

# Estimate the Real-World Effectiveness and adherence of Statins in Patients with LDL-C $\geq 190$ mg/dL

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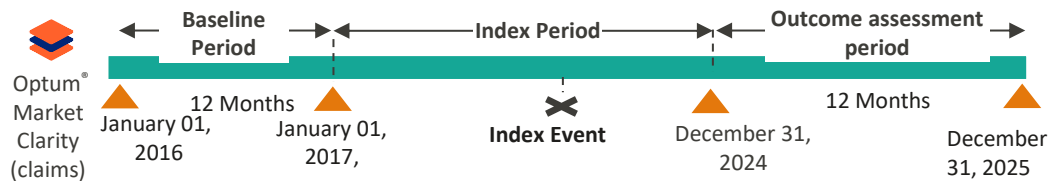
## Background

- Patients with LDL-C  $\geq 190$  mg/dL are at elevated lifetime risk of ASCVD. Clinical guidelines recommend early high-intensity statin therapy to achieve significant LDL-C reduction
- Real-world practice frequently falls short due to delayed treatment initiation, suboptimal statin intensity, and poor adherence.
- These gaps highlight the need for real-world data (RWD) from linked claims and EHR databases to evaluate treatment patterns and outcomes in routine clinical settings
- The U.S. statin market is expected to grow reaching an estimated USD 1.57-2.01 billion by 2032.

## Objective

- Evaluate the real-world effectiveness of high- and moderate-intensity statin therapy in patients with baseline LDL-C  $\geq 190$  mg/dL (Atorvastatin, Fluvastatin, Lovastatin, Pitavastatin, Pravastatin, Rosuvastatin, Simvastatin)
- Primary Outcome**
  - Change (absolute and percentage) in LDL-C from baseline at 3, 6, and 12 months post-statin initiation.
- Secondary Outcomes**
  - Incidence of major adverse cardiovascular events (MACE)
  - Treatment adherence and persistence and safety outcomes

## Methodology



### Study Design and Data source

Retrospective, observational new-user, cohort study. Optum Market Clarity Integrated Claims Data Linked with Optum EHR for (Laboratory values and Clinical characteristics).

### Index date

The index date was defined as the first statin initiation within 90 days of the qualifying LDL-C measurement.

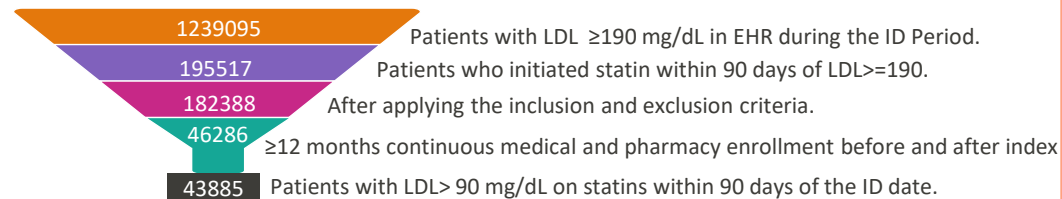
### ✓ Inclusion Criteria

- Age  $\geq 20$  years
- LDL-C  $\geq 190$  mg/dL at baseline
- Continuous enrollment  $\geq 12$  months pre- and  $\geq 6$  months post-index
- Statin-naïve at baseline
- $\geq 1$  follow-up LDL at 3–12 months

### STUDY ELIGIBILITY CRITERIA

### ✗ Exclusion Criteria

- Pregnancy
- ESRD, Dialysis
- Use of other lipid-lowering drugs
- Hospice, malignancy, organ transplant
- Missing demographic data

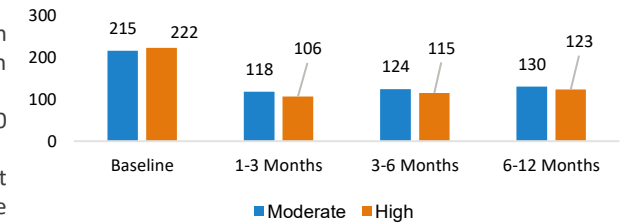


Statin prescriptions by intensity low- (2,178), moderate- (28,512), and high-intensity (13,195).

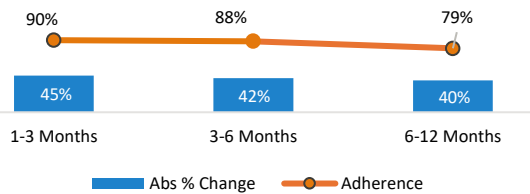
## Results

- Mean LDL-C levels decreased substantially from baseline to 1–3 months in both moderate- and high-intensity statin groups, with a greater early reduction observed in the high-intensity group.
- The absolute percentage reduction in LDL-C attenuated over time for both intensity groups, coinciding with a progressive decline in medication adherence from 1–3 months to 6–12 months.
- Adherence was consistently higher among females and older age groups ( $\geq 60$  years) compared to males and younger patients across all follow-up periods.
- Incidence of cardiovascular events (stroke, myocardial infarction, heart failure, and ASCVD) was higher in the high-intensity group, while cardiovascular death remained rare in both groups.

LDL (mg/dL) Values at Different Time Point



Absolute % Change in LDL and Adherence and Over Time (Moderate Intensity statin)



Absolute % Change in LDL and Adherence and Over Time (High Intensity statins)

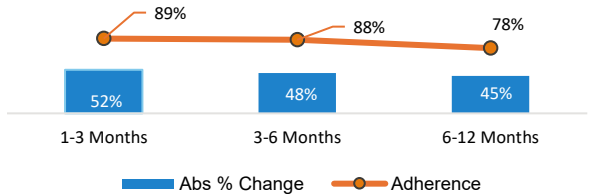


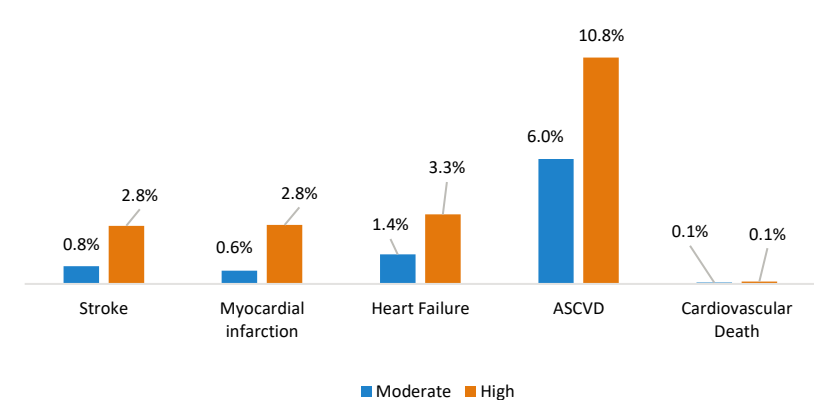
Table 1: Adherence by Gender (%)

Gender	0-3 Months	3-6 Months	6-12 Months
Male	0.87	0.85	0.75
Female	0.89	0.87	0.78

Table 2: Adherence by Age Group (%)

Age Group	0-3 Months	3-6 Months	6-12 Months
20-39	0.87	0.85	0.75
40-59	0.89	0.87	0.78
$\geq 60$	0.91	0.91	0.82

Incidence of Cardiovascular Events in Follow-up Period



## Conclusions

- Statin initiation led to **~45% LDL reduction with moderate-intensity** and **~52% with high-intensity therapy** in the first 1–3 months, with attenuation over time paralleling declining adherence.
- **Adherence** declined during follow-up, particularly among **younger patients and males**, while **patients aged  $\geq 60$  years maintained the highest adherence**.
- **Higher statin intensity** was associated with **higher follow-up cardiovascular event rates**, reflecting greater baseline risk; **cardiovascular death remained rare across age and sex groups**.
- **Moderate-intensity statins were prescribed more than twice as often as high-intensity statins**, indicating predominant reliance on moderate-intensity therapy in real-world practice.