 30582, 30583, 30590, 30591, 30592, 30593, 64830, 64831, 64832, 64833, 64834, 65550, 65551, 65553, 76072, 76073, 76075, 7795, 96500, 96501, 96502, 96509, V6542
Suicide and Intentional Self-Inflicted Injury	E9500, E9501, E9502, E9503, E9504, E9505, E9506, E9507, E9508, E9509, E9510, E9511, E9518, E9520, E9521, E9528, E9529, E9530, E9531, E9538, E9539, E954, E9550, E9551, E9552, E9553, E9554, E9555, E9556, E9557, E9559, E956, E9570, E9571, E9572, E9579, E9580, E9581, E9582, E9583, E9584, E9585, E9586, E9587, E9588, E9589, E959, V6284

Appendix B: Risk Factors for Depression or Proxy Disorders

Documentation and Technical Notes

The following defines the study population, the time frame, the exclusion and inclusion criteria, and the literature review references:

Data Source

- New Jersey Medicare FFS Part A and Part B claims data and denominator file

Reference Time Period

- Annual prevalence of risk factors for depression or proxy disorders comparing October 1, 2011 – September 30, 2012 to January 1, 2013 – December 31, 2013
- Annual prevalence trend for risk factors for depression or proxy disorders consists of nine points of data with rolling quarters (starting January 1, 2011 and December 31, 2013)

Mapping Tool

- QGIS Development Team, 2014, QGIS Geographic Information System. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
- Source: ZIP code boundaries based on the 2013 U.S. Census Tiger Files

Denominator

- Denominator was the sum of all eligible Medicare FFS beneficiaries who were in the CMS denominator file during the measurement time frame
- Eligible beneficiaries were computed after adjusting for total enrolled FFS days divided by the total measurement days in the time frame
- Where Medicare FFS enrolled days > 0

Numerator

- Unique Medicare FFS beneficiaries with disease-specific inpatient or outpatient claims during the time frame
- CCW and AHRQ disease diagnosis code match (ICD-9-CM codes) Part A dgns_cd_1-25 and dgns_e_cd_1-3; Match Part B dgns_cd_1_12

Exclusions

- HMO coverage period
- Age <18 or >= 110; Age calculated as end date of time frame or date of death – birth date
- Eligible Medicare FFS days/total measurement days = 0

Model

- Logistic Regression Models were used to determine the top five risk factors with the highest Odds Ratios (OR) (p<0.001)

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Resources

More information on the classification codes, requirements, and processing of the combination measure of depression or proxy disorders which includes beneficiaries reported for either depression, anxiety, or adjustment disorders can be located at the following links:

- Buccaneer, A General Dynamics Company. Chronic Condition Data Warehouse: Additions and Access – Task Order 10 New Clinical Conditions: Requirements and Processing

- [Internet]. [unknown]: Buccaneer, A General Dynamics Company. 2013 May 22 [cited 17 Sep 2013]. Available from: https://www.ccwdata.org/cs/groups/public/documents/document/clin_cond_algo_req_proc.pdf

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Literature Review References for Risk Factors for Depression or Proxy Disorders

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Substance Abuse and Mental Health Services Administration. The Treatment of Depression in Older Adults: Depression and Older Adults: Key Issues [Internet]. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, 2011 [cited 2013 Sep 24]. HHS Pub. No. SMA-11-4631. 24 p. Available from: http://store.samhsa.gov/shin/content/SMA11-4631CD-DVD/SMA11-4631CD-DVD-KeyIssues.pdf

Himelhoch S, Weller WE, Wu AW, Anderson GF, Cooper LA. Chronic medical illness, depression, and use of acute medical services among Medicare beneficiaries. Medical Care. 2004 Jun [cited 2013 Sep 25];42(6):512-521.

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Oregon State University, Washington State University, University of Idaho. Depression in Later Life: Recognition and Treatment [Internet]. Corvallis(OR): Pacific Northwest Extension Publication; 2004 Jul [Published April 1990; revised July 2000; cited 2013 Sep 29]; 32 p. Available from: http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/20713/pnw347.pdf

Cole MG, Dendukuri N. Risk factors for depression among elderly community subjects: a systematic review and meta-analysis. American Journal of Psychiatry [Internet]. 2003 Jun [cited 2013 Sep 29]; 160(6):1147-1156. Available from: http://ajp.psychiatryonline.org/article.aspx?articleid=176272

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Pietrzak RH, Southwick SM, Tracy M, Galea S, Norris FH. Posttraumatic stress disorder, depression, and perceived needs for psychological care in older persons affected by Hurricane Ike. Journal of Affective Disorders [Internet]. 2012 Apr [cited 2013 Sep 30];138(1-2):96-103. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3306486/

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Noyes K, Liu H, Lyness JM, Friedman B. Medicare beneficiaries with depression: comparing diagnoses in claims data with the results of screening. Psychiatric Services [Internet]. 2011 Oct [cited 2013 Sep 30];62(10):1159-1166. Available from: http://ps.psychiatryonline.org/data/Journals/PSS/4336/pss6210_1159.pdf

The following table shows the ICD-9-CM codes for the top five risk factors for depression or proxy disorders:

Top Five Risk Factors for Depression or Proxy Disorders*	Numerator: Valid ICD-9-CM Codes
Alzheimer's Disease and Related Disorders or Senile Dementia	3311, 33111, 33119, 3312, 3317, 2900, 29010, 29011, 29012, 29013, 29020, 29021, 2903, 29040, 29041, 29042, 29043, 2940, 2941, 29410, 29411, 2948, 797
Sleep Disturbance	04672, 29182, 29285, 30740, 30741, 30742, 30748, 30749, 32700, 32701, 32702, 32709, 78050, 78051, 78052, 78059
Substance or Alcohol Abuse or Tobacco Use	2910, 2911, 2912, 2913, 2914, 2915, 2918, 29181, 29182, 29189, 2919, 2920, 29211, 29212, 2922, 29281, 29282, 29283, 29284, 29285, 29289, 2929, 30300, 30301, 30302, 30303, 30390, 30391, 30392, 30393, 30400, 30401, 30402, 30403, 30410, 30411, 30412, 30413, 30420, 30421, 30422, 30423, 30430, 30431, 30432, 30433, 30440, 30441, 30442, 30443, 30450, 30451, 30452, 30453, 30460, 30461, 30462, 30463, 30470, 30471, 30472, 30473, 30480, 30481, 30482, 30483, 30490, 30491, 30492, 30493, 30500, 30501, 30502, 30503, 3051, 30510, 30511, 30512, 30513, 30520, 30521, 30522, 30523, 30530, 30531, 30532, 30533, 30540, 30541, 30542, 30543, 30550, 30551, 30552, 30553, 30560, 30561, 30562, 30563, 30570, 30571, 30572, 30573, 30580, 30581, 30582, 30583, 30590, 30591, 30592, 30593, 33392, 3575, 4255, 5353, 53530, 53531, 5710, 5711, 5712, 5713, 64830, 64831, 64832, 64833, 64834, 65550, 65551, 65553, 76071, 76072, 76073, 76075, 7795, 7903, 96500, 96501, 96502, 96509, 9800, V110, V111, V112, V113, V114, V118, V119, V154, V1541, V1542, V1549, V1582, V6285, V6542, V663, V701, V702, V7101, V7102, V7109, V790, V791, V792, V793, V798, V799
Hip/Pelvic Fractures	73314, 73315, 73396, 73397, 73398, 8080, 8081, 8082, 8083, 80841, 80842, 80843, 80849, 80851, 80852, 80853, 80859, 8088, 8089, 82000, 82001, 82002, 82003, 82009, 82010, 82011, 82012, 82013, 82019, 82020, 82021, 82022, 82030, 82031, 82032, 8208, 8209
Amputations	8870, 8871, 8872, 8873, 8874, 8875, 8876, 8877, 8960, 8961, 8962, 8963, 8970, 8971, 8972, 8973, 8974, 8975, 8976, 8977, 9059, 99760, 99761, 99762, 99769

* Other risk factors for depression or proxy disorders analyzed include Acute Myocardial Infarction (AMI), Stroke/Transient Ischemic Attack, Coronary Artery Bypass Graft Surgery (CABG), Parkinson's Disease, Chronic Obstructive Pulmonary Disease and Bronchiectasis (COPD), Diabetes, Chronic Kidney Disease, Rheumatoid Arthritis/Osteoarthritis (RA/OA), Macular Degeneration, Disability, History of Cancer, Heart Failure, and Acquired Hypothyroidism.

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Appendix C: Utilization of Outpatient Mental Health Services

Documentation and Technical Notes

The following defines the study population, the time frame, and the exclusion and inclusion criteria:

Data Source

- New Jersey Medicare FFS Part A and Part B claims data and denominator file

Reference Time Period

- Annual utilization comparing October 1, 2011 – September 30, 2012 to January 1, 2013 – December 31, 2013
- Annual utilization trend consists of nine points of data with rolling quarters (starting January 1, 2011 and ending December 31, 2013)
- Quarterly utilization trend charts for depression screening contains data from January 1, 2012 to December 31, 2013

Mapping Tool

- QGIS Development Team, 2014, QGIS Geographic Information System. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
- Source: ZIP code boundaries based on the 2013 U.S. Census Tiger Files

Denominator

- Denominator was the sum of all eligible Medicare FFS beneficiaries who were in the CMS denominator file during the measurement time frame
- Eligible beneficiaries were computed after adjusting for total enrolled FFS days divided by the total measurement days in the time frame
- Where Medicare FFS enrolled days > 0

Numerator

Unique Medicare FFS beneficiaries with specific outpatient mental health service claims

Exclusions

- HMO coverage period
- Age <18 or >= 110; Age calculated as end date of time frame or date of death – birth date
- Eligible Medicare FFS days/total measurement days =0

Resources

More information on the definitions and uses of the outpatient mental health services highlighted in this profile can be located at http://www.cmsbilling.org/forms/NHIC_Medicare_B_Mental_Heatlh_billing_guide_2008.pdf.

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The following table shows the CPT/HCPCS codes for the outpatient mental health services:

Mental Health Services	Numerator: CPT/HCPCS Codes
Assessments	
Depression Screening	G0444
Diagnostic Psychological Tests	96101, 96102, 96103, 96105, 96110, 96111
Health and Behavior Assessment/Intervention	96150, 96151, 96152 96153, 96154, 96155
Neuropsychological Tests	96116, 96118, 96119, 96120
Psychiatric Diagnostic Procedures	90801, 90802, 90791, 90792
Therapies	
Individual Psychotherapy	90804, 90805, 90832, 90833, 90806, 90807, 9083490836, 90808, 90809, 90810, 90811, 90812, 90813, 90814, 90815, 90816, 90817, 90818, 90819, 90821, 90822, 90823, 90824, 90826, 90827, 90828, 90829, 90837, 90838, 90839, 90840
Family Psychotherapy	90846, 90847
Group Psychotherapy	90849, 90853, 90857
Electroconvulsive Therapy	90870
Biofeedback Therapy	90901, 90911

APPENDIX D: UTILIZATION OF SERVICES – INPATIENT AND OTHER SETTINGS

Documentation and Technical Notes

The following defines the study population, the time frame, and the exclusion and inclusion criteria:

Data Source

New Jersey Medicare FFS Part A claims data and denominator file

Reference Time Period

- Annual utilization comparing October 1, 2011 – September 30, 2012 to January 1, 2013 – December 31, 2013
- Annual utilization trend consists of nine points of data with rolling quarters (starting January 1, 2011 and ending December 31, 2013)

Denominator

- Denominator was the sum of all eligible Medicare FFS beneficiaries who were in the CMS denominator file during the measurement time frame
- Eligible beneficiaries were computed after adjusting for total enrolled FFS days divided by the total measurement days in the time frame
- Where Medicare FFS enrolled days > 0

Exclusions

- HMO coverage period
- Age <18 or >= 110; Age calculated as end date of time frame or date of death – birth date
- Eligible Medicare FFS days/total measurement days =0

Utilization Measure

Refer to Appendix E.

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Numerator

Utilization Measure Description	Numerator
Acute Care Hospital Admission	Number of inpatient admissions (Nch_clm_type_cd = 60, 61)
30-Day Hospital Readmissions	Number of readmissions that occurred within 30 days of hospital discharge (Nch_clm_type_cd = 60, 61)
Emergency Department Visits	Number of emergency department visits, with subsequent inpatient admission (Nch_clm_type_cd = 60, 61 and revenue code in '0450''0451''0452''0456''0459''0981')
Emergency Department Visits within 30 Days of Hospital Discharge	Number of emergency department visits within 30 days of hospital discharge, with or without subsequent admission (Nch_clm_type_cd = 60, 61, 40 and revenue code in '0450''0451''0452''0456' '0459''0981')
Observation Stays	Number of observation stays, with subsequent inpatient admission (Nch_clm_type_cd = 60, 61 and revenue code in '0762')
Observation Stays within 30 Days of Hospital Discharge	Number of observation stays within 30 days of hospital discharge, with or without subsequent admission (Nch_clm_type_cd = 60, 61, 40 and revenue code in '0762')
Home Health Agency Services	Number of eligible beneficiaries with at least one home health agency claim (Nch_clm_type_cd = 10)
Skilled Nursing Facility Services	Number of eligible beneficiaries with at least one skilled nursing facility claim (Nch_clm_type_cd =20, 30)
Hospice Services	Number of eligible beneficiaries with at least one hospice claim (Nch_clm_type_cd = 50)
Medical Rehabilitation Services	Number of eligible beneficiaries with at least one medical rehabilitation claim (Nch_clm_type_cd = 60, 61 and hsp_id format: xxTxxx or between xx3025 and xx3099)
Psychiatric Hospital Admissions	Number of eligible beneficiaries with at least one psychiatric hospital admission claim (Nch_clm_type_cd = 60, 61 and hsp_id format: xxSxxx or between xx4000 and xx4499)

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APPENDIX E: TIME FRAMES AND FORMULAE

Time Frames	
Quarters	**Dates**
Q1	January 1 to March 31
Q2	April 1 to June 30
Q3	July 1 to September 30
Q4	October 1 to December 31

Formulae

Incidence = $\dfrac{\text{(Number of unique beneficiaries with new cases during the time frame, condition not present in the past 12 months)}}{\text{(Total unique beneficiaries in the population during the time frame)}}$

Prevalence = $\dfrac{\text{(Number of unique beneficiaries with the condition during the time frame)}}{\text{(Total unique beneficiaries in the population during the time frame)}}$

Utilization = $\dfrac{\text{(Number of unique beneficiaries or measures with specific service utilization)}}{\text{(Total unique beneficiaries in the population during the time frame)}}$

Relative change = $\dfrac{\text{(Current rate-Former rate)}}{\text{(Former rate)}}$

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APPENDIX F: REFERENCES

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8. Centers for Medicare & Medicaid Services. Mental Health Services Billing Guide, April 2013. Hingham (MA): NHIC, Corp. Apr 2013. 40 p.

APPENDIX G: PROVIDER SUMMARY TABLES AND PROVIDER LISTINGS

The following defines the data source and time period for the provider summary tables and listings:

Data Source

New Jersey Medicare Part A and Part B FFS claims data

Reference Time Period

Provider summary tables were based on Pre-Sandy time frame (Q1 2011-Q3 2012)

Mapping Tool

ArcGIS Explorer Online. ArcGIS® software by Esri. www.esri.com

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Professional Type by Behavioral Health Services

he following defines the data source and time period for the provider summary tables and listings:

Data Source

New Jersey Medicare FFS Part B claims data

Reference Time Period

- Professional type of behavioral health service claims during October 1, 2011 – September 30, 2012 and January 1, 2013 – December 31, 2013

Professional Type Credentials

- Physicians: DO, MD
- Psychologists: PhD, PsyD, EdD
- Social Workers: MSW, LCSW
- Nurses: APN, RN, NP
- Others: Other

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