April 22, 2022

AMR Clinical Reference Center,
National Center for Global Health and Medicine hospital
(Project commissioned by the Ministry of Health, Labour and Welfare)

National antimicrobial sales data: Report of data from 2021 survey
April 22, 2022 Release (Fixed value)

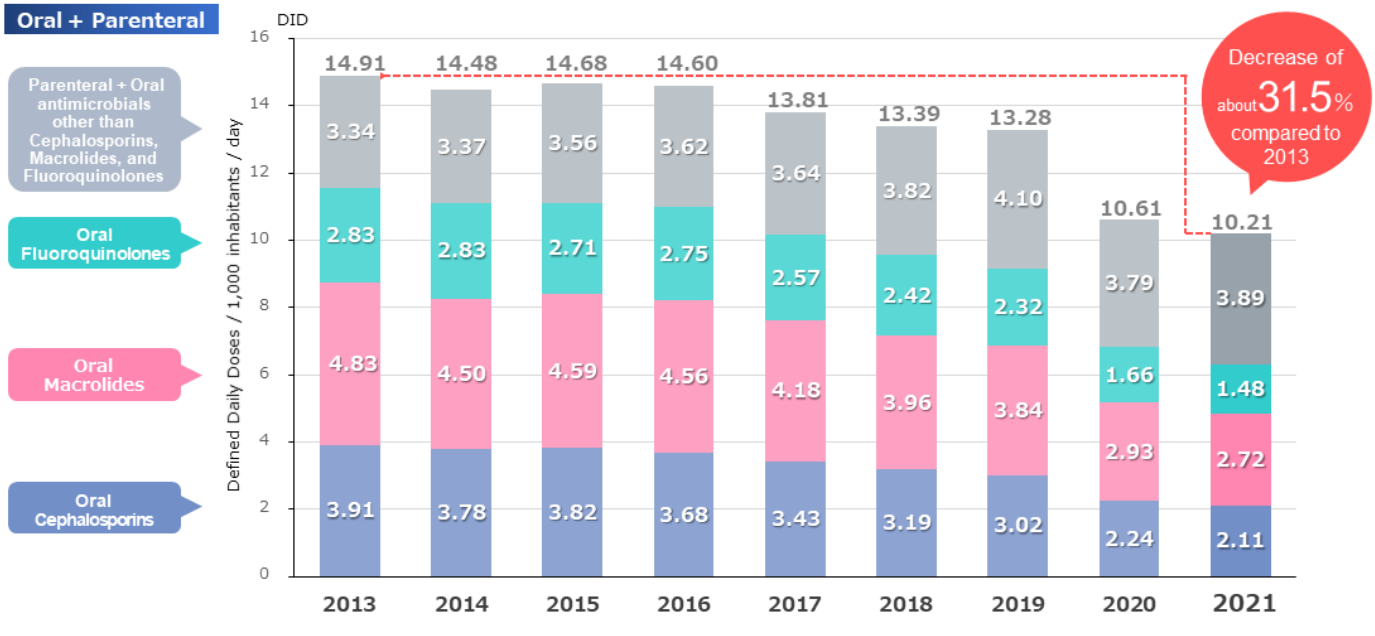
Antimicrobials Consumption based on sales data in 2021 was approximately 31.5% lower than that in 2013 (14.91%)

Increase in drug-resistant bacteria has become a global problem, and the Antimicrobial Resistance (AMR) Countermeasure Action Plan was established in Japan in 2016. The targets set as indices for success by 2020 were (i) decrease in total antimicrobial use to two-third of the 2013 level and (ii) 50% decrease in use of each of the following: oral cephalosporin formulations (wide-spectrum antimicrobial agents), oral fluoroquinolone formulations, and oral macrolide formulations. The antimicrobial use data up to 2020 were reported in 2021, and the national (Japanese) antimicrobial sales data up to 2021 are reported here.

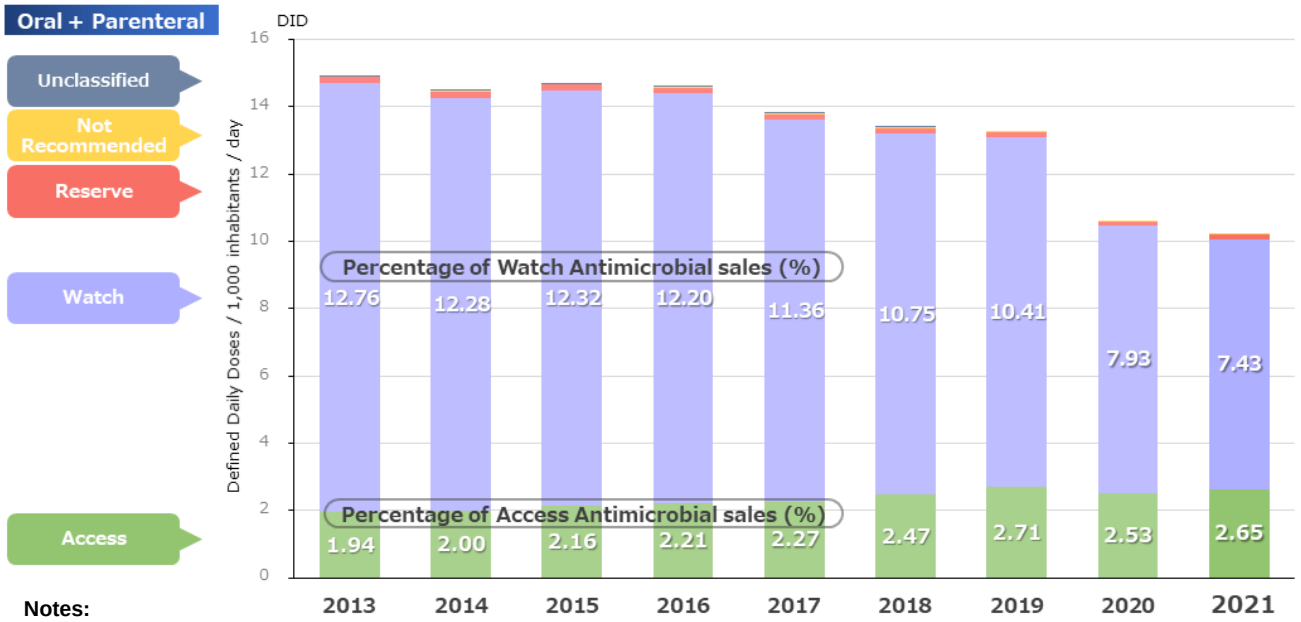
◆ Presented data

On the basis of the 2021 sales data, the daily use of antimicrobials per 1,000 people (DID) was 10.20, showing a decrease by 31.5% from the value of 14.91 in 2013. Even when compared with the 2020 data, sales showed a decrease, albeit minor, by 3.78%. When classified by antimicrobial type, the decreases in comparison with 2013 were 46.1% for oral cephalosporin formulations, which are wide-spectrum antimicrobials; 47.5% for oral fluoroquinolone formulations; and 43.7% for oral macrolide formulations. On the other hand, the use of penicillin, a narrow-spectrum antimicrobial, continued to increase, and it is therefore probable that progress is being made with responsible use. Similarly, with AWaRe classification, an index of responsible use, marked improvement was found between 2013 and 2021, with the Access ratio increasing from approximately 13.0% to 25.9% and the Watch ratio decreasing from approximately 85.6% to 72.7%.

Change in Antimicrobial Consumption in Japan (2013-2021) based on sales data



Change in Antimicrobial Consumption in Japan (2013-2021) based on sales data by AWaRe Classified



Notes:

1) These data are based on antimicrobial sales data and do not show the actual use of antimicrobials in clinical practice. In addition, due to differences between databases, the data are different from those shown by antimicrobial use surveillance based on the National Database of Health Insurance Claims and Specific Health Checkups of Japan (http://amrcrc.ncgm.go.jp/surveillance/010/20181128172333.html).

2) To correct for the differences in level of use due to population size, and for each antimicrobial, the antimicrobial sales data are expressed as DID, which is DDD per 1,000 inhabitants per day. DDD is the Defined Daily Dose as set by the WHO, that is, the target for the routine daily dose of an antimicrobial.

3) The DDD was revised in January 2022. However, for comparison with previous data, the DDD as of January 2017 was used in the calculation.

4) The population data used for each year were those determined by the Statistics Bureau of the Ministry of Internal Affairs and Communications on October 1.

5) The population size was updated in 2021; thus, it was different from that published in February 2022.

6) Drugs were only defined as antimicrobials, the J01 category in the WHO's ATC's classification.

7) AWaRe is an antimicrobial classification system that is recommended by the WHO as an index of appropriate use:

- **Access** Antimicrobials used as first- or second-line agents for general infections. These are antimicrobials that are in wide use, with little concern about resistance, are of high quality, and are reasonably priced in all countries.
- **Watch** Antimicrobials for which the diseases and indications are restricted due to concerns about resistance.
- **Reserve** Antimicrobials uses as the last choice, when use of other treatment methods has become impossible.
- **Not Recommended** Antimicrobials that the WHO does not recommend for clinical use.

The WHO's target is for Access antimicrobials to make up at least 60% of the total.

◆ Overview of results

The AMR Countermeasure Action Plan for 2016 to 2020 set the following indices for success, by comparison with the 2013 levels: (i) reduction of antimicrobial DID to two-third and (ii) reduction of oral cephalosporin formulation, fluoroquinolone formulation, and macrolide formulation use by 50%. After the Action Plan was set, the level of antimicrobial use decreased gradually, although it has decreased markedly since 2020; the calculated data presented here show the tendency being continued in 2021, such that the success indices in the Action Plan are almost being met. It is probable that these decreases are markedly influenced by countermeasures for COVID-19 having been put into practice widely and thoroughly, resulting in decreases in acute airway infection and in the numbers of patients examined and treated at clinics. Appropriate antimicrobial use is of course also a factor, although prophylactic measures for infection contribute to the marked decrease in use of antimicrobials, and these are probably linked to the AMR Countermeasures.