

MEDICAL DEVICE APPLICATION NEEDS TREND

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Abstract: The concept of a medical device is broad. Includes: any instrument, apparatus, equipment, material or other product, used alone or in combination, including software necessary for its proper application, intended by the manufacturer to be used in humans for the purposes of: diagnosis, prevention, monitoring, treatment and relief of the disease. **Purpose:** the study is to investigate the needs of application of medical devices in the provision of medical services by the year 2023. **Methodology:** The used volume of implants was tracked along clinical paths in the conditions of health insurance. A statistical method and a method of extrapolation were used to analyze data from the National Health Fund in Bulgaria for the period 2018-2022. **Results:** Over the years of the period under review, there is an increasing trend in patient demand for implants (number of patients) and an increasing trend in implant application, except for a decline in the same prior to 2020. The decline in implant application needs in 2020 may be due to a change in the structure of morbidity and the reversibility of people to the health system in the conditions of the Covid-19 pandemic. **Conclusion:** Given the growth rate of applied implants over the five-year period, the volume of implants required for medical activity can be predicted. The forecast is in favor of management in the health system at all levels.

Keywords: needs, implants, medical devices

1. INTRODUCTION

The concept of a medical device is broad. Includes: any instrument, apparatus, equipment, material or other product, used alone or in combination, including software necessary for its proper application, intended by the manufacturer to be used in humans for the purposes of: diagnosis, prevention, monitoring, treatment and relief of the disease; the diagnosis, monitoring, treatment, relief or compensation of an injury or disability; the study, replacement or modification of anatomy or a physiological process; birth control whose primary intended action in or on the human body cannot be achieved by pharmacological, immunological or metabolic means, but which can be assisted in its function by such means.

The PURPOSE of the study is to investigate the needs of the application of medical devices in the provision of medical services by the year 2023.

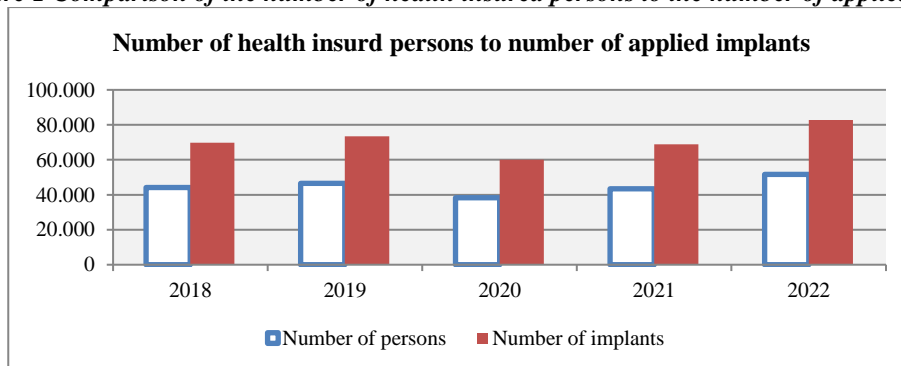
2. METHODOLOGY

The used volume of implants was tracked along clinical paths in the conditions of health insurance in Bulgaria. A statistical method and a method of extrapolation were used to analyze data from the National Health Fund in Bulgaria for the period 2018-2022. Data were processed with Microsoft Excel 2010.

3. RESULTS

During the period "2018 - 2022", a total of 224,026 health-insured persons, who were given implants for various diseases, went through clinical pathways, or an average of 44,865 health-insured persons per year. A total of 355,134 implants were placed on clinical paths, an average of 71,027 implants per year on health-insured persons (Figure 1).

Figure 1 Comparison of the number of health insured persons to the number of applied implants



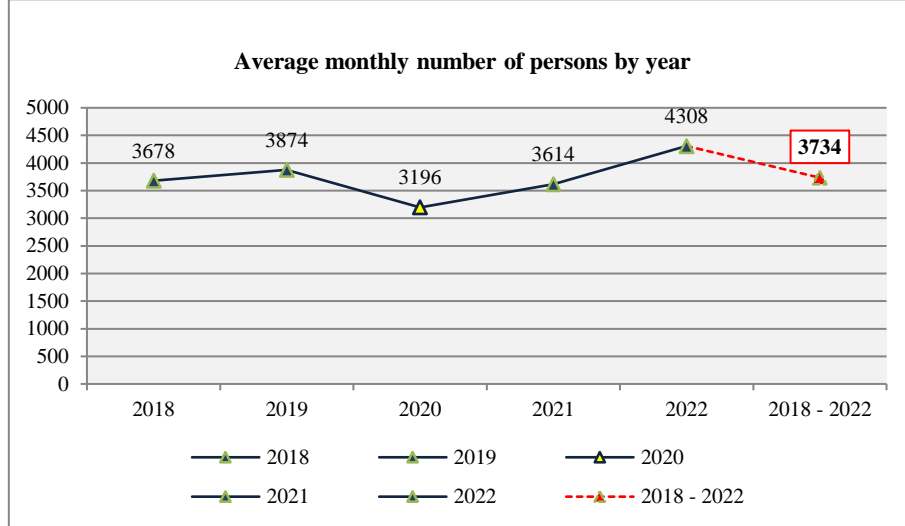
During the years of the considered period, there is an increasing trend in patient needs for implants (number of patients) and an increasing trend in the application of implants, except for a decrease in the same before 2020.

4. DISCUSSION

During the considered five-year period, the values of the two indicators: number of health-insured persons and number of applied implants increased annually.

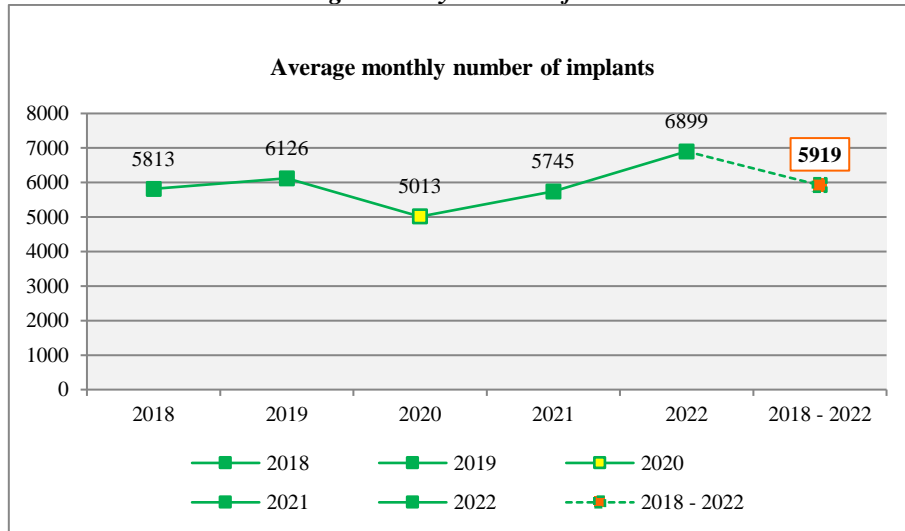
On average, the number of persons needing the application of medical devices amounts to 3,734 persons per month. During the period, there was a fluctuation in the trend of increasing values, which was most pronounced in 2022 (4308 patients) (table 2).

Table 2 Average monthly number of persons requiring application of medical devices



The growth rate of the needs for placing implants in medical activities for the considered five-year period is 18.7%. On average, the monthly number of medical devices, persons needing the application of medical devices amounts to 5,919. There is a fluctuation in the trend of increasing values, which is also most pronounced in 2022 (6,899 pieces of medical devices), (table 3).

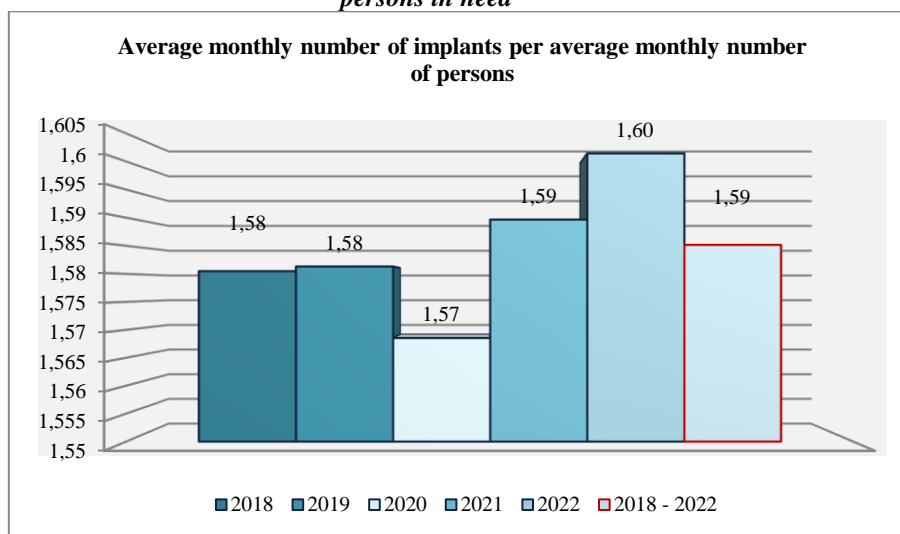
Table 3 Average monthly number of medical devices



The growth rate of applied implants is 17.13%.

During the period, an average of 1.6 implants were placed per health insured person, and the trend over the years remained constant (table 4).

Table 4 Ratio between the average monthly number of medical devices to the average monthly number of persons in need



The decline in the need for implants in 2020 may be due to a change in the structure of morbidity and the reversibility of people to the health system in the conditions of the Covid -19 pandemic.

Considering the growth rate of applied implants during the five-year period, it can be predicted that in 2023. the applied volume of implants will be 1182 more than the previous year 2022. The same will constitute 8,081 implants applied for medical activities in terms of health insurance.

5. CONCLUSION

1. Increase in patients' needs for the application of implants in medical activities;
2. One and a half implants are placed on one patient.
3. Supplemental payment by health insured persons for the application of implants with a growth rate for the considered five-year period is 53%.

Preventive care is exempt from cost sharing, so copays usually do not apply to these office visits.

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