

Antimicrobial use in long-term care facilities in the Netherlands

Authors:

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Data were collected by elderly care physicians, nurses or infection control practitioners in participating LTCFs. Palliative care was not included in this study. Data were reported to SNIV through a password protected web-based surveillance system.

it was 153/240 (64%) in 2019 163/247 (66%) and in 2021 116/214 (51%). The rest of the residents received antimicrobials as prophylaxis.

In 2017, 70% of these antimicrobials which were prescribed for treatment of an infection, were antibiotics and 30% antimycotics; in 2021, the percentage of antimycotics has increased to over 50% (Figure 2). Variation is seen within the antimycotic prescriptions in this four year period.

In 2017 (75/152) and in 2021 (57/120) approximately 50% were prescribed for prophylaxis, whereas in 2018 (20/85) and 2019 (30/114) approximately only 25% (Figure 2). The highest increase in antimycotics is seen in the use of ketaconazole. In 2017, ketaconazole was selected in 49% of the cases and in 2019 this has increased to 65%. In 2021 ketaconazole was mostly used as prophylaxis (70.2% in 2021), while in 2019 61% was for the treatment of infections.

Introduction:

Residents of long-term care facilities are at increased risk of infection and thus of being treated with an antimicrobial. Inappropriate use may lead to the development of resistance. In the Netherlands, the national surveillance network (SNIV) is used to monitor infectious diseases and antimicrobial use in long-term care facilities (LTCFs). We studied trends in antimicrobial use in these Dutch LTCFs.

Objectives:

To monitor trend in antimicrobial use in LTCFs in order to identify where the risk of resistance is potentially increasing.

Methods:

In 2017-2021, twice a year in April and/or November a point prevalence study was performed. In 2020 was no point prevalence study organized because of COVID-19 pandemic. In 2021 the results of the first point prevalence study are included.

On the registration day, prescribed antimicrobials with a maximum of three antibiotics or antimycotics per resident, and the indication (infection or prophylaxis) was registered.

Results:

Over the past four years 143 unique LTCFs [range 23-77 per year] participated with 14505 residents. The use of antimicrobial agents increased from 6.7% in 2017 to 10.7% in 2021 (Table 1). The percentage of antibiotics remained roughly the same (4.9-5.6%) however the use of antimycotics increased from 2.3% in 2017 to 6.0% in 2021 (Figure 1).

In 2017, 267 out of 478 (56%) antimicrobials were prescribed to residents with an infection, in 2018

Table 1. Antimicrobial prescriptions in a four year period.

| | Totaal | 2017 | 2018 | 2019 | 2021 |
|--|-------------|-------------|-------------|-------------|-------------|
| Total residents | 14505 | 6705 | 3419 | 2385 | 1996 |
| Residents with antimicrobial prescriptions | 1114 (7,7%) | 448 (6,7%) | 228 (6,7%) | 224 (9,4%) | 214 (10,7%) |
| Antimicrobial prescriptions | 1194 | 478 | 240 | 247 | 229 |
| Antibiotics | 723 (5,0%) | 326 (4,9%) | 155 (4,5%) | 133 (5,6%) | 109 (5,5%) |
| Antimycotics | 471 (3,2%) | 152 (2,3%) | 85 (2,5%) | 114 (4,8%) | 120 (6,0%) |
| For infection | 699 (59,0%) | 267 (56,0%) | 153 (64,0%) | 163 (66,0%) | 116 (51,0%) |
| Antibiotic prescription | 408 (58,4%) | 188 (70,4%) | 88 (57,5%) | 79 (48,5%) | 53 (45,7%) |
| Antimycotic prescription | 291 (41,6%) | 79 (29,6%) | 65 (42,5%) | 84 (51,5%) | 63 (54,3%) |
| For prophylaxis | 498 (41,2%) | 214 (44,4%) | 87 (36,3%) | 84 (34,0%) | 113 (49,3%) |
| Antibiotic prescription | 316 (63,5%) | 139 (65,0%) | 67 (77,0%) | 54 (64,3%) | 56 (49,6%) |
| Antimycotic prescription | 182 (36,5%) | 75 (35,0%) | 20 (23,0%) | 30 (35,7%) | 57 (50,4%) |

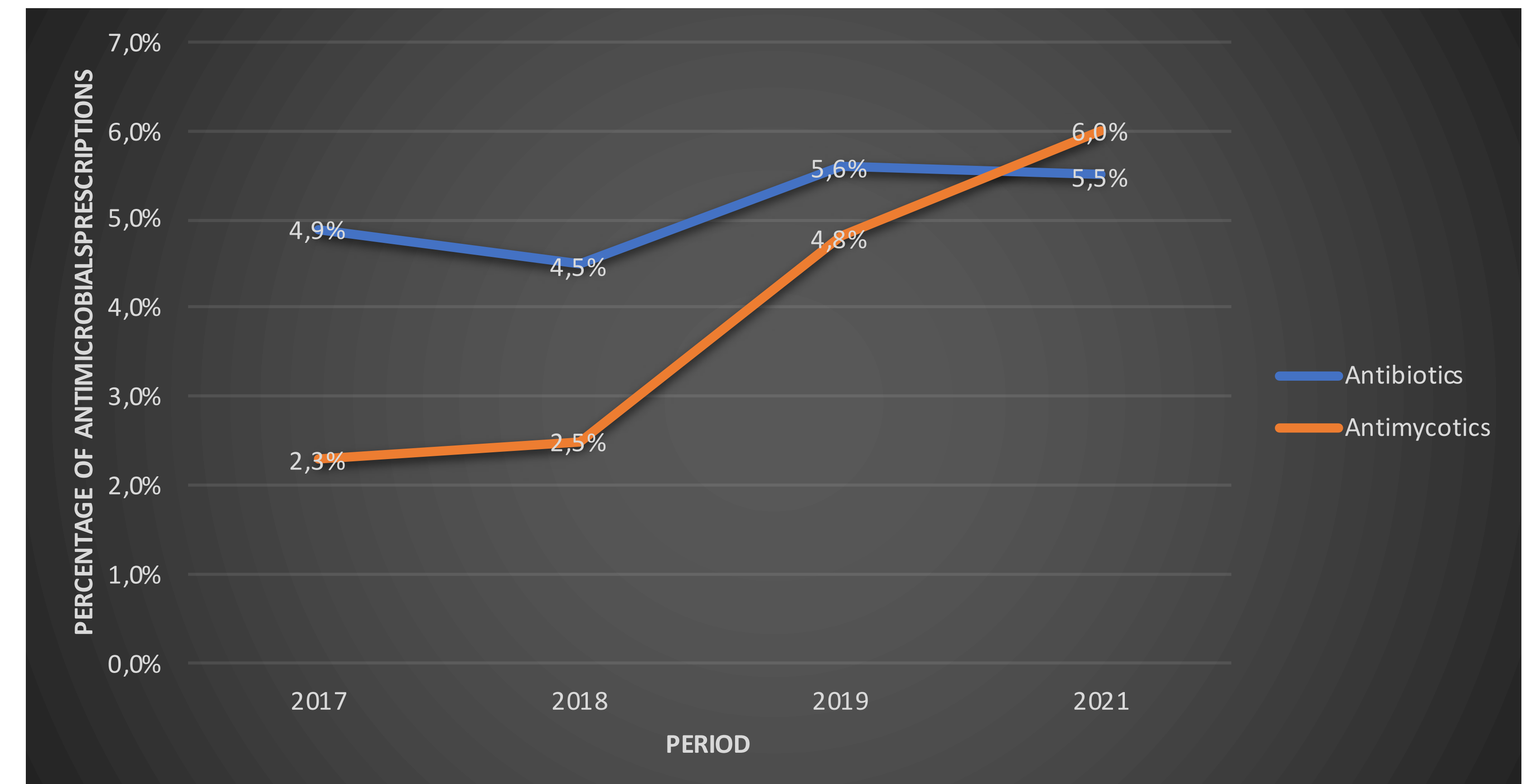


Figure 1. Percentage of antimicrobial prescriptions in a four year period.

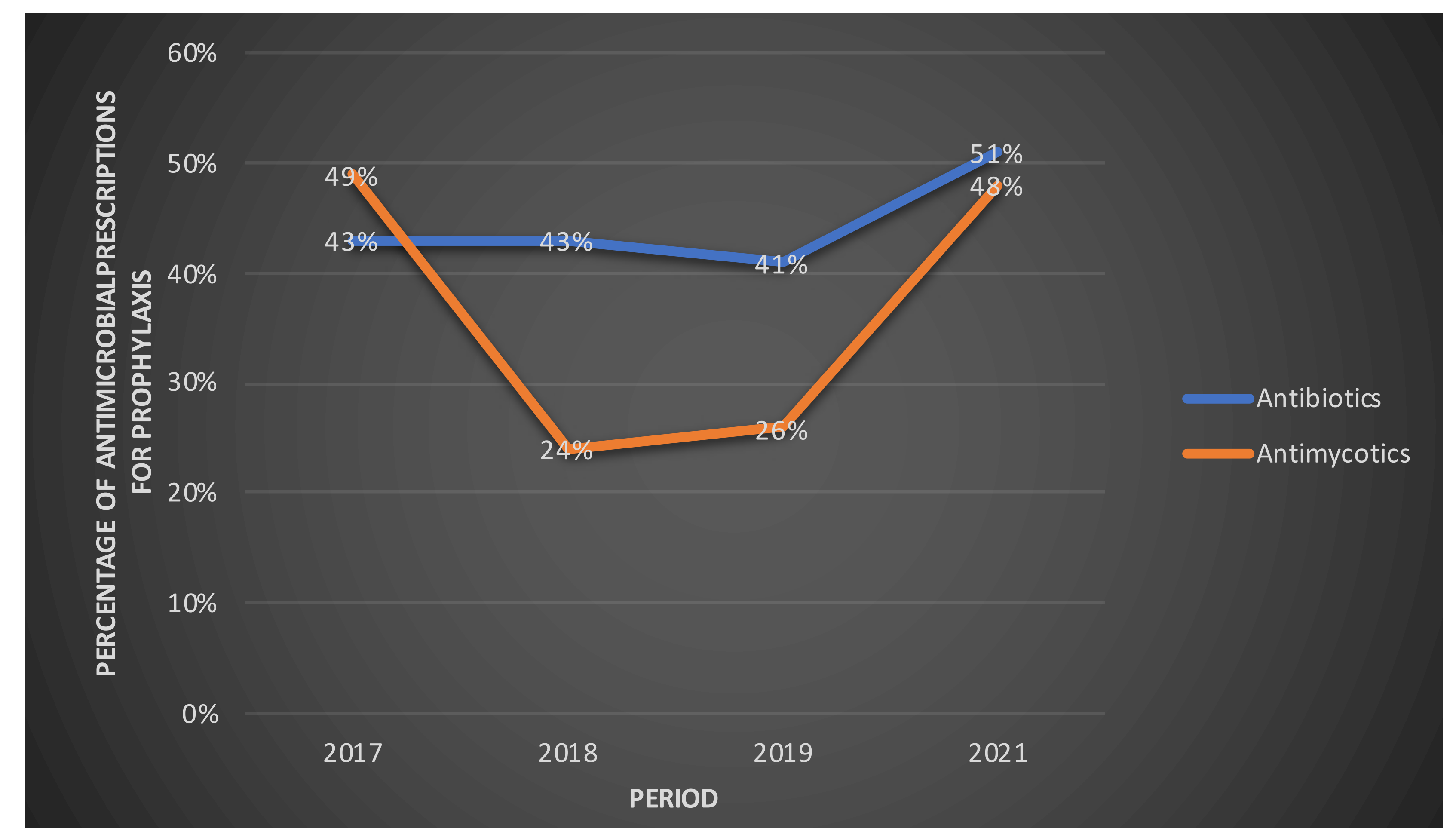


Figure 2. Percentage of antimicrobial prescriptions for prophylaxis.

Conclusion:

Prescription of antimycotics in LTCFs increased in the past four years. More research is needed to find out the clinical significance of this increasing antimycotic use.

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National Institute for Public Health and the Environment
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