The Geriatric Mental Health Alliance of New York

GERIATRIC MENTAL HEALTH

Demographic and Epidemiological Data

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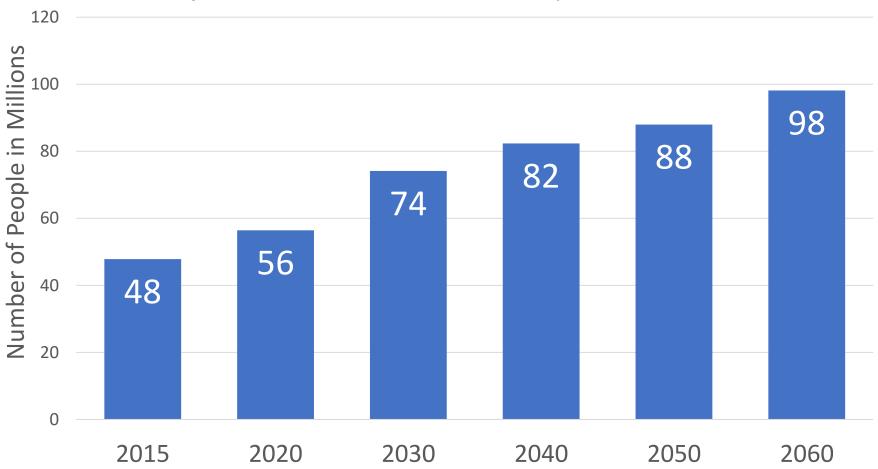
WHO WE ARE

- The Geriatric Mental Health Alliance of New York is an advocacy and educational organization created in 2004 to address the mental health challenges of the elder boom.
- It is made up of over 2,500 mental health, health, and aging service professionals and providers, researchers, academic leaders, consumers, older adults, advocates, family members, and public officials.
- ❖ The goal of the Alliance is to advocate for changes in policy and practice (1) to enhance access to quality care and treatment for older adults with diagnosable mental and/or substance use disorders and (2) to promote psychological well-being in old age.
- This data book provides background information useful for making meaningful improvements in geriatric mental health policy.

Demographics

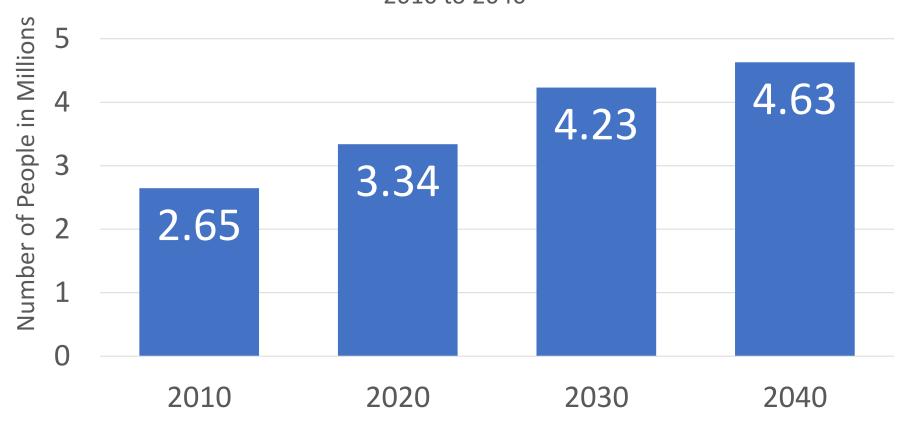
Nationally, The Number of Older Adults Will More Than Double Between 2015 and 2060

Projected Growth of 65 and Older Population: 2015 to 2060



In NYS, The Number of Older Adults Will Increase About 75% from 2010 to 2040

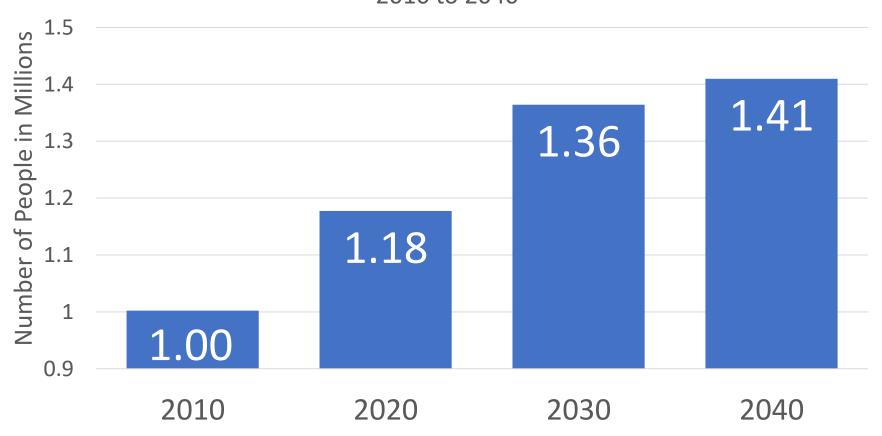
Projected Growth of 65 and Over Population in New York State: 2010 to 2040



Source: New York State Office for the Aging (2011) County Data Book Selected Characteristics. Retrieved from https://aging.ny.gov/ReportsAndData/CountyDataBooks/Combined%20County%20Data%20Book/Combined.pdf

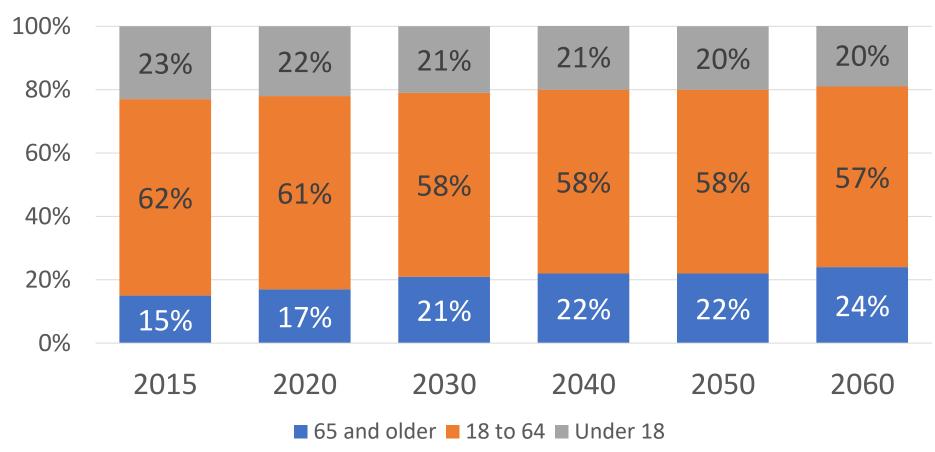
In NYC, The Number of Older Adults Will Increase Over 40% From 2010 to 2040

Projected Growth of 65 and Over Population in New York City: 2010 to 2040



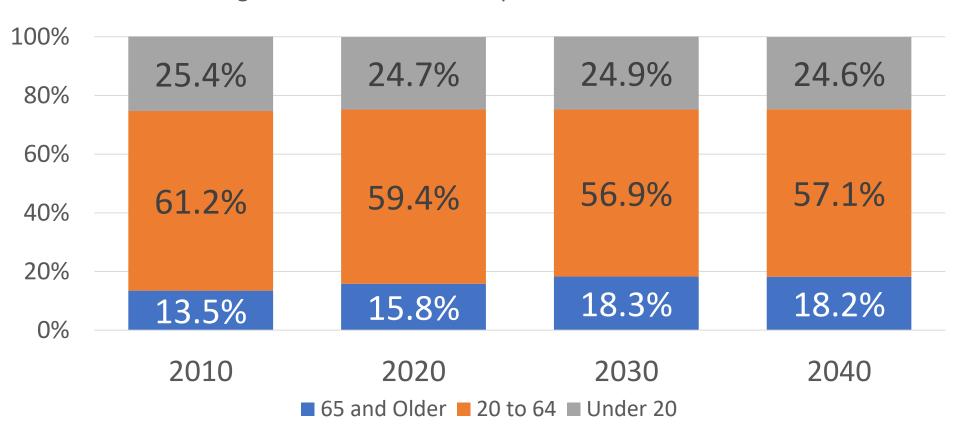
Nationally, Older Adults Will Increase From 15% of the US Population to 24%, Exceeding the Population of Children Under 18, While Working Age Adults Will Decrease 5%

Age Distribution of the Population: 2015 to 2060



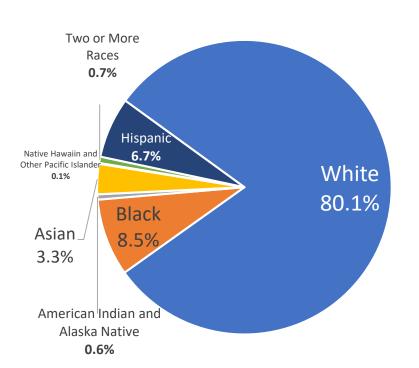
Over the Next 25 Years, Older Adults Will Increase From 13.5% to 18.2% of The Population of NYS, While Working Age Adults Will Decrease by 4%

Age Distribution of the Population: 2010 to 2040

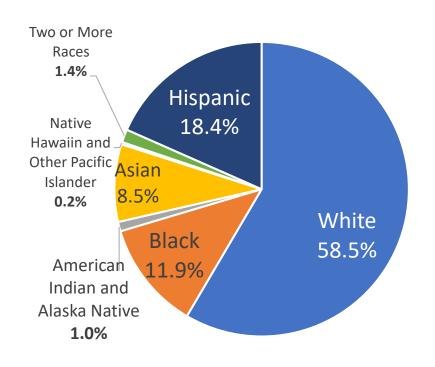


From 2010 to 2050, The Minority Portion of the American Population of Older Adults Will Increase from 20% to 40%

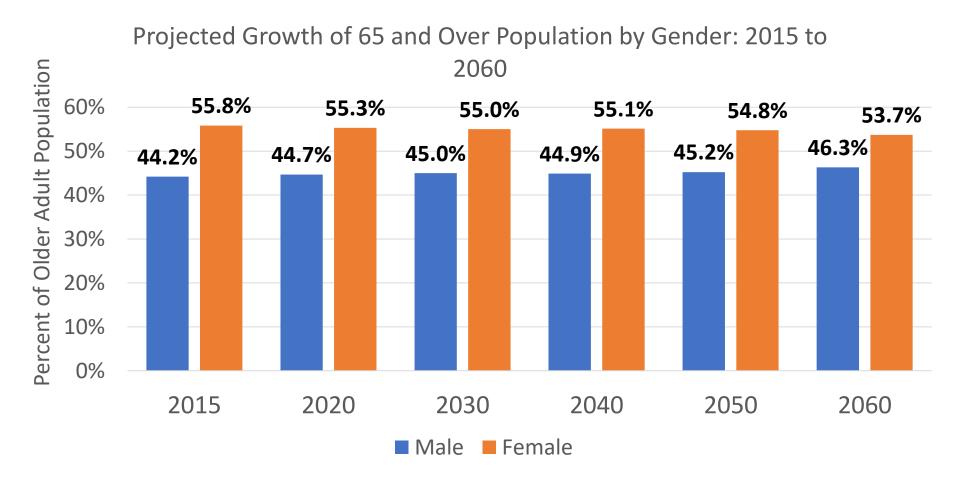
The 65 and Over Population by Race: 2010



The 65 and Over Population by Race: 2050

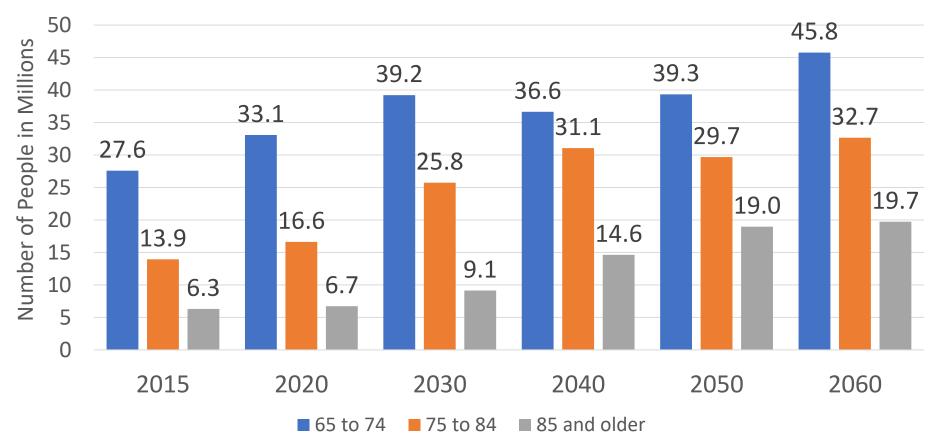


Nationally, Older Women Will Continue to Outnumber Older Men



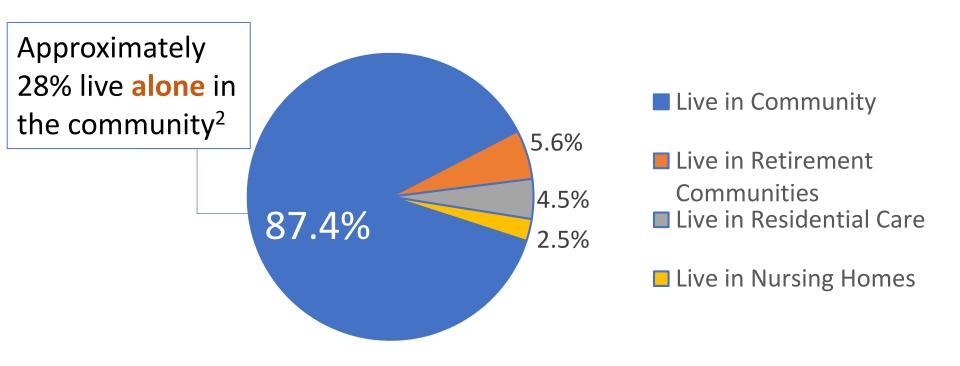
The Number of Older Adults 85+ Will More than Triple, But Those 65 to 74 Will Continue to Be The Largest Portion of Older Adults

Projected Growth of Older Population by Age Cohort: 2015 to 2060



The Vast Majority Of Older Adults Live In the Community

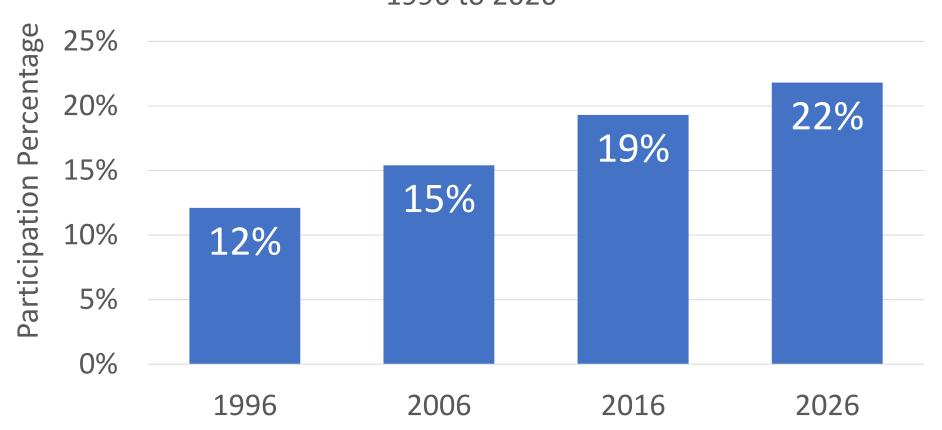
Living Arrangements of 65 and Over Population: 2016¹



¹ Freedman Vicki A., and Spillman, Brenda C. (2016). Making National Estimates with the National Health and Aging Trends Study. NHATS Technical Paper #17. Johns Hopkins University School of Public Health. Retrieved from: https://www.nhats.org/scripts/documents/Making National Population Estimates in NHATS Technical Paper.pdf
² U.S. Department of Health and Human Services. (2014, June). 65+ in the United States: 2010. Retrieved from

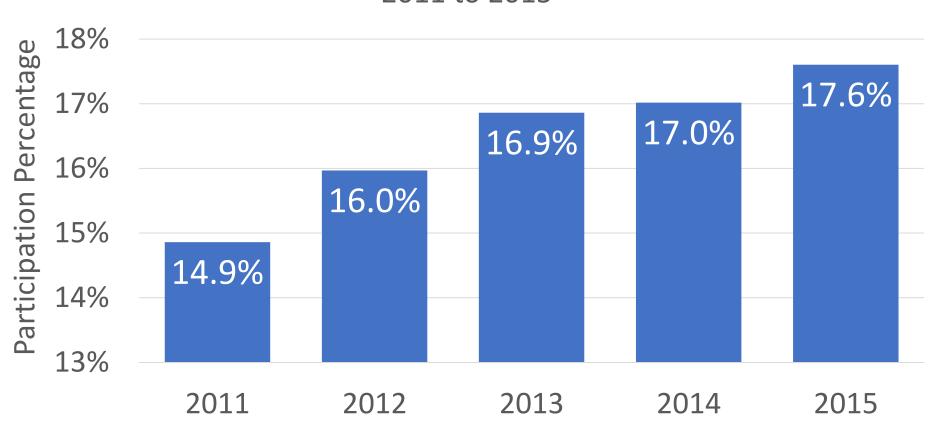
The Percentage of Working Older Adults Will Continue to Increase

Labor Force Participation of 65 and Over Population: 1996 to 2026



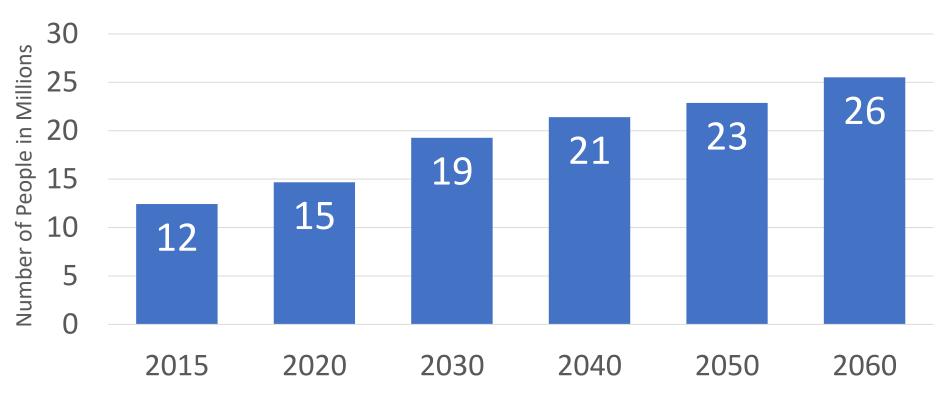
The Percentage of Volunteering Older Adults Will Continue to Increase

Volunteering Participation of 65 and Over Population: 2011 to 2015



The Number of Older Adults with Disabilities Who Need Help With Daily Activities Will More Than Double

Projected Growth of 65 and Over Population with Need for Assistance: 2015 to 2060



Family Caregivers Provide Most Care for Older Adults With Disabilities

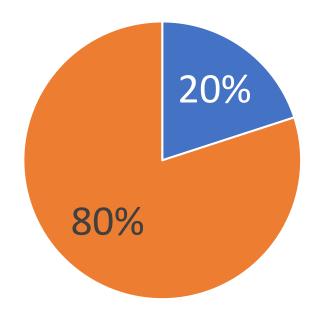
- Informal caregivers provide up to 90% of long-term care for adults.¹
- In 2014, the national economic value of informal caregiving for older adults was estimated to be over \$522 billion annually.²
- In 2016, the average out-of-pocket spending for family caregivers was \$5,531 per year. It was even higher for long-distance caregivers, costing \$8,728 per year. ³

¹Adelman, R. D., Tmanova, L. L., Delgado, D., Dion, S., & Lachs, M. S. (2014). Caregiver Burden. *JAMA, 311*(10), 1052. doi:10.1001/jama.2014.304 ²Chari, A. V., Engberg, J., Ray, K. N., & Mehrotra, A. (2014). The Opportunity Costs of Informal Elder-Care in the United States: New Estimates from the American Time Use Survey. *Health Services Research, 50*(3), 871-882. Retrieved from https://www.rand.org/pubs/external_publications/EP66196.html

Prevalence Of Behavioral Health Disorders Among Older Adults

Approximately 20% of Older Adults Have a Diagnosable Mental and/or Substance Use Disorder

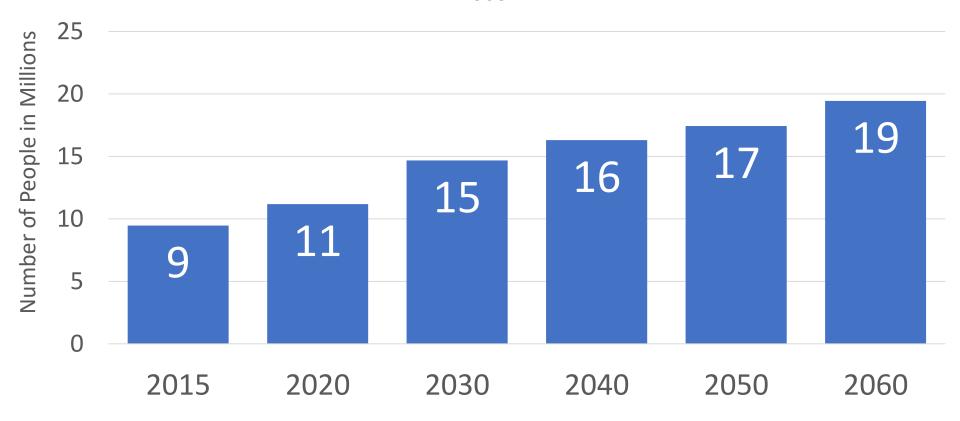
Proportion of Older Adults with Mental and/or Substance Use Disorder vs Older Adults without Mental and/or Substance Use Disorder



- Older Aduts with Mental and/or Substance Use Disorder
- Older Aduts without Mental and/or Substance Use Disorder

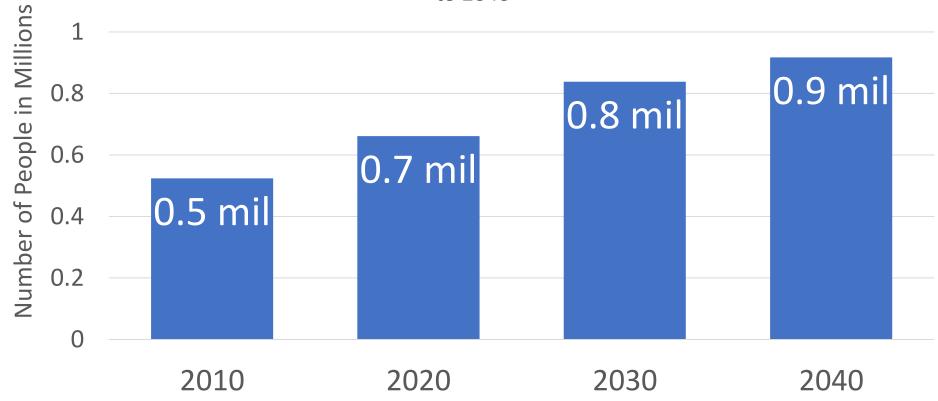
Nationally, The Number of Older Adults With Mental Illness Will More Than Double Between 2015 and 2060

Projected Growth of 65 and Over Population with Mental Illness: 2015 to 2060



In NYS, The Number of Older Adults With Mental Illness Will Increase About 80% from 2010 to 2040

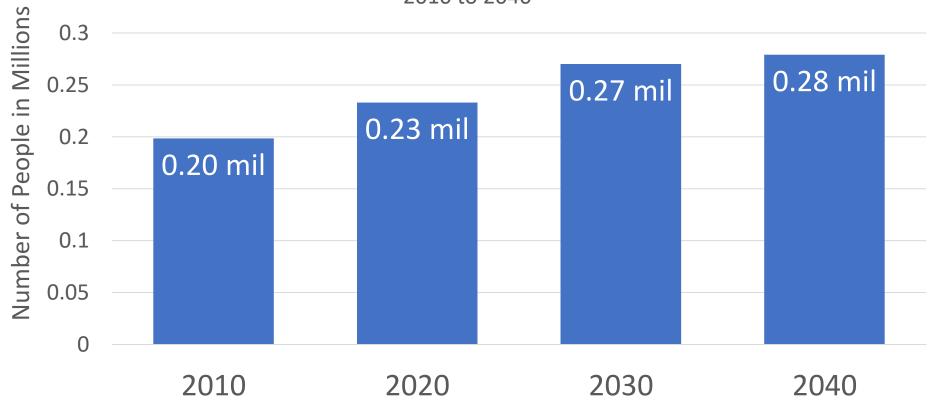
Projected Growth of 65 and Over Population with Mental Illness in NYS: 2010 to 2040



Source: New York State Office for the Aging (2011) County Data Book Selected Characteristics. Retrieved from https://aging.ny.gov/ReportsAndData/CountyDataBooks/Combined%20County%20Data%20Book/Combined.pdf

In NYC, The Number of Older Adults With Mental Illness Will Increase 40% From 2010 to 2040

Projected Growth of 65 and Over Population with Mental Illness in NYC: 2010 to 2040



Source: Department of City Planning (2013) New York City Population Projections by Age/Sex & Borough, 2010-2040. Retrieved from https://www.census.gov/data/tables/2012/demo/popproj/2012-summary-tables.html

Older Adults With Mental Health Problems Are a Heterogeneous Population

- Long-term psychiatric disabilities
- Late-life psychotic conditions
- Severe anxiety and depression
- Mild or moderate anxiety and mood disorders
- Substance use problems: lifelong and late life
 - Especially misuse of alcohol, prescription drugs and over-the-counter medication
- Dementia
- Emotional challenges related to aging

The Types Of Mental Illnesses Experienced By Older Adults Are Somewhat Different From Those Experienced By Younger Adults

Adults 18 - 59

Older Adults 60+

Any Disorder	21%
Any Anxiety Disorder	16.4%
Any Major Mood Disorder*	7.1%
Schizophrenia	1.3%
Severe Cognitive Impairment	1.2%
Anti-social Personality	2.1%

Any Disorder	19.8%
Any Anxiety Disorder	11.4%
Any Major Mood Disorder*	4.4%
Schizophrenia	0.6%
Severe Cognitive Impairment (Primarily Dementia)	6.6%

^{*} This does not include minor depression. 27% of older adults have symptoms of depression.

NOTE: These figures represent the prevalence of mental disorders in a 1-year period.

NOTE: The percentages do not add up to 100% due to co-occurring disorders.

Source: U.S. Department of Health and Human Services, Mental Health: A Report of the Surgeon General (Rockville, MD: 1999).

Depression Is Not Normal In Old Age

- Contrary to common belief, major depressive disorder (MDD) is less common in older adults than in younger adults.¹
- However, older adults are more likely to experience symptoms of depression.²
- Risk of depression is highest for older adults with chronic medical conditions (e.g., 25% for stroke patients, 15% for diabetic patients, and 25% for heart disease patients).³ Older adults who are medical outpatients/inpatients or residents of long term care facilities are also at significantly higher risk for depression. (Estimates range from 10% 12%, and 14% 42%, respectively).³
- People with depression and a physical disorder are twice as likely to experience preventable hospitalization³ and to experience premature disability and/or mortality.

¹ Byers, A. L., Yaffe, K., Covinsky, K. E., Friedman, M. B., & Bruce, M. L. (2010). High Occurrence of Mood and Anxiety Disorders among Older Adults: The National Comorbidity Survey Replication. *Archives of General Psychiatry*, *67*(5), 489–496. http://doi.org/10.1001/archgenpsychiatry.2010.35

² Himelhoch, S., Weller, W. E., Wu, A. W., Anderson, G. F., & Cooper, L. A. (2004). Chronic Medical Illness, Depression, and Use of Acute Medical Services Among Medicare Beneficiaries. *Medical Care*, *42*(6), 512-521. doi:10.1097/01.mlr.0000127998.89246.ef

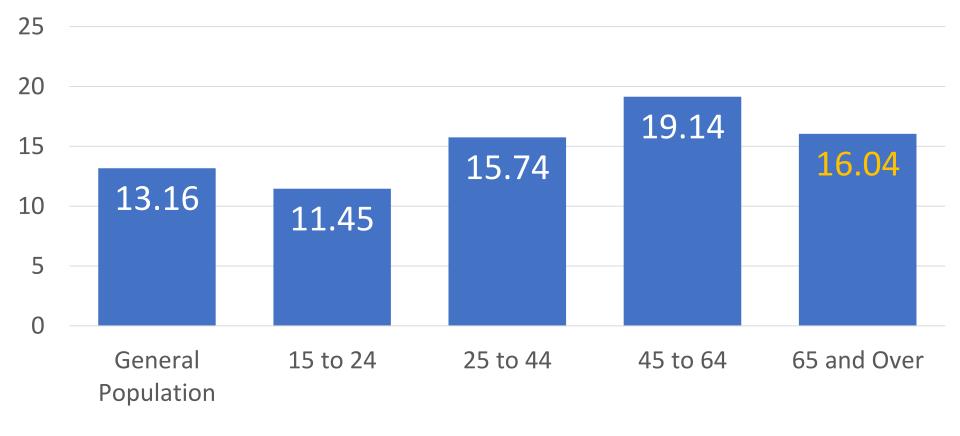
Major Anxiety and Mood Disorders Have Serious Consequences

Anxiety and Mood Disorders contribute to:

- Social isolation
- Rejection of help
- Excessive placement in nursing homes
- High rates of suicide

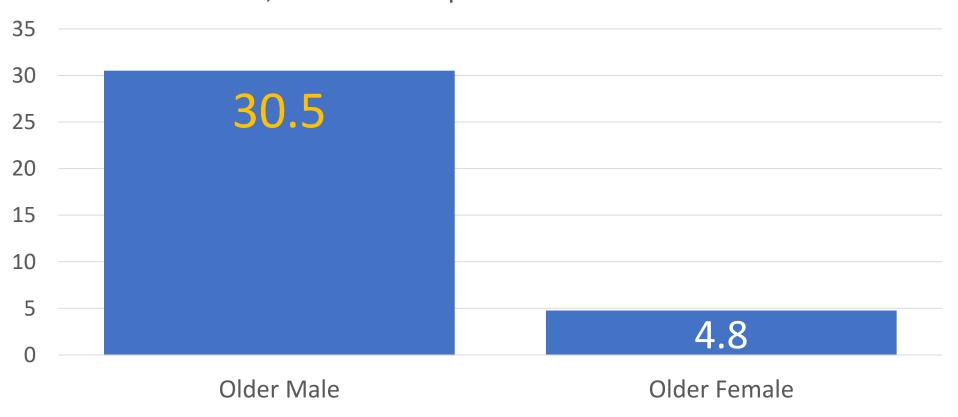
From 2011 to 2015, the Rate Of Suicide For Adults 65 and Older Was Over 20% Higher Than the Rate for the General Population

Suicide Rates by Age Cohort per 100,000 of the Population: 2011 to 2015



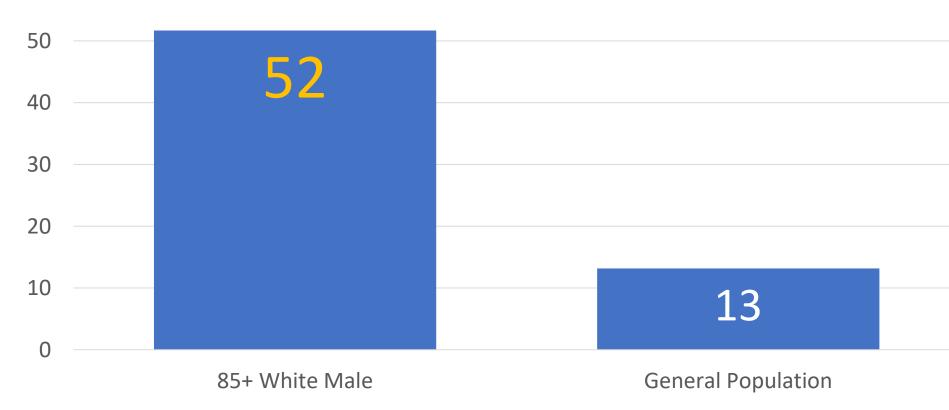
Older Men Are Much More Likely Than Women To Complete Suicide

Suicide Rates Among People 65 and Over by Gender per 100,000 of the Population: 2011 to 2015



From 2011 to 2015, The Rate of Suicide For White Men 85 And Older Was 4 Times The General Population

Suicide Rates Among White Males 85 and Over vs. General Population per 100,000: 2011 to 2015



The Prevalence of Schizophrenia Declines From About 1% to 0.5% In Old Age¹

Due to:

- Recovery/Remission of symptoms over time¹
- Lower life expectancy (10-25 years shorter than general population)²
 - Smoking, Obesity, Diabetes, Heart Disease, Pulmonary Disease
 - Limited Access to Quality Health Care
 - Suicide (8.5 times the rate of general population)³
 - High rates of crime victimization⁴

¹ Bartels, S. J. (2004). Caring for the Whole Person: Integrated Health Care for Older Adults with Severe Mental Illness and Medical Comorbidity. *Journal of the American Geriatrics Society, 52*. doi:10.1111/j.1532-5415.2004.52601.x

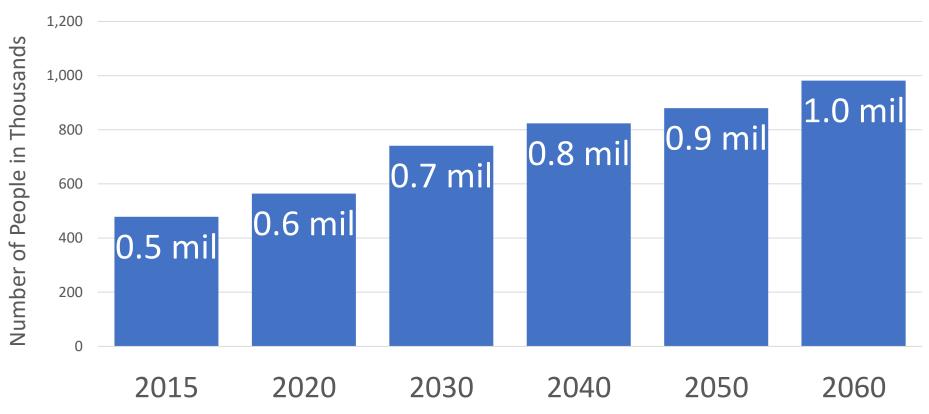
² Yasami, M. T., Cross, A., McDaniell, E., & Saxena, S. (2014). LIVING A HEALTHY LIFE WITH SCHIZOPHRENIA: PAVING THE ROAD TO RECOVERY. World Mental Health Day 2014 Living with Schizophrenia, 32-36. Retrieved from http://www.who.int/mental_health/world-mental-health-day/paper_wfmh.pdf

³ Pompili, M., Amador, X. F., Girardi, P., Harkavy-Friedman, J., Harrow, M., Kaplan, K., . . . Tatarelli, R. (2007). Suicide risk in schizophrenia: Learning from the past to change the future. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1845151/

⁴ Newman, J. M., Turnbull, A., Berman, B. A., Rodrigues, S., & Serper, M. R. (2010). Impact of Traumatic and Violent Victimization Experiences in Individuals With Schizophrenia and Schizoaffective Disorder. *The Journal of Nervous and Mental Disease*, 198(10), 708-714. doi:10.1097/nmd.0b013e3181f49bf1

Number of Older Adults With Psychotic Conditions Will More Than Double From About 500,000 in 2015 To 1 Million In 2060



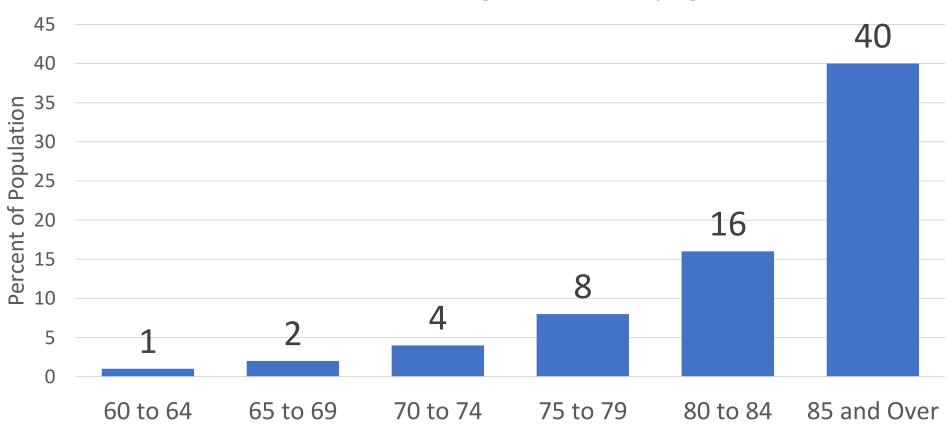


Co-Occurrence of Psychotic Disorders And Other Physical and Mental Disorders Increases With Age Resulting in Increased Service Needs

- Co- Occurring Disorders Include
 - Chronic Physical Illnesses
 - Dementia
 - Mood and Anxiety Disorders
- Increased Service Needs Include
 - More accessible housing
 - More community-based long-term care assistance
 - Increased integration of physical and behavioral health care
 - Improved oversight of multiple medications
 - Increased attention to engagement in social and recreational activities

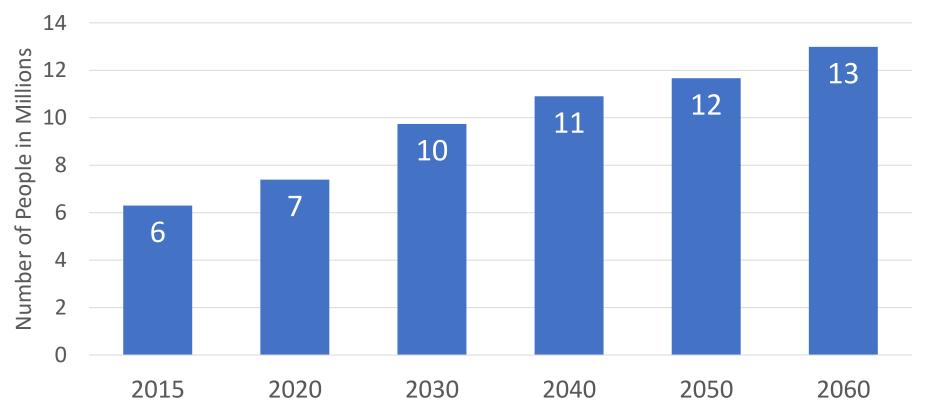
The Prevalence Of Dementia Doubles Every Five Years After The Age Of 60

Prevalence of Dementia Among Older Adults by Age Cohort



Nationally, Adults 71+ With Dementia* Will Double Unless There is a Breakthrough in Prevention or Treatment





^{*}This projection includes dementia of all types

Mental Illness Is Highly Prevalent In Nursing Homes And Assisted Living Facilities¹

Nursing Homes

- CMS data show 46% of nursing home residents in NYS have dementia, often with emotional and behavioral complications. 35% are clinically depressed. 17% have other psychiatric diagnoses. And 23% have behavior problems associated with mental illness.²
- These estimates may be low- other estimates suggest as many as 68% of nursing home residents have some mental illness.³
- 16.4% of nursing home residents have a primary diagnosis of mental illness.⁴ Many more have a mental illness as a secondary diagnosis.
- Nationally, there are approximately 43,000 people diagnosed with schizophrenia in nursing homes.⁴
- Assisted Living Facilities
 - 67.7% of those in assisted living have some dementia.⁵
 - 23.3% have some other mental illness.⁵

¹ Seitz, D., Purandare, N., & Conn, D. (2010). Prevalence of psychiatric disorders among older adults in long-term care homes: A systematic review. *International Psychogeriatrics*, 22(07), 1025-1039. doi:10.1017/s1041610210000608

² Center for Medicare and Medicaid Services. (2007). CMS OSCAR data current surveys: Medical condition-mental status. Retrieved from: http://www.ahcancal.org/research_data/oscar_data/NursingFacilityPatientCharacteristics/MC_mental_status_Jun2007.pdf
³ Mechanic and McAlpine. "Use of Nursing Homes in the Care of Persons With Severe Mental Illness: 1985 to 1995." Retrieved from:

http://ps.psychiatryonline.org/cgi/reprint/51/3/354

⁴CDC: 2004 National Nursing Home Survey Retrieved from: http://www.cdc.gov/nchs/data/nnhsd/Estimates/nnhs/Estimates_Diagnoses_Tables.pdf#Table38
For Rosenblatt et. al. "The Maryland Assisted Living Study: Prevalence, Recognition, and Treatment of Dementia and Other Psychiatric Disorders in the Assisted Living Population of Central Maryland." Retrieved from: http://www.hopkinsmedicine.org/Press_releases/2004/10 04c 04.html

Approximately 17% of Older Adults Aged 50+ Have Problems With Alcohol and Other Substances¹

- The number of older adults who engage in high-risk drinking rose to 12.6% in 2013.²
- 1.2% of older adults misuse, abuse, or become addicted to opioids in a given year; 0.4% of older adults misuse sedatives in a given year.³
- In the current generation of older adults 65 and older, about 5% use illegal substances in a given year, mostly marijuana. Approximately 15% of young older adults (aged 55-59) use illegal substances in a given year.³
- It is likely that use of currently illegal drugs will grow due to the relatively higher drug use rates of the baby boomer population.¹

¹ Wu, L. T., & Blazer, D. G. (2011). Illicit and nonmedical drug use among older adults: A review. *Journal of Aging and Health, 23*(3), 481–504. doi:10.1177/0898264310386224 Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3097242

²Grant, B. F., Chou, S. P., Saha, T. D., Pickering, R. P., Kerridge, B. T., Ruan, W. J., . . . Hasin, D. S. (2017). Prevalence of 12-Month Alcohol Use, High-Risk Drinking, and DSM-IV Alcohol Use Disorder in the United States, 2001-2002 to 2012-2013. *JAMA Psychiatry*, 74(9), 911. doi:10.1001/jamapsychiatry.2017.2161

³Substance Abuse and Mental Health Services Administration Center for Behavioral Health Statistics and Quality. (2017, September 7). RESULTS FROM THE 2016

NATIONAL SURVEY ON DRUG USE AND HEALTH: DETAILED TABLES. Retrieved from https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2016/NSDUH-DetTabs-2016/NSDUH-DetTabs-2016.pdf

For Older Adults With Mental Disorders, Co-occurring Physical Disorders Are Virtually Universal

- Older adults with anxiety disorders are at higher risk for chronic conditions such as arthritis, back pain, migraines, allergies, and cataracts.¹
- Older adults with depression are at higher risk for digestive, respiratory, and heart disorders.²
- Depression is especially prevalent in older adults with cardiovascular disease (25%), diabetes (15%), and those recovering from stroke (25%).⁵
- 14% of Medicare recipients utilizing home health care services in Westchester and New York City suffer from major depression.⁶

⁶ Bruce, M.L. (2002). Major depression in elderly home care patients. *American Journal of Psychiatry*, 159, 1367-1374.

Co-occurring Mental And Physical Disorders (Continued)

- Older schizophrenic, schizoaffective, and bipolar patients are more likely to be diagnosed with cardiovascular and pulmonary conditions than younger patients and have a greater burden of medical comorbidity overall.¹
- People with serious mental illnesses are at high risk for obesity, hypertension, diabetes, and cardiac and respiratory problems.
- Psychiatric disturbances affect as many as 90% of patients with dementia.²

¹ Kilbourne, A.M., Cornelius, J.R., Han, X., Hass, G.L., Salloum, I., Conigliaro, J., Pinous, H.A. (2005). *General-medical conditions in older patients with serious mental illness*. American Journal of Geriatric Psychiatry, 13 (3), 250-254.

² Lyketsos, C.G. Toone, L., Tschanz, J., Rabins, P., Steinberg, M., Onvike, C., Corcoran, C., Norton, M., Zandi, P., Breitner, J. (2005). *Population-Based Study of Medical Comorbidity in Early Dementia and "Cognitive Impairment, No Dementia (CIND)" Association With Functional and Cognitive Impairment: The Cache County Study*, American Journal of Geriatric Psychiatry, Vol 13(8), p 656–664.

Co-occurring Mental Disorders Contribute To Higher Rates of Disability and Premature Mortality

- People with depression as well as serious physical illness are at higher risk for disability and premature death.
 - For example, depressed older adults have high rates of cardiovascular mortality.
- In addition the costs of medical care increase as much as 100%.

Aging Well Is Possible And Not Unusual, But There Are Major Developmental Challenges That Can Result In Emotional Upheaval

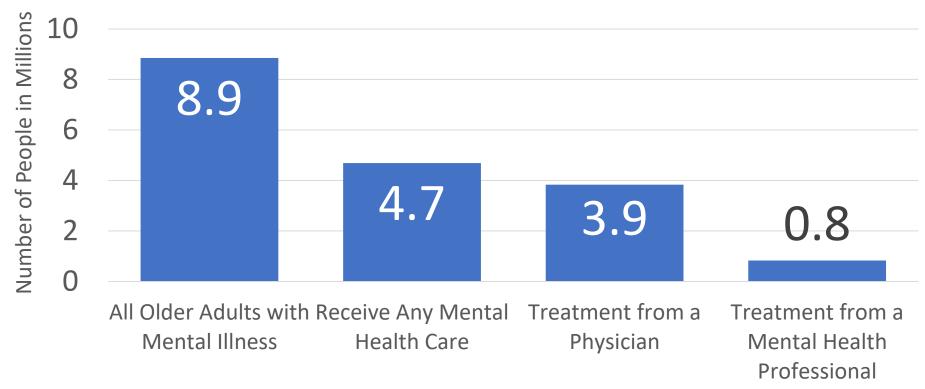
- Retirement and other role changes
- Diminishing physical and mental capabilities
- Chronic physical disorders and pain
- Coming to terms with disability and dependency
- Loss of family and friends
- Social isolation and inactivity
- Coming to terms with mortality

Treatment of Behavioral Disorders

Nationally, About Half of Older Adults With Behavioral Disorders Get Treatment.

Most From Primary Care Physicians. Only 9.4% From Mental Health Professionals.

Treatment for Mental Illness Among Older Adults: 2015



Most Older Adults With Mental Illnesses Do Not Get Minimally Adequate Mental Health Services

- Treatment by primary care physicians is minimally adequate only 12.7% of the time.¹
- Treatment by mental health professionals is minimally adequate more often but only 48.3% of the time.¹
- Older adults are less likely to get health care in mental health specialty settings than other age groups.¹
- In-home service providers, such as home health aides, are rarely trained to identify, let alone treat, mental disorders.
- Community service providers in senior centers, adult day care, etc. are rarely trained in identification or treatment.
- Mental health care in nursing and adult homes is also uneven. Overuse of anti-psychotic medications is common and dangerous.

People With Long-term Psychiatric Disabilities Get Limited Physical Health Care

- People with severe mental disorders are less likely to receive standard levels of care for physical ailments.¹
- There are many barriers to receiving health care for older adults with severe mental illness including:²
 - Lack of integration of mental and physical health care services
 - Physician discomfort in treating people with severe mental illness
 - Socioeconomic disadvantage
 - Cognitive limitations or lack of knowledge about how and when to access care
 - Lack of motivation

¹ Hert, M. D., Correll, C. U., Bobes, J., Cetkovich-Bakmas, M., Cohen, D., Asai, I., . . . Leucht, S. (2011). Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. *World Psychiatry*, 10(1), 52-77. doi:10.1002/j.2051-5545.2011.tb00014.x

² Hert, M. D., Cohen, D., Bobes, J., Cetkovich-Bakmas, M., Leucht, S., Ndetei, D. M., . . . Correll, C. U. (2011). Physical illness in patients with severe mental disorders. II. Barriers to care, monitoring and treatment guidelines, plus recommendations at the system and individual level. *World Psychiatry*, *10*(2), 138-151. doi:10.1002/j.2051-5545.2011.tb00036.x

Primary Care Physicians Often Fail To Identify Or Treat Mental Illness In Older Adults

- Almost 90% of older adults with depression get no treatment or inadequate treatment in a primary care setting¹
- Older adults who meet diagnostic criteria for mental illness are less likely than young or middle-aged patients to receive specialty mental health care or to be referred from primary care to specialists.²
- 50-70% of older adults who complete suicide have seen their primary care physician within 30 days.³

¹ O'Neill, G., Patrick, M. (2002). State of aging and health in America. Merck Institute of Aging & Health, Washington, D.C. and Gerontological Society of America, Washington, D.C.

² Klap, R., Unroe, K.T., Unutzer, J. (2003). Caring for mental illness in the United States: A focus on older adults. *Am J Geriatr Psychiatry* 11 (5), 517-524.

³ Luoma, J., Martin, C., & Pearson J. (2002). Contact with mental health and primary care providers before suicide: A review of the evidence. *Am J Psychiatry*. 159 (6), 909-916.

There Are Too Few Geriatric Mental Health Professionals

About **697** Older Adults per **1** Geriatric Social Worker

About **5,369** Older Adults per **1** Geriatrician

About 13,117 Older Adults per 1 Geriatric Psychiatrist

Sources Of Funding For Mental Health Services For Older Adults

- **Medicare** Almost all older adults have limited coverage for inpatient and outpatient mental health services and for prescription drugs.
- Medigap Supplemental policies that provide additional coverage at varying prices depending extent of coverage.
- **Medicaid** Covers poor older adults not eligible for Medicare and provides supplemental coverage for poor older adults with Medicare.
- In Addition to Medicaid, New York State Can Provide Funding for:
 - Mental health grants and contracts
 - Prescription drugs (EPIC)
 - Fully Integrated Duals Advantage (FIDA)
- In Addition to Medicaid and Medicare, the Federal Government Provides Funding for:
 - Research
 - Training
 - Very Limited Services
- Private Insurance Variable coverage depending on benefit plan
- **Self-Pay** Some older adults pay out-of pocket for mental health services

References

- Adelman, R. D., Tmanova, L. L., Delgado, D., Dion, S., & Lachs, M. S. (2014). Caregiver Burden. Jama, 311(10), 1052. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/24618967
- Bartels, S. J. (2004). Caring for the Whole Person: Integrated Health Care for Older Adults with Severe Mental Illness and Medical Comorbidity. Journal of the American Geriatrics Society, 52. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1532-5415.2004.52601.x/abstract
- Bruce, M.L. (2002). Major depression in elderly home care patients. American Journal of Psychiatry, 159, 1367-1374.
- Byers, A. L., Yaffe, K., Covinsky, K. E., Friedman, M. B., & Bruce, M. L. (2010). High Occurrence of Mood and Anxiety Disorders Among Older Adults. Archives of General Psychiatry, 67(5), 489. Retrieved from https://jamanetwork.com/journals/jamapsychiatry/fullarticle/210776.
- Center for Medicare and Medicaid Services. (2007). CMS OSCAR data current surveys: Medical condition-mental status. Retrieved from: http://www.ahcancal.org/research_data/oscar_data/NursingFacilityPatientCharacteristics/MC_mental_status_Jun2007.pdf
- Centers for Disease Control and Prevention. (2017, February 19). WISQARS Fatal Injury Reports. Retrieved from https://webappa.cdc.gov/sasweb/ncipc/mortrate.html
- CDC: 2004 National Nursing Home Survey Retrieved from: http://www.cdc.gov/nchs/data/nnhsd/Estimates/nnhs/Estimates_Diagnoses_Tables.pdf#Table38
- Chari, A. V., Engberg, J., Ray, K., & Mehrotra, A. (2014, January 01). Cost of Informal Caregiving for U.S. Elderly Is \$522 Billion Annually. Retrieved from https://www.rand.org/pubs/external_publications/EP66196.html
- Cornell Population Center. (2011). New York State Projection Data by County. Retrieved from https://pad.human.cornell.edu/counties/projections.cfm
- Department of City Planning. (2013). New York City Population Projections by Age/Sex & Borough, 2010-2040. Retrieved from https://www.census.gov/data/tables/2012/demo/popproj/2012-summary-tables.html
- Eden, J., Maslow, K., Le, M., & Blazer, D. (2012). The Mental Health and Substance Use Workforce for Older Adults: In Whose Hands? Retrieved from http://www.aagponline.org/clientuploads/IOM%20July%202012%20Report%20Full.pdf

- El-Gabalawy, R., Mackenzie, C. S., Shooshtari, S., & Sareen, J. (2011). Comorbid physical health conditions and anxiety disorders: A population-based exploration of prevalence and health outcomes among older adults. General Hospital Psychiatry, 33(6), 556-564. doi:10.1016/j.genhosppsych.2011.07.005
- Fiske, A., Wetherell, J. L., & Gatz, M. (2009). Depression in Older Adults. Annual Review of Clinical Psychology, 5(1), 363-389. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/19327033
- Freedman, V. A., & Spillman, B. C. (2016). Making National Estimates with the National Health and Aging Trends Study. Retrieved from https://www.nhats.org/scripts/documents/Making National Population Estimates in NHATS Technical Paper.pdf+
- Grant, B. F., Chou, S. P., Saha, T. D., Pickering, R. P., Kerridge, B. T., Ruan, W. J., . . . Hasin, D. S. (2017). Prevalence of 12-Month Alcohol Use, High-Risk Drinking, and DSM-IV Alcohol Use Disorder in the United States, 2001-2002 to 2012-2013. JAMA Psychiatry, 74(9), 911. doi:10.1001/jamapsychiatry.2017.2161
- Hert, M. D., Cohen, D., Bobes, J., Cetkovich-Bakmas, M., Leucht, S., Ndetei, D. M., . . . Correll, C. U. (2011). Physical illness in patients with severe mental disorders. II. Barriers to care, monitoring and treatment guidelines, plus recommendations at the system and individual level. World Psychiatry, 10(2), 138-151. doi:10.1002/j.2051-5545.2011.tb00036.x
- Hert, M. D., Correll, C. U., Bobes, J., Cetkovich-Bakmas, M., Cohen, D., Asai, I., . . . Leucht, S. (2011). Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. *World Psychiatry*, *10*(1), 52-77. doi:10.1002/j.2051-5545.2011.tb00014.x
- Himelhoch, S., Weller, W. E., Wu, A. W., Anderson, G. F., & Cooper, L. A. (2004). Chronic Medical Illness, Depression, and Use of Acute Medical Services Among Medicare Beneficiaries. Medical Care, 42(6), 512-521. Retrieved from http://journals.lww.com/lww-medicalcare/Abstract/2004/06000/Chronic Medical Illness, Depression, and Use of.3.aspx
- Husaini, B,A, et. Al (2000). Prevalence and cost of treating mental disorders among elderly recipients of Medicare services. PsychiatricServices, 51, 1245-1247.
- Hybels, C., Blazer, D., Landerman, L., & Steffens, D. (2011). Heterogeneity in symptom profiles among older adults diagnosed with major depression. International Psychogeriatrics, 24(01), 170. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3139722/.

- Katon, W., Ciechanowski, P. (2002). Impact of major depression on chronic medical illness. Journal of Psychosomatic Research, 53, 859-863.
- Kessler, R. C., & Wang, P. S. (2008). The Descriptive Epidemiology of Commonly Occurring Mental Disorders in the United States. Annual Review of Public Health, 29(1), 115-129. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/18348707.
- Kilbourne, A.M., Cornelius, J.R., Han, X., Hass, G.L., Salloum, I., Conigliaro, J., Pinous, H.A. (2005). General-medical conditions in older patients with serious mental illness. American Journal of Geriatric Psychiatry, 13 (3), 250-254.
- Klap, R., Unroe, K. T., & Unutzer, J. (2003). Caring for Mental Illness in the United States: A Focus on Older Adults. The American Journal of Geriatric Psychiatry, 11(5), 517-524. doi:10.1097/00019442-200309000-00006
- Luoma, J., Martin, C., & Pearson J. (2002). Contact with mental health and primary care providers before suicide: A review of the evidence. Am J Psychiatry. 159 (6), 909-916.
- Lyketsos, C.G. Toone, L., Tschanz, J., Rabins, P., Steinberg, M., Onvike, C., Corcoran, C., Norton, M., Zandi, P., Breitner, J. (2005). Population-Based Study of Medical Comorbidity in Early Dementia and "Cognitive Impairment, No Dementia (CIND)" Association With Functional and Cognitive Impairment: The Cache County Study, American Journal of Geriatric Psychiatry, Vol 13(8), p 656–664.
- McAlpine, D. Patterns of care for persons 65 years and older with schizophrenia. In Cohen, C. (2003). Schizophrenia Into Later Life.
- Mechanic and McAlpine. "Use of Nursing Homes in the Care of Persons With Severe Mental Illness: 1985 to 1995." Retrieved from: http://ps.psychiatryonline.org/cgi/reprint/51/3/354
- Mills, T. L. (2001). Comorbid depressive symptomatology: Isolating the effects of chronic medical conditions on self-reported depressive symptoms among community-dwelling older adults. Social Science & Medicine, 53(5), 569-578. doi:10.1016/s0277-9536(00)00361-0
- National Institute on Alcohol Abuse and Alcoholism (NIAAA). (n.d.). Drinking Levels Defined. Retrieved from https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking
- New York State Office for the Aging. (2011). County Data Book Selected Characteristics. Retrieved from https://aging.ny.gov/ReportsAndData/CountyDataBooks/Combined%20County%20Data%20Book/Combined.pdf
- Newman, J. M., Turnbull, A., Berman, B. A., Rodrigues, S., & Serper, M. R. (2010). Impact of Traumatic and Violent Victimization Experiences in Individuals With Schizophrenia and Schizoaffective Disorder. *The Journal of Nervous and Mental Disease*, 198(10), 708-714. doi:10.1097/nmd.0b013e3181f49bf1

- O'Neill, G., Patrick, M. (2002). State of aging and health in America. Merck Institute of Aging & Health, Washington, D.C. and Gerontological Society of America, Washington, D.C.
- Plassman, B.L., et al. (2007) Prevalence of Dementia in the United States: The Aging, Demographics, and Memory Study. Retrieved from: https://www.karger.com/Article/Pdf/109998
- Pompili, M., Amador, X. F., Girardi, P., Harkavy-Friedman, J., Harrow, M., Kaplan, K., . . . Tatarelli, R. (2007). Suicide risk in schizophrenia: Learning from the past to change the future. Annals of General Psychiatry, 6(1), 10. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1845151/
- Reynolds, K., Pietrzak, R. H., El-Gabalawy, R., Mackenzie, C. S., & Sareen, J. (2015). Prevalence of psychiatric disorders in U.S. older adults: Findings from a nationally representative survey. World Psychiatry, 14(1), 74-81. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/25655161.
- Rosenblatt et. al. "The Maryland Assisted Living Study: Prevalence, Recognition, and Treatment of Dementia and Other Psychiatric Disorders in the Assisted Living Population of Central Maryland." Retrieved from: http://www.hopkinsmedicine.org/Press_releases/2004/10_04c_04.html
- Schulz, R., & Eden, J. (2016, November 08). Families Caring for an Aging America. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK396401
- Seitz, D., Purandare, N., & Conn, D. (2010). Prevalence of psychiatric disorders among older adults in long-term care homes: A systematic review. International Psychogeriatrics, 22(07), 1025-1039. doi:10.1017/s1041610210000608
- Substance Abuse and Mental Health Services Administration Center for Behavioral Health Statistics and Quality. (2017, September 7). RESULTS
 FROM THE 2016 NATIONAL SURVEY ON DRUG USE AND HEALTH: DETAILED TABLES. Retrieved from
 https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2016/NSDUH-DetTabs-2016.pdf
- U.S. Bureau of Labor Statistics. (2016, February 25). Volunteering in the United States News Release. Retrieved from https://www.bls.gov/news.release/volun.htm
- U.S. Bureau of Labor Statistics. (2017). Civilian labor force participation rate by age, sex, race, and ethnicity. Retrieved from https://www.bls.gov/emp/ep table 303.htm
- US Census Bureau. (2014). National Population Projections Tables. Retrieved from https://www2.census.gov/programs-surveys/popproj/tables/2014/2014-summary-tables/np2014-t3.xls

- U.S. Department of Health and Human Services. (1999). Mental Health: A Report of the Surgeon General. Retrieved from https://profiles.nlm.nih.gov/ps/access/NNBBHS.pdf
- Vincent, G. K., & Velkoff, V. A. (2010). THE NEXT FOUR DECADES The Older Population in the United States: 2010 to 2050. Retrieved from https://www.census.gov/prod/2010pubs/p25-1138.pdf
- Wang, P.S., Lane, M. Olfson, M., Pincus, H.A., Wells, K., Kessler, R.C. (2005). Twelve-month use of mental health services in the U.S. Archives of General Psychiatry, 62, 629-640.
- West, L. A., Cole, S., Goodkind, D., & He, W. (2014). 65+ in the United States 2010. Retrieved from https://www.census.gov/content/dam/Census/library/publications/2014/demo/p23-212.pdf
- Wolitzky-Taylor, K. B., Castriotta, N., Lenze, E. J., Stanley, M. A., & Craske, M. G. (2010). Anxiety disorders in older adults: A comprehensive review. Depression and Anxiety, 27(2), 190-211. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/20099273.
- Wu, L. T., & Blazer, D. G. (2011). Illicit and nonmedical drug use among older adults: A review. *Journal of Aging and Health, 23*(3), 481–504. doi:10.1177/0898264310386224 Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3097242
- Yasami, M. T., Cross, A., McDaniell, E., & Saxena, S. (2014). LIVING A HEALTHY LIFE WITH SCHIZOPHRENIA: PAVING THE ROAD TO
 RECOVERY. World Mental Health Day 2014 Living with Schizophrenia, 32-36. Retrieved from http://www.who.int/mental_health/world-mental-health-day/paper_wfmh.pdf