

# Statin Prescribing Patterns and Residual CRP Risk on Hospitalisation in a South-Western Sydney Population

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## Background

Statins are lipid-lowering drugs used to treat cardiovascular disease (CVD).

Statin use is well monitored on a national level but there is little regional data on statin use.

This study explored statin prescribing patterns in the population of South-Western Sydney (SWS) using electronic health record data from the electronic Practice Based Research Network (ePBRN).

Statins also reduce CVD event rates through anti-inflammatory effects.

However, the residual risk of inflammation on CVD risk following statin therapy is unknown.

The potential role of on-treatment CRP level as a marker for hospitalization risk among statin-treated patients was investigated

## Methods

The ePBRN consists of anonymised, hospital-linked, electronic health records sourced from general practitioner clinics located in SWS.

### Trends in Statin Use

Prevalence was determined for those on lipid-lowering therapy for each year from 2012-2019.

Adherence to statins was determined for those who received statin prescriptions for a year or more.

### Validation of the ePBRN dataset

The data was validated by comparing factors which affected CRP to an equivalent cohort from the United States National Health and Nutrition Examination Survey (NHANES).

### CRP and Hospitalisation Risk

Hospital records of ePBRN patients were used to assess the relationship between elevated CRP and all-cause and ASCVD hospitalisations.

## Results and Conclusions

### Trends in Statin Use

1. New evidence suggests that benefits of statin use in the elderly outweigh costs. However, statin prevalence in this cohort still dropped in those 85 years and older (Figure 1)

**This suggests a significant delay in the translation of this evidence to the clinic.**

2. An ABC Catalyst production critical of statins caused a large decline in statin use from 2013-2015, but non-statin lipid-lowering therapy remained steady in the same period (Figure 2)

**This indicates that drug class rotation could address patient concerns with treatment.**

3. Good adherence (>80%) was only observed in 55% of the cohort.

**Low adherence rates indicate that barriers to visiting GPs are key issues in management due to the nature of the data in the cohort.**

### Validation of the ePBRN dataset

The model of independent determinants of CRP in the ePBRN and NHANES had  $R^2$  values of 0.187 and 0.221 respectively, and shared 8 cofactors.

**This validates the use of GP records in monitoring subclinical CRP**

### CRP and Hospitalisation Risk

An elevated CRP level was associated with a higher risk of all-cause but not ASCVD hospitalisations at 12 months after CRP level measurement.

**After accounting for independent determinants of CRP, the data suggests that there is no benefit in monitoring residual risk of CRP to predict future events.**

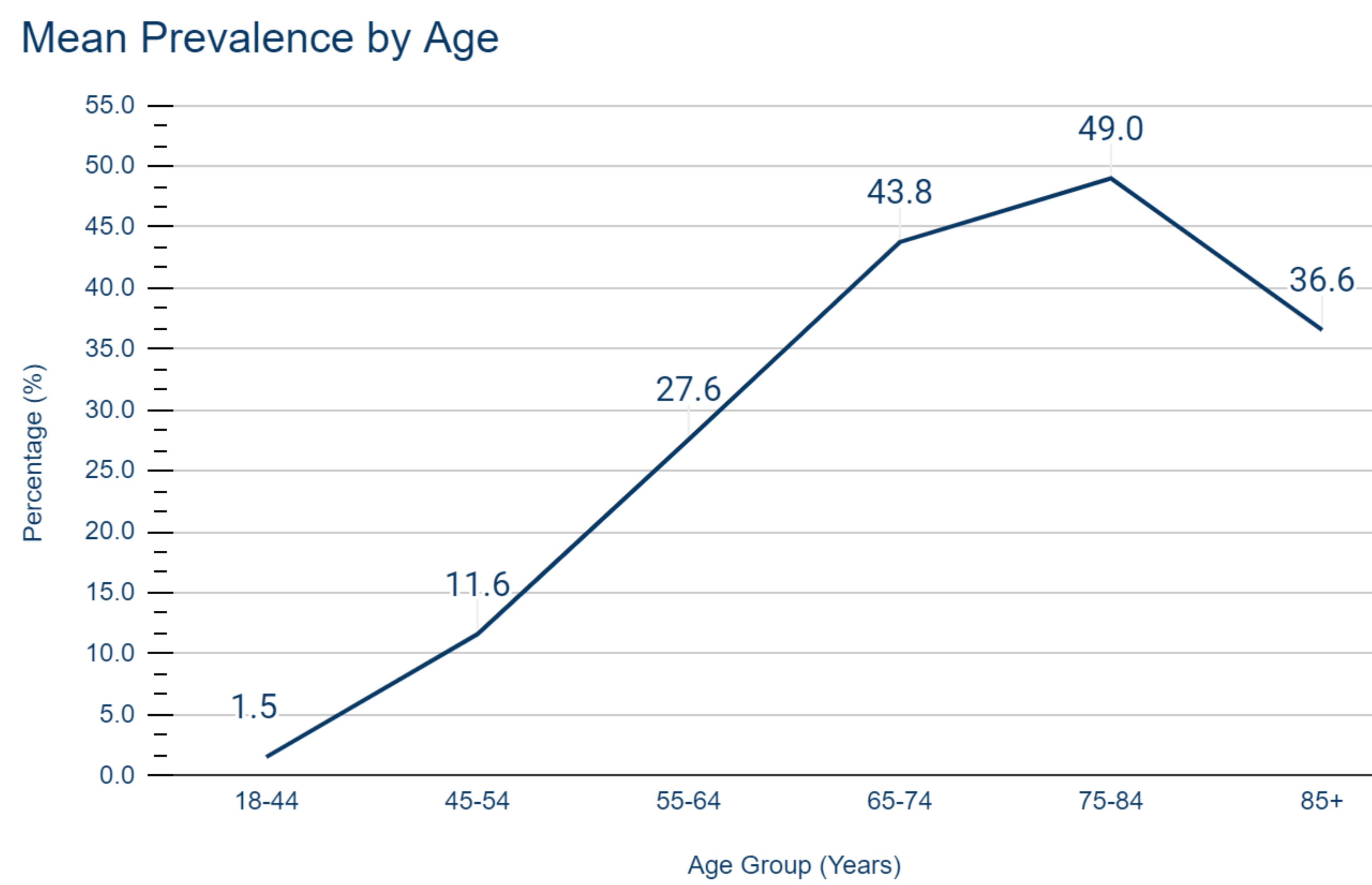


Figure 1: Prevalence of Statin Use by Age

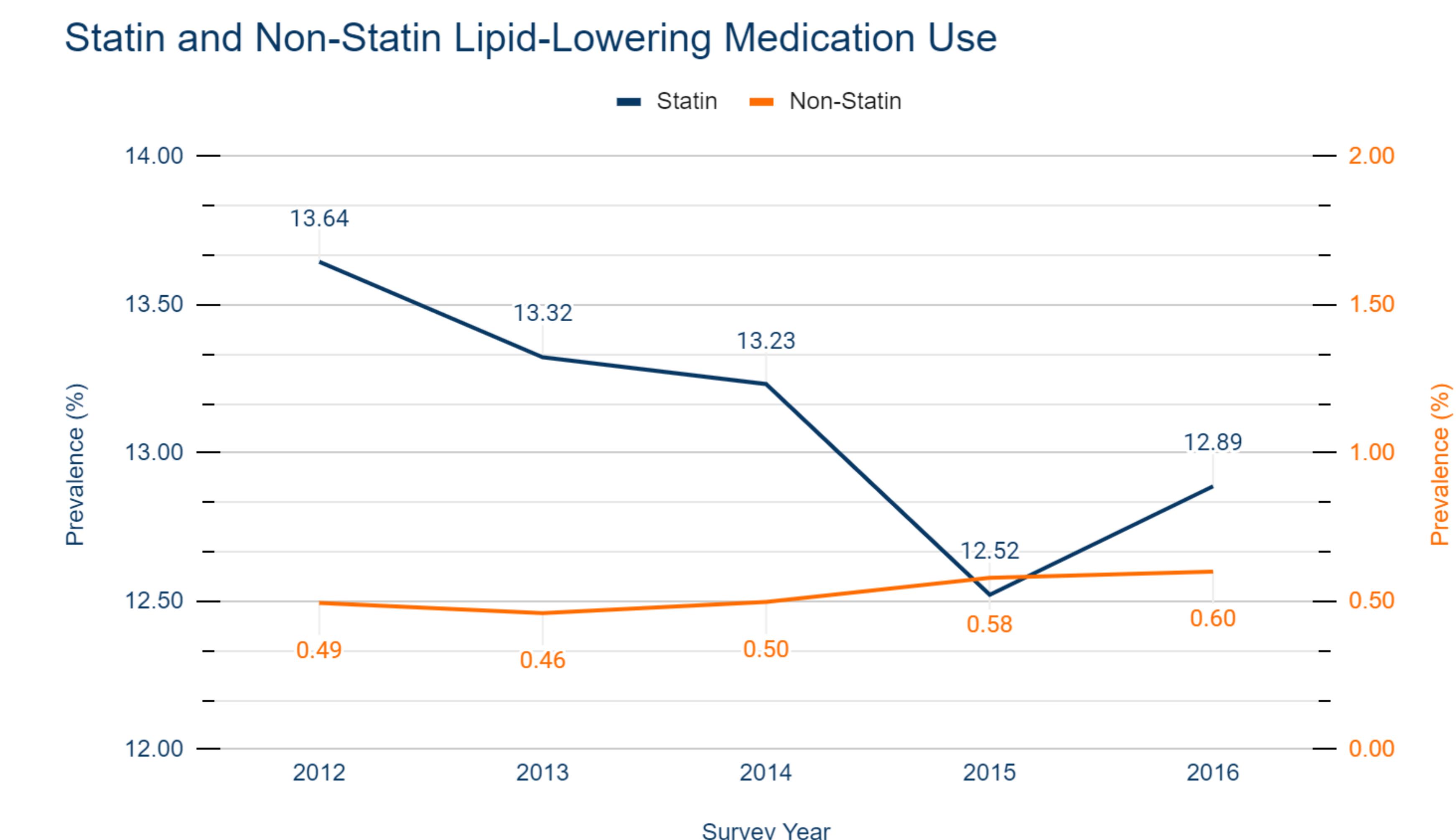


Figure 2: Prevalence of Statin and Non-Statin Lipid-Lowering Drugs by Year