

**Submission Id:** 5010

**Title**

*Antibiotic prescription in primary care and its determinants*

**Priority 1 (Research Category)**

Infectious Diseases (not respiratory tract)

**Presenters**

Martijn Sijbom, MD, Mirte Boelens, Mattijs E Numans, MD, PhD, Mark de Boer, MD, PhD

**Abstract**

Context

Antimicrobial resistance (AMR) is increasing worldwide. The major driver of AMR is antibiotic use. In most countries primary care is responsible for circa 80-90% of all antibiotic prescriptions.

Objective

Our aim was to determine the number and trends of antibiotic prescriptions in primary care per year over a of 10-year period, divided into appropriate and inappropriate antibiotic prescriptions. Our other aim was to establish the determinants of inappropriate antibiotic prescribing.

Study Design and Analysis

Antibiotic prescriptions in a primary care network between 2012 and 2021 were included. Each antibiotic prescription was analyzed on appropriateness according to primary care guidelines through included classification codes. Determinants were tested for association with inappropriateness with a multivariable regression analysis.

Dataset

Pseudonymized routine healthcare data from patients enlisted with primary care practices was used and data on determinants from Statistics Netherlands were added.

Population Studied

Patients living in Leiden-the Hague area in the Netherlands.

Outcome Measures

The primary endpoints were the number of appropriate and inappropriate antibiotic prescriptions over the period 2012-2021 and determinants associated with inappropriate antibiotic prescriptions.

## Results

There were in total 1,150,252 antibiotic prescriptions for 269,574 patients (56.7% female gender, mean age 41.9 years). The numbers of antibiotic prescriptions per year were of similar magnitude. Urinary tract infections (37.2%) and respiratory tract infections (RTI) (36.2%) were the most common reason for an antibiotic prescription. RTI had the most inappropriate antibiotic prescriptions, 14.5% of all antibiotic prescriptions were for a RTI and inappropriate. Within the prescriptions for a RTI, 39.6% was classified as inappropriate. For the antibiotic group macrolides, 77.1% of the prescriptions did not correspond with the 1st and 2nd choice in guidelines. The determinants associated with inappropriate antibiotic prescriptions were female gender, age 5 years and older, presence of co-morbidities, a Turkish-, Surinamese or Dutch Caribbean background and a large primary care practice size.

## Conclusion

Antibiotic prescribing in primary care can be improved for RTI and the prescription of macrolides. Public information campaigns on antibiotics and interventions for improving antibiotic prescribing may incorporate tailored elements for specific cultural groups.