New York State Department of Health
Office of Quality and Patient Safety
Center for Applied Research and Evaluation

NEW YORK STATE | Department of Health

HIGHLIGHTS

Statistical Brief #3
March 2023

Characteristics of New Managed Long-Term Care Members with and without COVID-19 Infection Prior to Enrollment, April 1, 2020 – March 31, 2021

Kristi Roods, MPH; Kamalnain Siag, MPH; Sandra Richardson, MS, RN; Raina Josberger, MS

Introduction

The New York State (NYS) Managed Long-Term Care (MLTC) program provides services to chronically ill or disabled New Yorkers who are eligible for the program and want to stay in their homes and communities. Health plans (PACE, Partial Capitation, MAP) in the MLTC program use the Uniform Assessment System for New York (UAS-NY) Community Health Assessment (CHA) as a component in determining care planning for their members. This assessment is conducted at enrollment into the program and at specified intervals thereafter. The CHA provides information on the members' demographic characteristics, functional ability, social supports, and other health related information. MLTC members are an older population. During the study period, eighty-three percent of new MLTC members were age sixty-five or older compared with about seventeen percent of the New York State general population.[1] Additionally, multiple comorbidities are more prevalent in older adults.[2,3]

COVID-19 is an infectious disease caused by the SARS-CoV-2 coronavirus resulting in respiratory illness. The first case of COVID-19 was detected in New York State in March of 2020. COVID-19 infection can cause severe illness leading to hospitalization and death. The risk of developing severe illness, hospitalization, and dying from COVID-19 increases with age and is highest among older people with other health conditions.[4-6]

The MLTC population may be disproportionately impacted by COVID-19 due to the age and health status of program members. This analysis sought to understand how characteristics of new MLTC members who had COVID-19 before enrollment differed from those who did not have COVID-19 before enrollment, during the first year of the pandemic. This information may be useful for MLTC quality improvement and for future resource allocation.

- ➤ Differences between characteristics of new MLTC members who had and those who did not have COVID-19 before enrollment, during the first year of the pandemic were evaluated.

- ➤ COVID-19 hospitalizations were identified using Statewide Planning and Research Cooperative System (SPARCS) hospital discharge data.

- ➤ Lab-confirmed positive COVID-19 test results were identified using Electronic Clinical Laboratory Reporting System (ECLRS) data.

- ➤ New MLTC members with a COVID-19 hospitalization, lab-confirmed positive COVID-19 test result, or either a COVID-19 hospitalization and/or a positive COVID-19 test result prior to enrollment differed from those without.

- ➤ Understanding the impact of COVID-19 on new MLTC members may be useful for stakeholders interested in targeting interventions for quality improvement.

Methods

Individuals who enrolled in the MLTC program between April 1, 2020 and March 31, 2021 were identified using CHA initial assessments and Medicaid capitation payments. Members with a first capitation payment the month of or following the initial assessment, or no capitation payment in the 6 months prior to the initial assessment, were considered new members. This cohort was matched to the Statewide Planning and Research Cooperative System (SPARCS) hospital discharge data to identify new members with a COVID-19 hospitalization prior to enrollment (date of initial assessment). COVID-19 hospitalizations were identified using ICD-10 diagnosis codes based on Center for Disease Control (CDC) ICD-10-CM interim coding guidance effective on February 20, 2020 and official guidance beginning on April 1, 2020[7-8]. The cohort was also matched to the Electronic Clinical Laboratory Reporting System (ECLRS) to identify positive COVID-19 laboratory test results prior to enrollment.

Analysis

An analysis was performed to describe differences in the following new member characteristics: region (Central, Hudson Valley, Long Island, New York City, North East, Western), age group (< 21, 21-54, 55-64, 65-74, 75-84, 85+ years), gender (female, male), race/ethnicity (Asian non-Hispanic, Black non-Hispanic, Hispanic, missing, other, White non-Hispanic), primary language (Chinese, English, missing, other, Russian, Spanish), payment source (dually enrolled in Medicaid and Medicare, Medicaid only), current location (community, hospital, nursing home, other), living situation (alone, with family/relative, with other), nursing home utilization in the last ninety days (yes, no), and level of care (LOC) score (0-10, 11-20, 21-30, 31-48). The LOC score is a measure of functional status with scores ranging from 0 to 48. A higher score indicates a higher care need. This analysis was stratified by COVID-19 hospitalization status, positive COVID-19 laboratory test result, and either a COVID-19 hospitalization and/or a positive COVID-19 laboratory test result. Chi-square tests were performed for categorical characteristics and a two-sample t-test was used to compare mean LOC scores. Analyses were conducted using SAS 9.4. A p-value of $p < 0.05$ was considered statistically significant.

Results

A total of 7,394 individuals enrolled in the MLTC program between April 1, 2020 and March 31, 2021. Of these new members, 3.9% had a COVID-19 hospitalization, 6.0% had a laboratory confirmed positive COVID-19 test, and 6.6% had either a COVID-19 hospitalization and/or lab-confirmed positive COVID-19 test prior to enrollment (Table 1).

New members with a COVID-19 hospitalization, lab-confirmed positive COVID-19 test, or either a COVID-19 hospitalization and/or lab-confirmed positive COVID-19 test result prior to enrollment differed significantly from those without in region, gender, race/ethnicity, primary language, current location, living situation, nursing home utilization in the last 90 days, LOC score category, and mean LOC score. Those with a lab confirmed positive COVID-19 test prior to enrollment compared to those without also differed significantly in age group (Table 1). Categories within characteristics having a significant chi-square test and two or greater difference in percentage between COVID positive (hospital and/or lab confirmed) and no COVID are: New York City (NYC) (region); age 75-84 (age group); male (gender); Black non-Hispanic and Hispanic (race/ethnicity); Spanish (primary language); hospital and nursing home (current location); with family/relative and with other (living

situation); nursing home utilization in the past 90 days; and 11-20 and 31-48 (LOC score category). The following categories showed the largest difference in percentage of new members with a COVID-19 hospitalization and/or lab-confirmed positive COVID-19 test compared with those without (five or greater difference in percentage): nursing home utilization in the last 90 days (25.5%), Spanish primary language (9.0%), Hispanic (7.5%), NYC (7.3%), male (6.1%), and Black non-Hispanic (5.0%) (data not shown).

Discussion

The characteristics of people who enrolled in the MLTC program during the pandemic differed depending on whether they were infected with COVID-19 prior to enrollment. Eight of the ten characteristics examined were significantly different in all strata. The race/ethnicity disparities seen in this analysis are consistent with other research which show higher rates of both COVID-19 hospitalization and test positivity among non-Hispanic Black and Hispanic compared with non-Hispanic White race/ethnicity.[6,9] Combining these data sources provided a more complete picture of COVID-19 cases in the MLTC population.

When comparing these results to other studies, it is important to note that MLTC new members differ from the general population in New York State. New MLTC members were 83 percent age sixty-five or older compared with 17 percent of the general population, 62 percent were female compared with 51 percent of the general population, and 73 percent resided in NYC compared with 43 percent of the general population[1]. This could be why age was not significantly different for two of the three strata in this analysis.

A limitation to this analysis is that SPARCS data may have been incomplete due to an extension of data submission deadlines during the pandemic. Additionally, COVID-19 hospitalizations prior to April 1, 2020 may be undercounted because the COVID-19 specific ICD-10 code had not yet been introduced. Also, there were some small numbers in stratifications presented which might impact the power of statistical tests. To address the concern about small numbers, the Two-sided Fisher's Exact Test was used if more than twenty percent of the cell frequencies were less than five. Lastly, there may have been underreporting in ECLRS during the beginning of the pandemic when testing was very limited. This may be responsible for alignment differences between ECLRS and hospitalizations observed during the first few months of the study period.

This analysis uses the SPARCS and ECLRS data sources to enhance the understanding of differences between new MLTC members who had COVID-19 before enrollment and those who did not, during the first year of the COVID-19 pandemic. This information may be useful to stakeholders interested in targeting interventions for quality improvement or future resource allocation.

Table 1. Overall and stratified comparison of characteristics of new MLTC members with COVID-19 before enrollment, April 1, 2020 – March 31, 2021

Characteristics	All new MLTC Members, % of n = 7,394	COVID-19 hospitalization before enrollment, % of n = 285*	Lab-confirmed positive COVID-19 test before enrollment, % of n = 442*	COVID-19 hospitalization and/or lab confirmed positive COVID-19 test before enrollment, % of n = 487*
Region				
Central	2.3	SS	SS	SS
Hudson Valley	8.6	10.5	10.4	10.1
Long Island	9.5	SS	7.9	8.0
New York City	72.5	79.3	79.0	79.3
Northeast	2.0	SS	SS	SS
Western	5.0	SS	SS	SS
Age group (years)				
<21	SS	**SS**	SS	**SS**
21-54	6.6	**SS**	SS	**SS**
55-64	10.4	**SS**	9.3	**9.3**
65-74	37.7	**38.6**	36.9	**38.0**
75-84	29.0	**32.3**	33.5	**32.4**
85+	16.2	**16.5**	17.0	**16.6**
Gender				
Female	62.6	53.7	57.0	56.9
Male	37.4	46.3	43.0	43.1
Race/Ethnicity				
Asian Non-Hispanic	9.3	SS	SS	SS
Black Non-Hispanic	16.8	21.4	21.5	21.4
Hispanic	25.6	35.8	32.1	32.7
Missing	9.9	SS	10.4	10.3
Other	13.2	SS	7.7	8.6
White Non-Hispanic	25.3	18.3	23.1	21.6
Primary Language				
Chinese	7.5	SS	SS	SS
English	48.5	41.1	49.1	47.6
Missing	SS	SS	SS	SS
Other	13.2	11.2	9.1	9.5
Russian	5.8	SS	SS	SS
Spanish	24.9	36.5	32.6	33.3

Characteristics	All new MLTC Members, % of n = 7,394	COVID-19 hospitalization before enrollment, % of n = 285*	Lab-confirmed positive COVID-19 test before enrollment, % of n = 442*	COVID-19 hospitalization and/or lab confirmed positive COVID-19 test before enrollment, % of n = 487*
Payment Source				
Dually Enrolled in Medicaid and Medicare	92.9	**93.0**	**94.3**	**93.6**
Medicaid Only	7.1	**SS**	**SS**	**6.4**
Current Location				
Community	96.5	93.0	86.7	87.7
Hospital	0.9	SS	SS	SS
Nursing Home	1.5	SS	SS	SS
Other	1.2	SS	SS	SS
Living Situation				
Alone	36.1	28.8	30.1	30.4
With Family/Relative	57.1	63.5	59.1	59.1
With Other	6.8	SS	10.9	10.5
Nursing Home Utilization in the Last 90 Days	8.6	31.6	33.3	32.2
Level of Care Score Category				
0-10	44.9	35.8	36.2	36.6
11-20	42.4	47.4	45.0	45.6
21-30	10.3	10.9	12.2	11.9
31-48	2.4	SS	SS	SS
Level of Care Score (mean)	12.9	14.7	14.9	14.8

*Chi-squared tests were conducted on the characteristic group, not individual categories. Bolded values indicate characteristics WITHOUT a statistically significant (p<0.05) chi-squared test comparing new members with and without COVID-19 hospitalization, lab-confirmed positive COVID-19 test, or either a COVID-19 hospitalization and/or a lab-confirmed positive COVID-19 test result. A t-test was used to compare mean level of care scores.

SS = Sample size too small to report (fewer than 30 members).

References

1. QuickFacts: New York. United States Census Bureau. Accessed June 1, 2022. https://www.census.gov/quickfacts/fact/table/NY/AGE775221#AGE775220
2. Salive, ME. Multimorbidity in older adults. *Epidemiologic Reviews.* 2013;35(1)**:**75-83. https://doi.org/10.1093/epirev/mxs009
3. Fried VM, Bernstein, AB, Bush MA. Multiple chronic conditions among adults aged 45 and over: Trends over the past 10 years. NCHS data brief, no 100. Hyattsville, MD: National Center for Health Statistics. 2012. https://www.cdc.gov/nchs/data/databriefs/db100.pdf
4. Stokes EK, Zambrano LD, Anderson KN, et al. Coronavirus Disease 2019 Case Surveillance — United States, January 22–May 30, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69:759–765. DOI: http://dx.doi.org/10.15585/mmwr.mm6924e2.
5. Risk for COVID-19 infection, hospitalization and death by age group. Centers for Disease Control and Prevention. Updated July 29, 2022. Accessed August 15, 2022. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-age.html
6. Carethers J. Insights into disparities observed with COVID-19. *J Intern Med.* 2021;289(4)**:**463-473. https://doi.org/10.1111/joim.13199
7. Centers for Disease Control and Prevention. *ICD-10-CM Official Coding Guidelines – Supplement: Coding encounters related to COVID-19 Coronavirus Outbreak (February 20, 2020 – March 31, 2020). Accessed July 12, 2022.* https://www.cdc.gov/nchs/data/icd/interim-coding-advice-coronavirus-March-2020-final.pdf.
8. Centers for Disease Control and Prevention. *ICD-10-CM Official Coding and Reporting Guidelines April 1, 2020 through September 30, 2020.* Accessed July 12, 2022. https://www.cdc.gov/nchs/data/icd/COVID-19-guidelines-final.pdf.
9. Risk for COVID-19 infection, hospitalization, and death by race/ethnicity. Centers for Disease Control and Prevention. Updated July 28,2022. Accessed August 1, 2022. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html

Contact Information

We welcome questions and feedback about this Statistical Brief. Please contact us at:

Center for Applied Research and Evaluation
Office of Quality and Patient Safety
New York State Department of Health
Corning Tower, Room 1938
Albany, NY 12237
Phone: (518) 486-9012
Email: MLTC_OQPS@health.ny.gov