

Medical quality indicators trends during the Coronavirus Pandemic in Israel: Meuhedet Health Services Real Data Analysis and Future Conclusions

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Background:

The history of COVID-19 in Israel included 3 waves, as described below.

The first wave:

February to May 2020

On February 21, Israel confirmed the first case of COVID-19. On March 19, the Israeli government declared a national state of emergency. Israelis were not allowed to leave their homes unless necessary. Essential services would remain open. On March 25, the government imposed stricter restrictions, and people were not allowed to stay more than 1000 m (330 ft) from their homes. Exceptions, for example, include employee arrival to work, permitted according to regulations; acquiring food, medicine, essential products and receiving essential services; and receiving medical treatment. On the eve of the Passover holiday and during that holiday week, which began on the night between Wednesday and Thursday, April 8, 2020, an extensive closure was declared.

The second wave:

May to November 2020

The government's response included limiting social gatherings to 20 people, limiting the number of synagogue worshippers to 19 people, closing gyms, nightclubs, cultural venues, and event halls, limiting the number of people on public buses to 20, and limiting the number of restaurant guests to 20 indoors or 30 for restaurants with outdoor seating.

Objective:

The study focuses on examining the changes in specific quality during the 2 waves between 2020 and 2021 while handling the COVID-19 epidemic. Every curve starts with the regular years of 2018 and 2019.

The specific quality indicators are:

- early detection in colon cancer
- early detection in breast cancer
- eye test in diabetic population
- GFR lab test in diabetic population
- cholesterol lab test in general population ages 55-74
- Rate of Performance of Vaccination against Pneumococcal Disease
- Rate of Performance of Vaccination against Influenza Virus – Ages 65 and above

Methods:

Meuhedet Health Services is the third-largest HMO in Israel and has about 1.28 million insured citizens, with all their medical data managed through computerized electronic files. Demographic information, electronic medical records from primary care physicians, lab tests, medical history of hospitalizations, various treatments in hospitals and institutes, visits and treatments to community physicians, prescriptions and medical equipment consumption, and medical quality indicators are among the data. Medical quality indicators percentage is calculated automatically from the computerized electronic files. Results are presented from 2018 until November 2020, the end of the second wave.

Conclusions:

During a plague that spread fast and caused significant mortality, people hid from medical services. The dilemma of less health compared to feeling safe at home arises here dramatically. The two vaccines supposed to prevent or reduce the symptoms of the diseases in the respiratory system. Since the COVID-19 caused life-threatening disease in the lungs, the sharp increase of the rate of vaccination is clear. Since new variants of COVID-19 will be part of our lives in the next few years, we should learn how to keep on living with the pandemic and develop alternative medical services to improve health states, not go back as described here. Digital services, home care, and remote services must get priority in health plans and resources.

Results:

Fig. 1: illustrates the rate of performance of mammography in women ages 51-74 from January 2018 to November 2020 (end of the second wave).

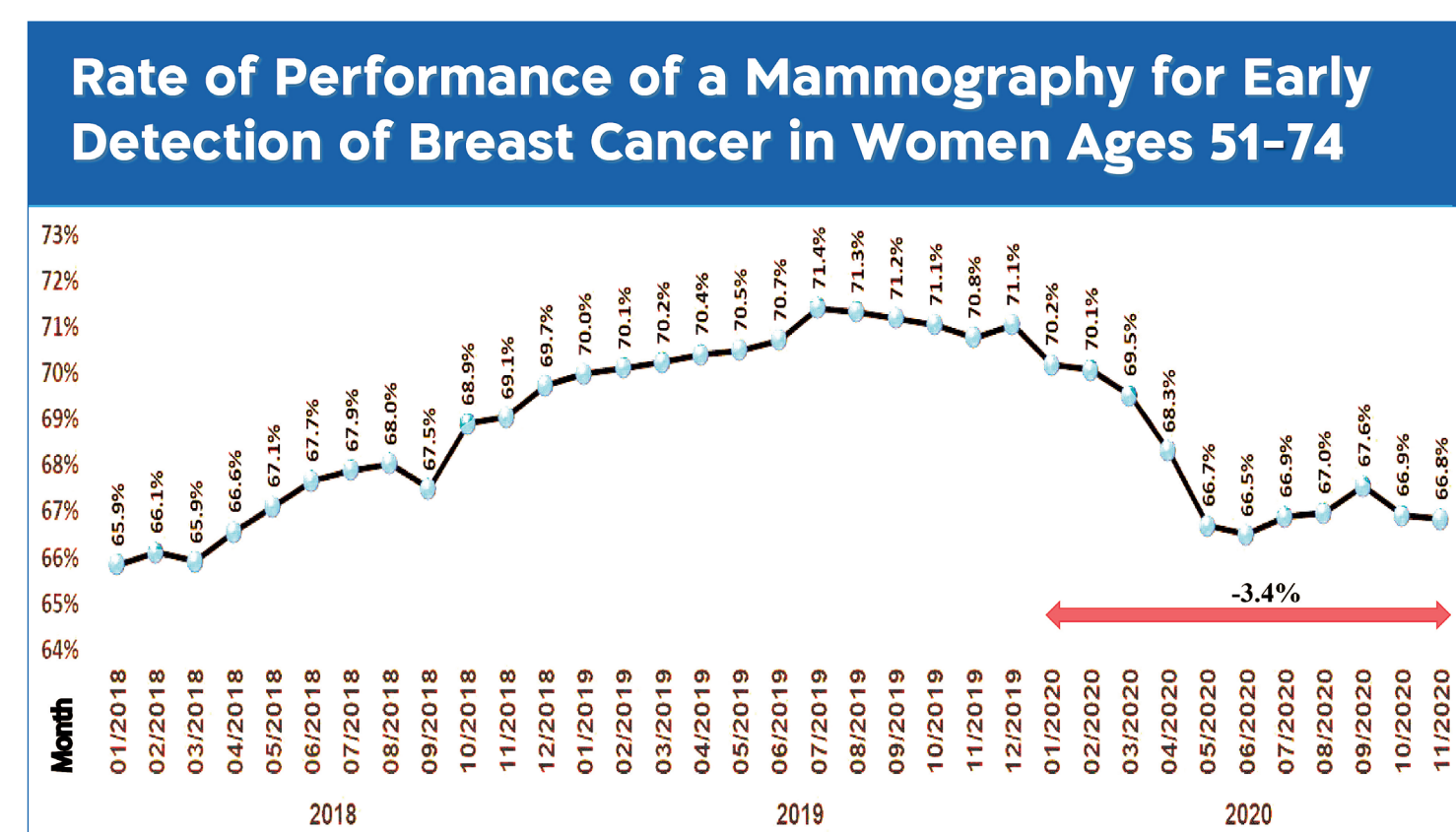


Fig. 2: illustrates the trend of fecal occult blood tests or colonoscopy from 2018 to 2020 (end of the second wave).

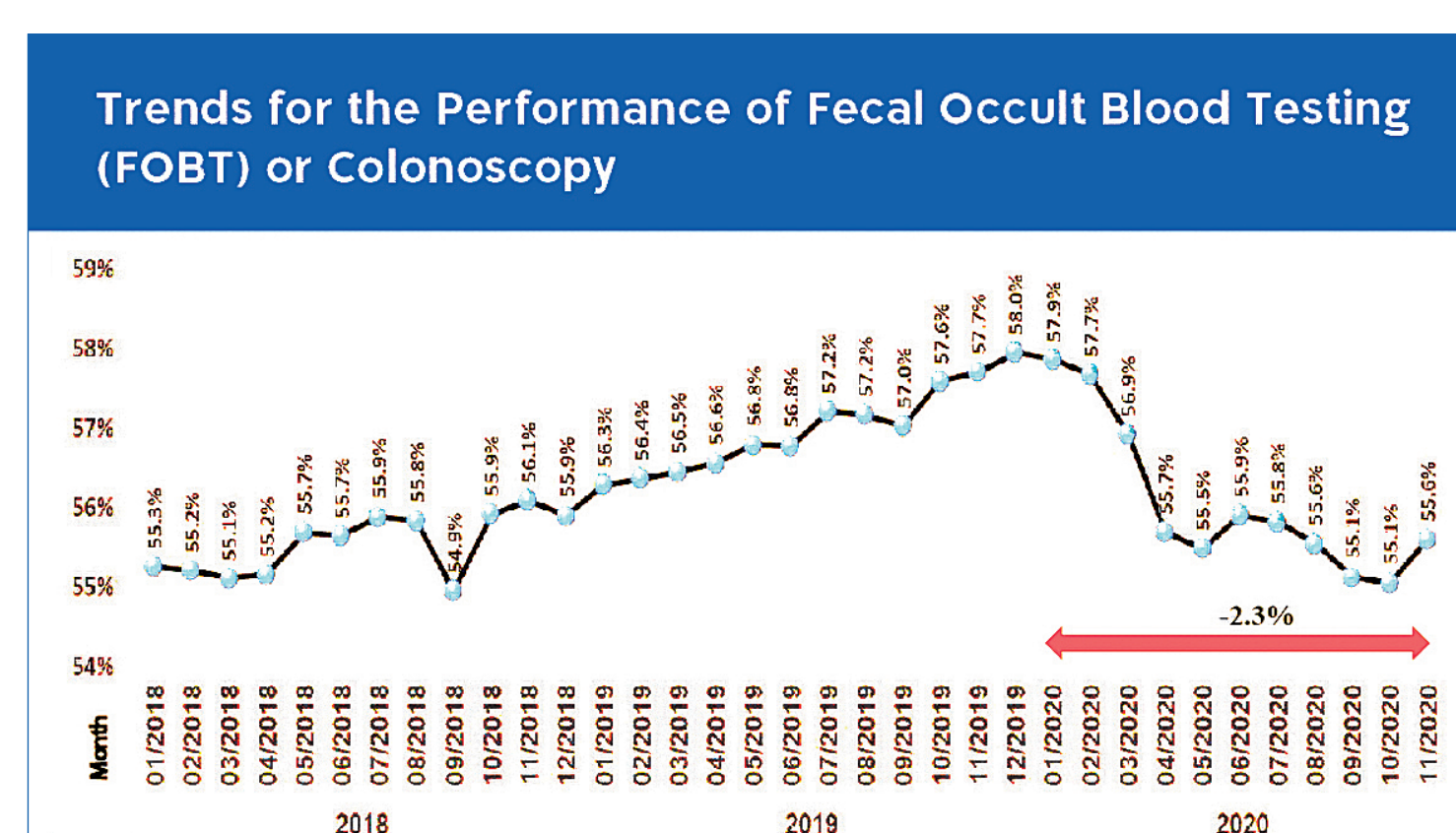


Fig. 3: shows the performance rate of eye tests in diabetes patients ages 18-84 from 2018 to 2020 (end of the second wave).

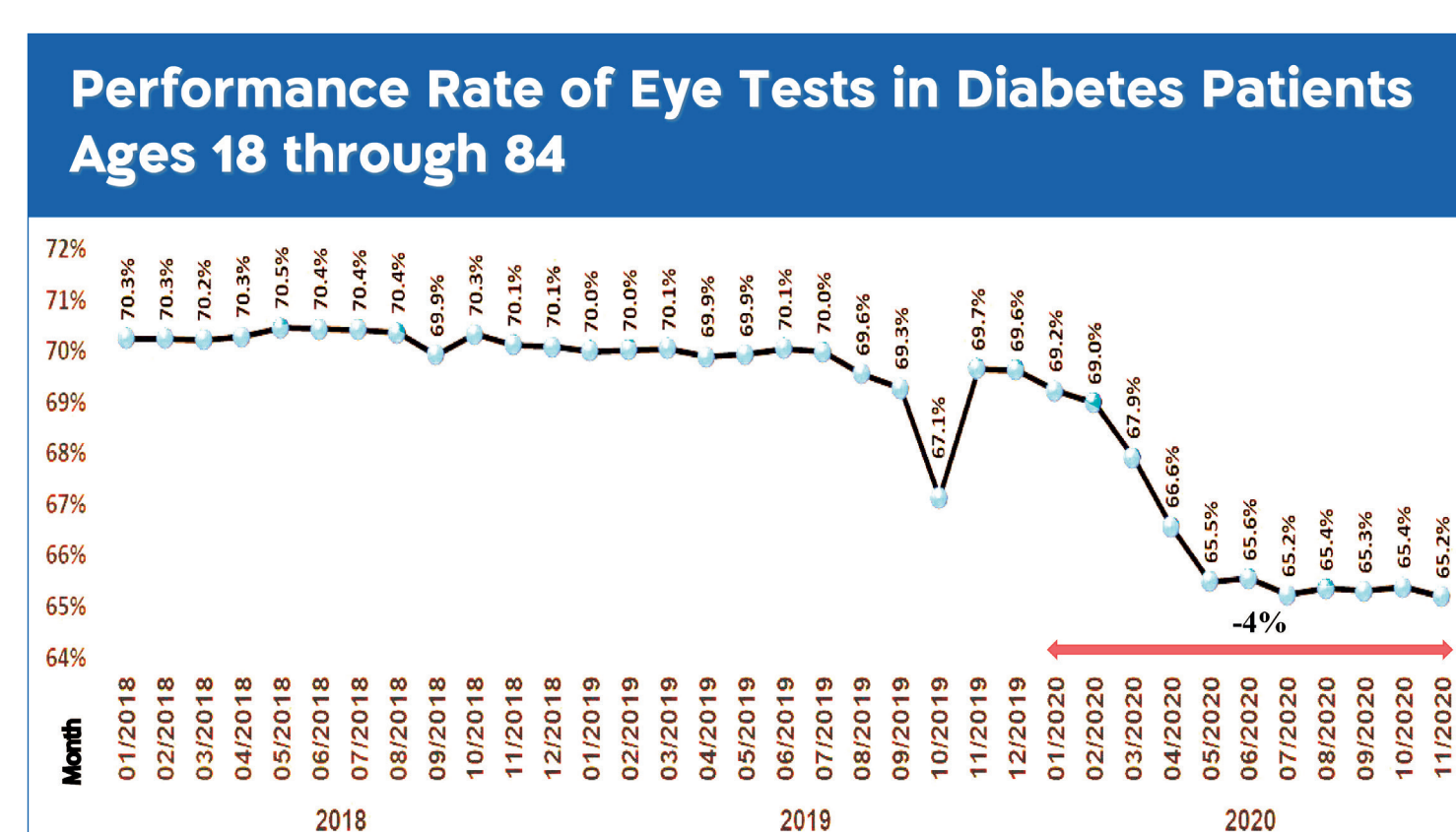


Fig. 4: shows performance rate of GFR lab tests in diabetes patients ages 18 and older from 2018 to 2020 (end of the second wave)

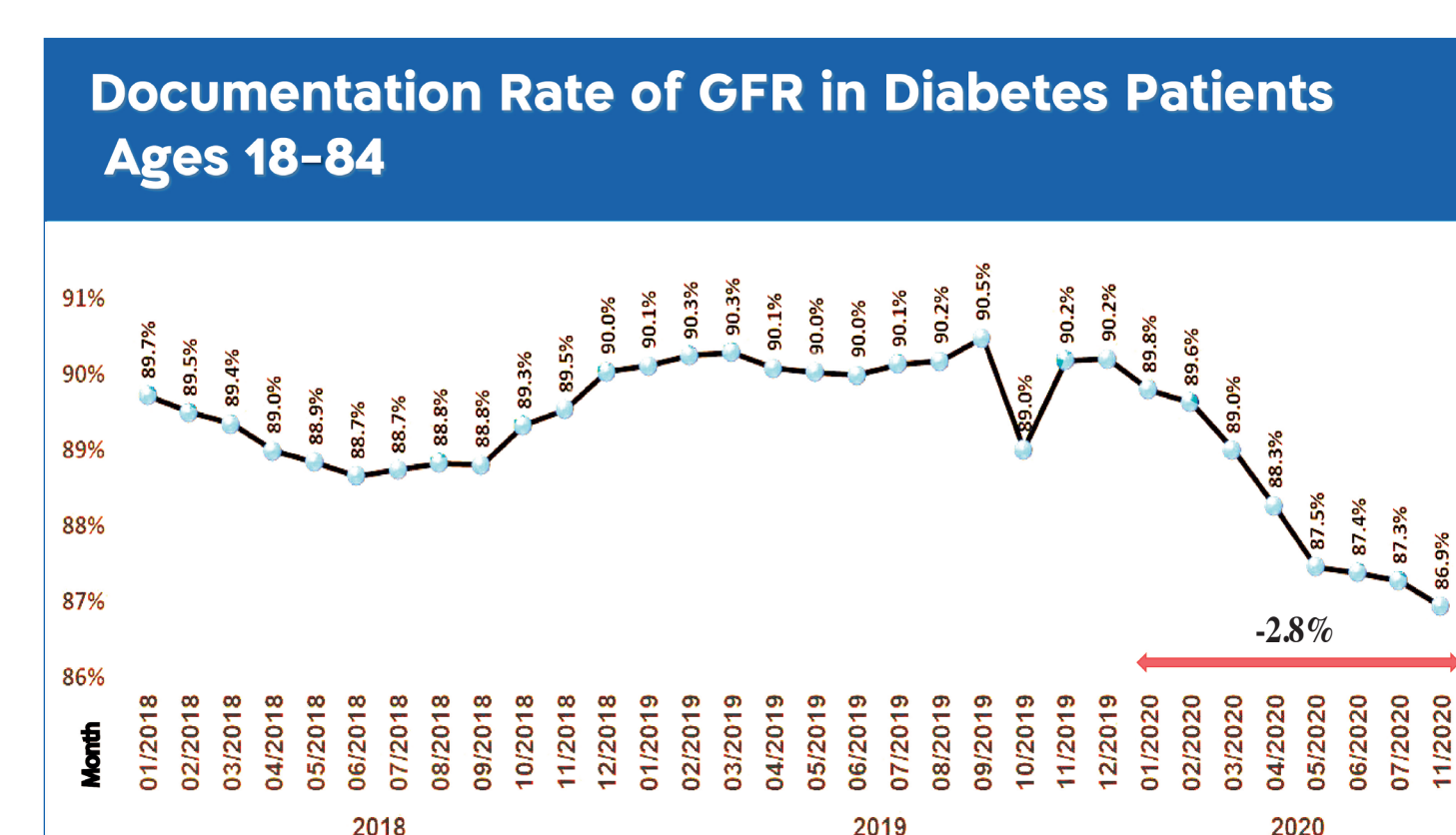


Fig. 5: shows the documentation rate of cholesterol testing among those aged 55-74 from 2018 to 2020 (end of the second wave).

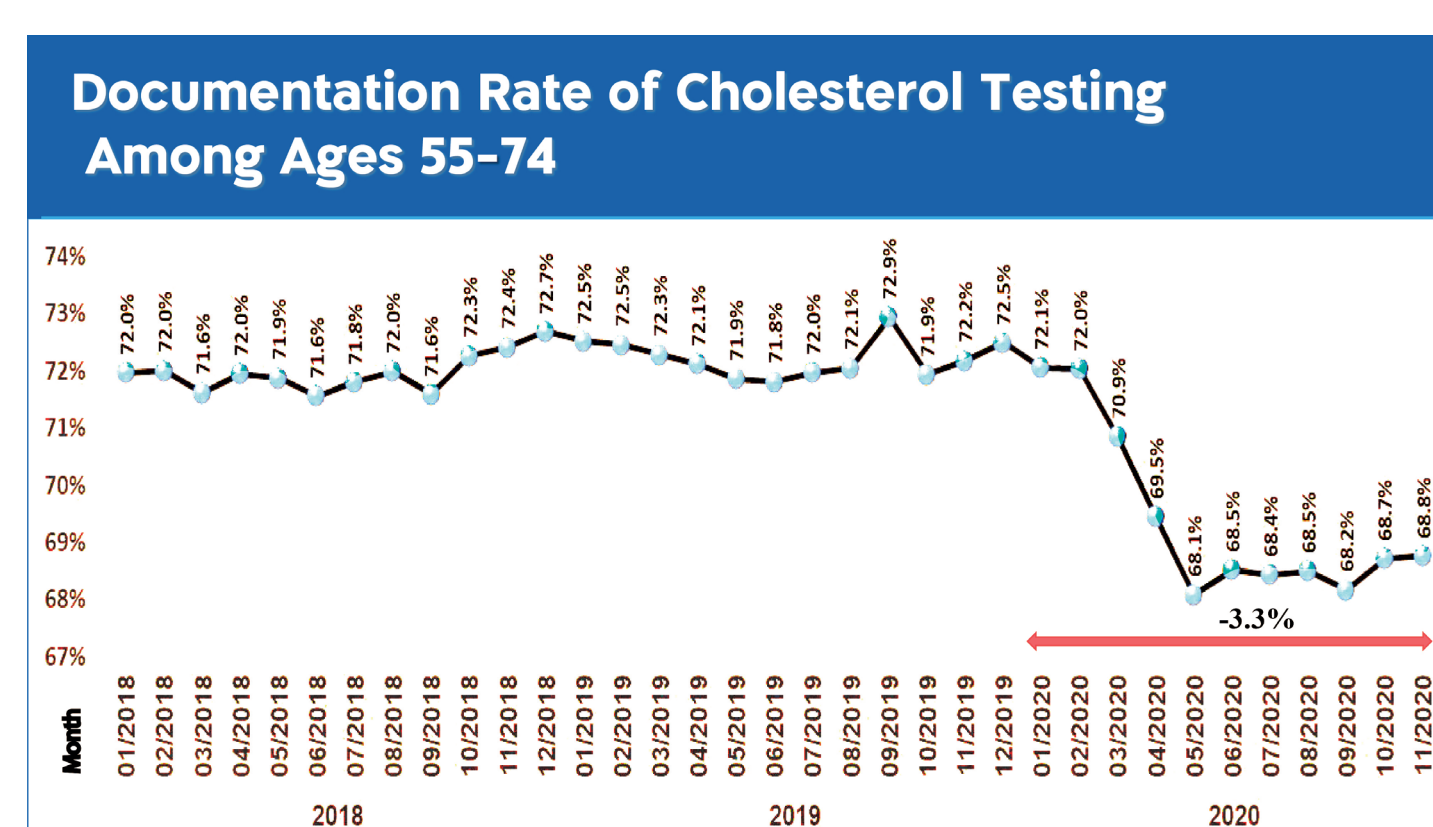


Fig. 6: shows the rate of Performance of Vaccination against Pneumococcal Disease

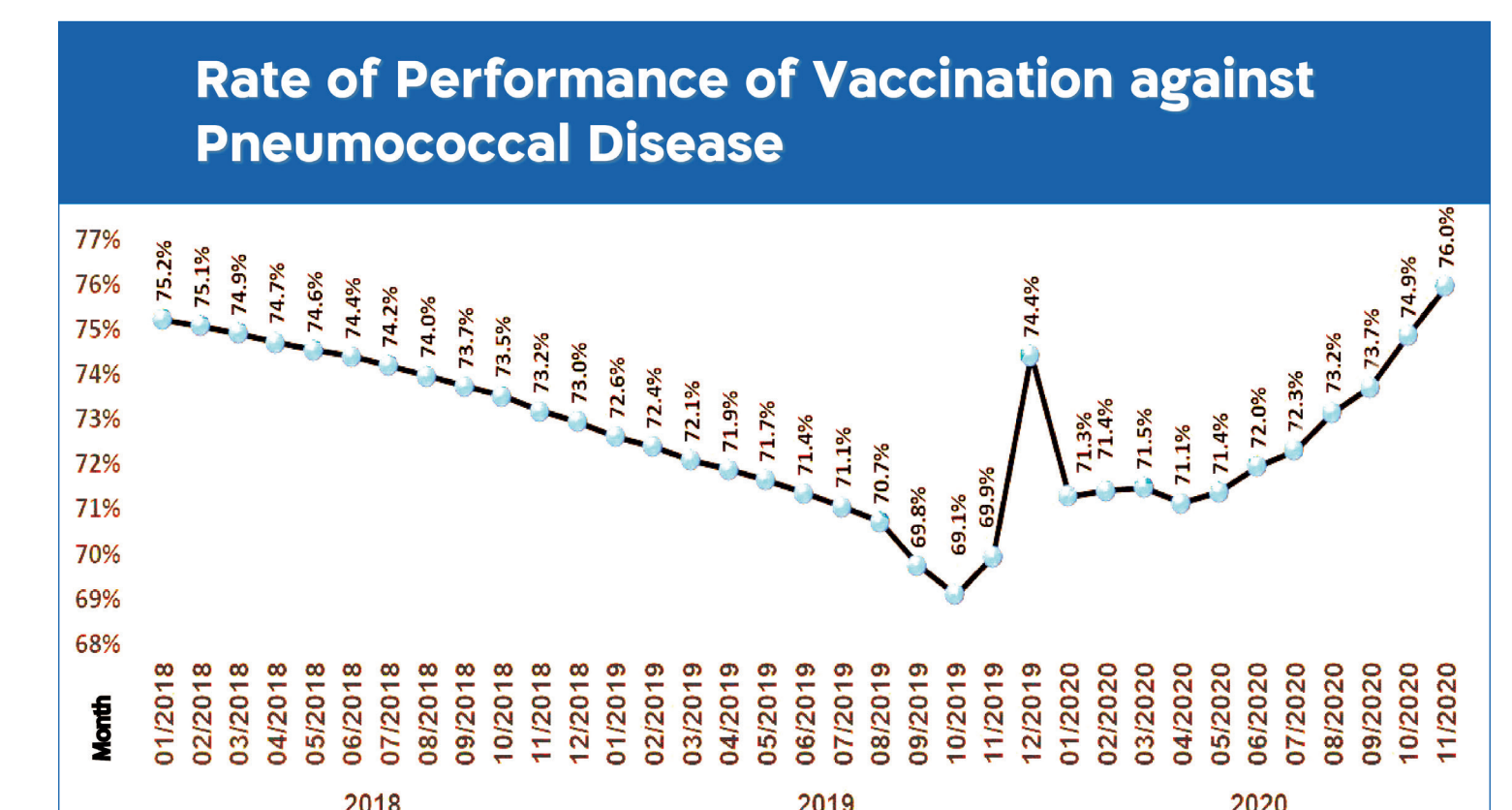
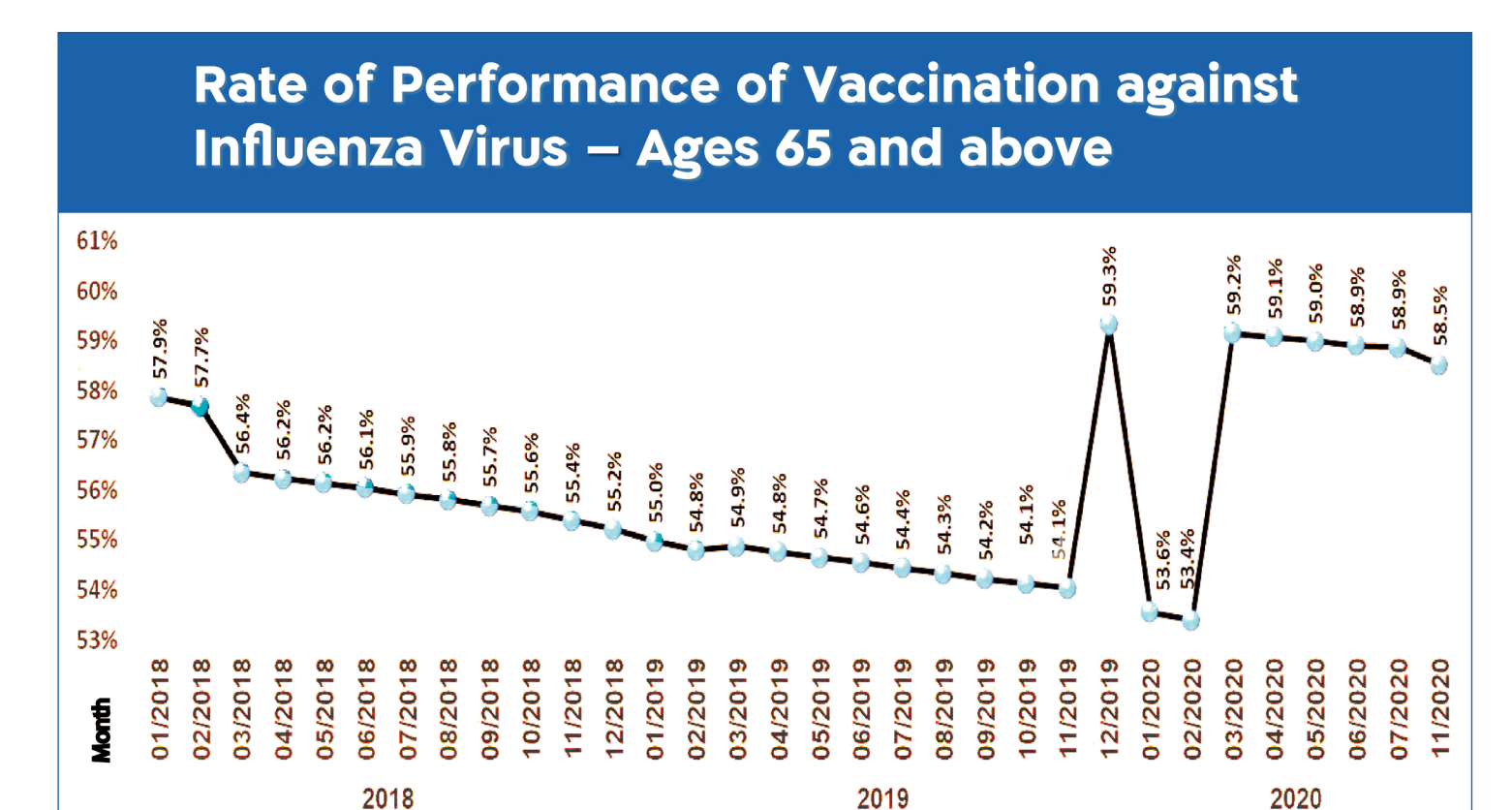


Fig. 7: shows the rate of Performance of Vaccination against Influenza Virus – Ages 65 and above.



Results:

It is clear that the trend in the beginning of 2020 in most of the indicators are a reduction between 2-4%. Mammography rate in Meuhedet patients increase dramatically in 2018-2019 (Fig. 1). The reduction starts at the beginning of 2020, correlated with the first wave, and continues throughout 2020. A reduction of 3.4%, from 70.2% at December 2019 to 66.8% at November 2020, represents a withdrawal of 2 years back. Performance rate of early detection of colon cancer with a total reduction of 2.3% was detected during 2020, starts immediate with the first wave and was remain during 2020 with a level of ~55.5% (Fig. 2). Two indicators of diabetic patients were chosen: 1. Annual eye examination and 2. GFR lab test (Fig 3 and Fig. 4). The primary concern for eye health in people with diabetes is the development of diabetic retinopathy. Performance rate of cholesterol testing among those aged 55–74 in Meuhedet population in 2018 and 2019 looks also stable. The reduction in the performance rate of both diabetic indicators started immediate with the first wave and remains stable along 2020. An opposite trend was detected with the quality indicators of the vaccines (Fig. 6 and 7). No doubt that the COVID-19 pandemic influenced dramatically on the rate of vaccination.

Discussion:

Figures 1-5 indicate that during a plague that spread fast and caused significant mortality, people hid from medical services. The dilemma of less health compared to feeling safe at home arises here dramatically. The results of the first wave indicates a withdrawal of 2 years back. This withdrawal should lead policy makers to allocate resources and health services in order to return as quickly as possible to the high level of the indicators. The two vaccines supposed to prevent or reduce the symptoms of the diseases in the respiratory system. The influenza vaccine reduce the disease complications include viral pneumonia, secondary bacterial pneumonia, and the exacerbation of extant health problems such as asthma, emphysema, chronic bronchitis or heart failure. Since the COVID-19 caused life-threatening disease in the lungs, the sharp increase of the rate of vaccination is clear.