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## Statin Therapy for Patients with Cardiovascular Disease

### OVERVIEW

Cardiovascular disease (CVD) is the leading cause of death in the United States and in New York State (NYS). In NYS, CVD was responsible for over 54,000 deaths in 2015.<sup>1</sup> Million Hearts®, a national initiative focused on preventing one million heart attacks and strokes by 2022, considers optimal cholesterol management through a combination of lifestyle change and statin therapy (cholesterol-lowering medicines) an important component of reducing CVD.<sup>2</sup> Based on 2018 guidelines on blood cholesterol management from the American College of Cardiology and the American Heart Association, there is convincing evidence of the benefit of statin therapy and adherence in reducing the risk of CVD.<sup>3</sup> Standards of care for patients with CVD may include an assessment of the use of statin therapy at an appropriate intensity and adherence to reduce or prevent the risk of cardiovascular events.<sup>4</sup>

Nationally, 39 million people who are at high risk for CVD are not taking a statin.<sup>5</sup> Research has shown that Americans aged 35-64 are less likely to use aspirin or statins when indicated.<sup>6</sup> While statins have been shown to be equally effective at decreasing risk of coronary events in men and women, women are also less likely to be prescribed these cholesterol-lowering drugs than men.<sup>6</sup> Few studies have been able to also compare adherence rates across a commercially insured and Medicaid population. The purpose of this analysis was to examine if differences in statin adherence observed in epidemiologic research are observed in a NYS managed care population and if the patterns vary depending on whether adults are enrolled in Medicaid compared to a commercial insurance.

<sup>1</sup> Department of Health. (n.d.). Retrieved November 20, 2018, from <https://www.health.ny.gov/statistics/chac/mortality/d1.htm>

<sup>2</sup> <https://millionhearts.hhs.gov/tools-protocols/tools/cholesterol-management.html>

<sup>3</sup> Grundy, SM, Stone, NJ, Bailey, AL, Beam C, Birtcher, KK, Blumenthal, RS, Braun LT, de Ferranti S, Faiella-Tommasino J, Forman DE, Goldberg R, Heidenreich PA, Hlatky MA, Jones DW, Lloyd-Jones D, Lopez-Pajares N, Ndumele CE, Orringer CE, Peralta CA, Saseen JJ, Smith SC Jr, Sperling L, Virani SS, Yeboah J. 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APHA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*, 2018; DOI: 10.1161/CIR.0000000000000625.

<sup>4</sup> Statin Therapy for Patients with Cardiovascular Disease (n.d.). Retrieved February 15, 2017, from <https://www.ncqa.org/Portals/0/PublicComment/HEDIS2016/5.%20Statin%20Cardiovascular%20Disease.pdf>

<sup>5</sup> Wall, HK, Ritchey, MD, Gillespie, C, Omura, JD, Jamal, A, George, MG. Vital Signs: Prevalence of Key Cardiovascular Disease Risk Factors for Million Hearts 2022 – United States, 2011-2016. US Department of Health and Human Services/Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report*, September 7, 2018; 67(35):983-991. Available at <https://www.cdc.gov/mmwr/volumes/67/wr/mm6735a4.htm>

<sup>5</sup> Centers for Disease Control and Prevention (CDC). Vital Signs: Preventing 1 Million Heart Attacks and Strokes, September 2018. Available at <https://www.cdc.gov/vitalsigns/million-hearts/index.html>

<sup>6</sup> Zhang H, Plutzky J, Shubina M, Turchin A. Drivers of the Sex Disparity in Statin Therapy in Patients with Coronary Artery Disease: A Cohort Study. *PLOS ONE*, 2016; 11(5). Available at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0155228>

## METHODS

As part of the annual submission of the 2017 Quality Assurance Reporting Requirements (QARR), managed care organizations submit information for the following measure:

### *Statin Therapy for Patients with Cardiovascular Disease*

The percentage of males ages 21-75 years and females ages 40-75 years with clinical atherosclerotic cardiovascular disease given moderate or high intensity statin therapy for at least 80% of the treatment period. The two rates reported are 'received statin therapy' and 'statin adherence 80% of the treatment period'.

In addition to submitting aggregate quality data for QARR, managed care organizations submit a Patient-Level Detail file with a limited set of demographic characteristics of members who met the measure criteria. This includes whether the member is denominator and numerator compliant, demographic characteristics (e.g., gender, age group) and the type of insurance (e.g., Commercial HMO/PPO, Medicaid Managed Care). Per the measure requirements, the study population included were continuously enrolled in their respective managed care plan in the measurement year, January 1, 2016, to December 31, 2016, and the year prior to the measurement year.

To assess differences across the study population, we calculated the percentage of members who received statin therapy and those who remained adherent to their therapy for 80% of the treatment period by age group, and type of insurance for females and males separately. Results were stratified by gender because of differing guidelines for prescribing.<sup>7</sup>

## RESULTS

Table 1. Characteristics of the study cohorts

Plan	Female		Male	
	Received (Row %)	Adherent (Row %)	Received (Row %)	Adherent (Row %)
Medicaid				
Age Group				
21 – 39	--	--	46	57
40 – 54	59	55	75	62
55 – 64	71	64	79	69
65 – 75	76	67	81	73
Commercial				
Age Group				
21 – 39	--	--	54	60
40 – 54	58	57	77	62
55 – 64	69	66	82	69
65 – 75	67	68	78	72

<sup>7</sup> Stone, N.J., et. al.

--: According to the measure specifications from the National Committee for Quality Assurance, the data was not collected.

## Key findings:

- Receipt of statin therapy remains below recommended thresholds.
- Adherence to statin therapy remains below recommended thresholds.
- The proportion of the population who both received and remained adherent to statin therapy was lower in females than in males.
- The proportion of the population who both received and remained adherent to statin therapy is lower among younger adults (ages 54 and younger) than among older adults (ages 55 and older) regardless of gender.
- The findings were consistent across both the Medicaid and commercial population.

## CONCLUSION

The results of this study are consistent with other current research on the topic.<sup>8</sup> Receipt of statin therapy in the study population falls below recommended treatment thresholds. Adherence, an important component to statin therapy, is still at lower than recommended rates in the study population. Females, across every comparable age group, are less likely to receive statin therapy and have lower adherence rates than males among both Medicaid and Commercial health plan members.

These findings point to opportunities for improvement. The 2018 guidelines state statins of high intensity (or maximally tolerated statin therapy) are recommended for adults with CVD, yet treatment and adherence gaps persist. Further study should investigate the differences in treatment and adherence rates between different age cohorts and between males and females. This study serves as an exploratory data point in the examination of the potential treatment differences across age and gender.

A limitation of the study is that the current quality measure only counts those individuals on moderate or high-intensity statins. We were not able to examine whether those not on a moderate or high-intensity stain were on any statin (low intensity).

While receipt of statin therapy and adherence to the medicine is consistent across health plan membership types, differences in gender and age indicate there are disparities in treatment plans for those at risk of CVD. Clinical associations and providers should evaluate current treatment protocols to ensure recommendations are being met and patients at risk of CVD related complications are receiving appropriate treatment.

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<sup>8</sup> Wall, HK, Ritchey, MD, Gillespie, C, Omura, JD, Jamal, A, George, MG. Vital Signs: Prevalence of Key Cardiovascular Disease Risk Factors for Million Hearts 2022 – United States, 2011-2016. US Department of Health and Human Services/Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report, September 7, 2018; 67(35):983-991. Available at <https://www.cdc.gov/mmwr/volumes/67/wr/mm6735a4.htm>