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HEALTHCARE UTILIZATION TREND ANALYSIS OF TURKISH HEALTH SYSTEM

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ABSTRACT

The most basic goal expected from healthcare services is expressed as enhancing the health status of the society. On the other hand, in addition to this main purpose, providing financial caution against the expenses of illness or health is seen as another remarkable goal. In order to achieve these goals, the health system uses limited economic resources. How effectively and efficiently these resources are used is also important for the health system. In this study, the Turkish Health System is tried to be examined in terms of OECD Health Care Utilization indicators through trend analysis. The indicators used in the study were primarily selected from those that did not have any problems with the data. As can be seen in the study, it is seen that OECD Health Care Utilization indicators are affected by factors such as the intensive immigration pressure of the health system and the "Health Transformation Program". However, the biggest limitation encountered in the study is that the data for some indicators are incomplete and erroneous over the years. There are also methodological differences for some indicators. This situation prevents making a long-term evaluation. On the other hand, the impact of the Corona Virus on health care utilization indicators could not be analyzed due to the fact that data on many indicators were available until 2018.

Keywords: Health Economics, Health System, Trend Analysis, Health.

TÜRK SAĞLIK SİSTEMİNİN SAĞLIK HİZMETİ KULLANIMI TREND ANALİZİ

ÖZET

Sağlık hizmetlerinden beklenen en temel amaç, toplumun sağlık statüsünün yükseltilmesi olarak ifade edilmektedir. Diğer yandan, bu temel amaca ek olarak hastalık ya da sağlığın maliyetlerine karşı finansal koruma sağlamak dikkat çeken diğer amaç olarak görülmektedir. Bu amaçları gerçekleştirebilmek için sağlık sistemi sınırlı ekonomik kaynaklar kullanmaktadır. Kullanılan bu kaynakların ne kadar etkin ve verimli kullanıldıkları da sağlık sistemi açısından önem taşımaktadır. Bu çalışmada Türkiye Sağlık Sistemi, OECD Sağlık/Bakım Kullanımı göstergeleri açısından trend analizi vasıtasıyla incelenmeye çalışılmaktadır. Çalışmada kullanılan göstergeler, öncelikli olarak veri konusunda sorun taşımayan göstergelerden seçilmiştir. Çalışmada da görüleceği üzere OECD Sağlık/Bakım Kullanım göstergelerinin sağlık sisteminin yoğun göç baskısı ve "Sağlıkta Dönüşüm Programı" gibi unsurlardan etkilendiği görülmektedir. Buna karşın çalışmada karşılaşılan en büyük kısıt bazı göstergelere ait verilerin yıllar itibariyle eksik ve hatalı olmasıdır. Ayrıca bazı göstergeler için metodolojik farklarda mevcuttur. Bu durum uzun vadeli bir değerlendirme yapmayı engellemektedir. Diğer yandan, birçok göstergeye ait verilerin 2018 yılına kadar ulaşılabilir olması nedeniyle Korona Virüs'ün sağlık hizmetleri kullanımı göstergeleri üzerindeki etkisi analiz edilememiştir.

Anahtar Kelimeler: Sağlık Ekonomisi, Sağlık Sistemi, Trend Analizi, Sağlık.

INTRODUCTION

The main purpose of health systems is to develop the health status of the society. The utilization of health services, which is defined as the fundamental right of individuals, plays an critical role in evaluating the performance of health systems and restructuring the health sector (1).

In this context, many national and international institutions have different studies on healthcare. One of the main purposes of these studies is to analyze how efficiently and effectively the resources allocated to health are used. At this point, the studies of Organisation for Economic Co-operation and Development (OECD) and World Health Organization are pioneering.

Although there has been plenty of research on health system performance evaluation in the literature, studies that evaluate health system performance with trend analysis are very limited. Therefore, the major goal of the present research is to fill this gap in the literature by performing trend analysis using OECD "Health Care Utilitization" indicators. Within the scope of this study, the next section provides a general information on the performance evaluation of the health system. The third section provides an overview of the literature on trend analysis and health trend analysis evaluation, which is the main method of the study.

The findings of the trend analysis are presented and followed by a conclusion in the last section.

HEALTH SYSTEM PERFORMANCE ASSESMENT

Existing health systems in different countries have helped societies for better health, life expectancy and have lessened maternal and infant mortality with varying degrees of success. However, even in countries with similar resource endowments, results differ considerably (2). In order to analyze the effects of health policies on health outcomes, different health systems performance indicators are tried to be created. In this context, there are studies of certain institutions such as the World Health Organization and OECD.

Health System Performance Assesment developed by WHO evaluates the performance of high-level health system targets. Advanced HSPA systems go far beyond a list of indicators and targets. These regulated systems are based on performance based indicators and utilize several analytical tools in a targeted manner. They include the entire health system in a comprehensive manner, instead of just focusing on particular programs or goals. Health System Performance Assesment can assist health authorities in three fundamental functions (3):

- informing health system reforms and policy planning;
- bringing together stakeholders from different sectors behind the strategic health system goals and establishing a dialogue about health system performance;
- promoting transparency and accountability.

Although organization and funding ways are diverse in several countries, what makes them similar is the way that both having similar targets and struggling similar difficulties. The greatest advantage of having an HSPA is that it “provides a snapshot of the healthcare system and allows comparisons to be made with those in other countries. Such comparisons provide an opportunity to learn from each other and explore new options for formulating an potent national health policy” (4).

The study of Murray and Frenk in 1999, was the initial attempt to evaluate health system performance for WHO. This study identified HSPA concepts and measures, as means of three key areas: equity, efficiency and quality (4, 5).

From the study of Murray and Frank to the present, efforts have been made in various fields to develop concepts and make measurement operational. In this direction, the “Health

Services Quality Indicators (HCQI) Project was started by the OECD in 2001. Results from the HCQI project (as of 2007) and the OECD "Health at a Glance" series have helped to make international comparisons. "In 2013, the OECD HCQI data collection process included a total of 70 indicators covering the following themes: Primary Care, Acute Care, Mental Health, Cancer Care, Patient Safety and Patient Experiences" (6).

Individuals benefit from health services whether to be diagnosed and healed illnesses or injuries, or to get information about their health situation (7). In this respect identified as follows; "health care utilization is the quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis" (8).

The main headings of health indicators within the framework of OECD statistics are as follows; "COVID-19 Health Indicators, Health expenditure and financing, Health Status, Non-Medical Determinants of Health, Health Care Resources, Health Workforce Migration, Health Care Utilisation, Health Care Quality Indicators, Pharmaceutical Market, Long-Term Care Resources and Utilisation, Social Protection, Demographic References, Economic References. OECD Health Care Utilization indicators, which form the basis of this study, are examined with 9 sub-indicators as follows; Consultations, Immunisation, Screening, Hospital aggregates, Hospital discharges by diagnostic categories, Hospital average length of stay by diagnostic categories, Diagnostic exams, Surgical procedures, Waiting times" (9).

METHODOLOGY: TREND ANALYSIS

Whether there is a significant decrease or increase (trend) in the measured values of a quantity over time can be investigated by statistical tests (10). The tendency of the observation values obtained about a time-dependent variable to increase or decrease over a long period of time is called "trend" (11). The trend analysis, which is basically associated with the financial statements, can be defined as the analysis method made by comparing the long-term trends of the financial statement items. Thus, the success of the examined variables in a long time and whether they use appropriate resources can be determined and interpreted (12). When evaluated from this point of view, planning, design and structuring to be carried out without looking at the trend in the data may cause serious problems (13).

The trend analysis method is a dynamic method used in examining the trends of the account items in the financial statements by periods (14). In this method, the trends of the items in the financial statements of successive periods according to the items in the financial statements are calculated as a percentage. The base year is usually the first year of the financial statement series. However, for the analysis to be meaningful, the period chosen as the base year must be a normal year in all respects (15). The percentages calculated according to the base year provide information about the positive and negative aspects of the situation between certain periods (14).

Within the scope of the study, only 4 of the OECD's 9 sub-indicators of Healthcare Utilization were included in the analysis. "Screening", "Surgerial Procedures", "Waiting Times", "Hospital Aggregates" and "Hospital Average Length of Stay by Diagnostic Categories" indicators were not included into the analysis due to lack and problems of data. In addition, since some irregularities were observed over the years for the 4 indicators to be analyzed, the analysis was carried out for 8 years covering the years 2011-2018 in terms of the consistency of the study. The data used in the analysis was downloaded from OECD's "Statistical Database".

LITERATURE

In the literature, scholars have paid considerable attention on trend analysis by utilizing this technique extensively especially in finance-related fields. Despite the fact that the subject has been studied so much, it is remarkable that there is almost no interest in trend analysis at the point of healthcare services performance evaluation. In this subsection, trend analysis studies on healthcare services are tried to be presented. The technique, lies behind the trend analysis, is to utilize historical data to make projections or predictions for future (16).

Turkey's health system were evaluated in terms of eight sub-indices, using the trend analysis method in the dimensions determined by the World Health Organization (17). In another study, the state of health expenditures in Turkey between the years 2000-2015 and their effects on basic health indicators examined, and made predictions for the future by determining health expenditure trends (18).

On the other hand, another paper aimed to evaluate the trends in the density of healthcare workers and hospital beds between 2007 and 2015 in the Turkish Republic of Northern Cyprus by using trend analysis (19). Kim and Delen (20) conducted a study to identify the

main subject fields of medical informatics and analyze the changes in these areas over time in their study.

The study of Hung et al. states the trends of the Taiwan's hospital source usage and associated determinants in PMV (prolonged mechanical ventilation) patients (21). Research by Alam and Mahgoub (22) focuses on trend analysis of the efficiency of hospitals in twenty regions of the Kingdom of Saudi Arabia. Also another study is conducted again Taiwan to find answers to the questions; i) is there a relation among alteration in characteristics of patients and hospitals, and ii) what are the predictive ways of medical usage and mortality mechanical ventilation (MV) patients (23).

FINDINGS

OECD "Consultation indicator" consists of "Doctors Consultations" and "Dentists Consultations" sub-indicators. Dentist consultation sub-indicator cannot be used due to break data. As can be seen from the Figure 1 below, a significant increase in "Doctor Consultations" is observed. It can be seen that these increases accelerated especially after the year, 2014.

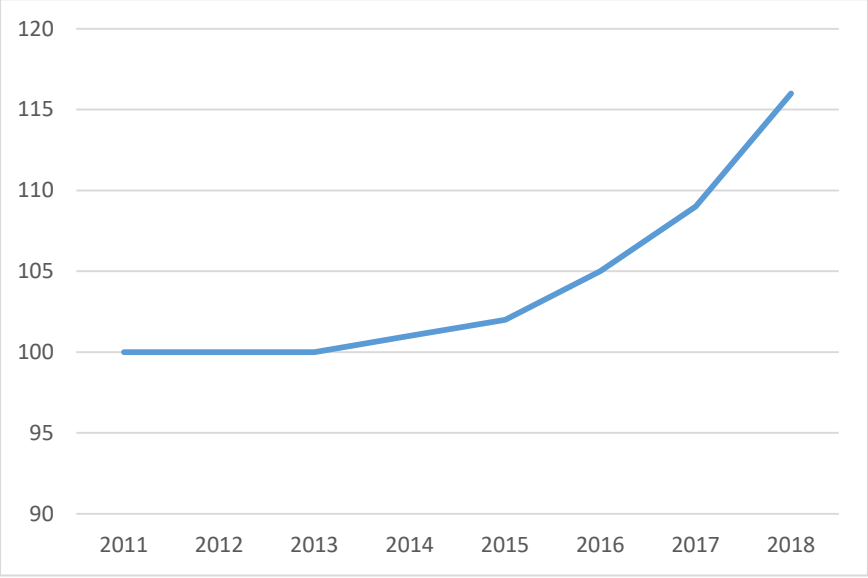

Figure 1: Doctor Consultations (Number per capita).

OECD "Immunisation" indicator consists of (Diphtheria, Tetanus, Pertussis), (Measles), (Hepatitis B), (Influenza) sub-components. In terms of Immunization: Diphtheria, Tetanus, Pertussis sub indicators, it is seen that this factor follows a fluctuating course without experiencing large-scale changes.

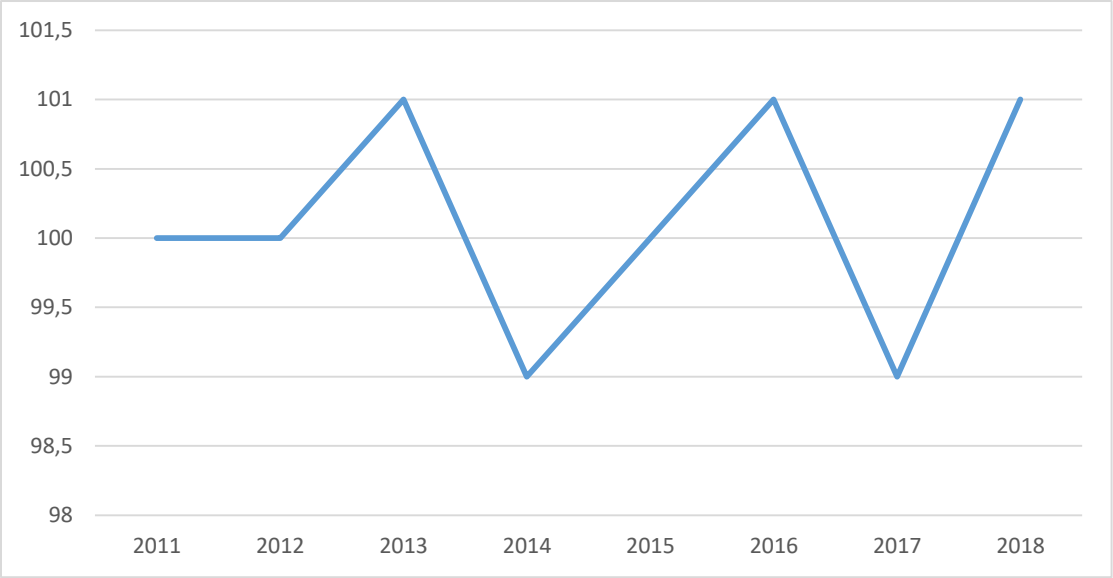

Figure 2: Immunisation: Diptheria, Tetanus, Pertussis (% of children immunised)

In terms of Immunization: Measles (% of children immunised) sub indicators, it is seen that this factor follows a fluctuating course without experiencing large-scale changes (Figure 3).

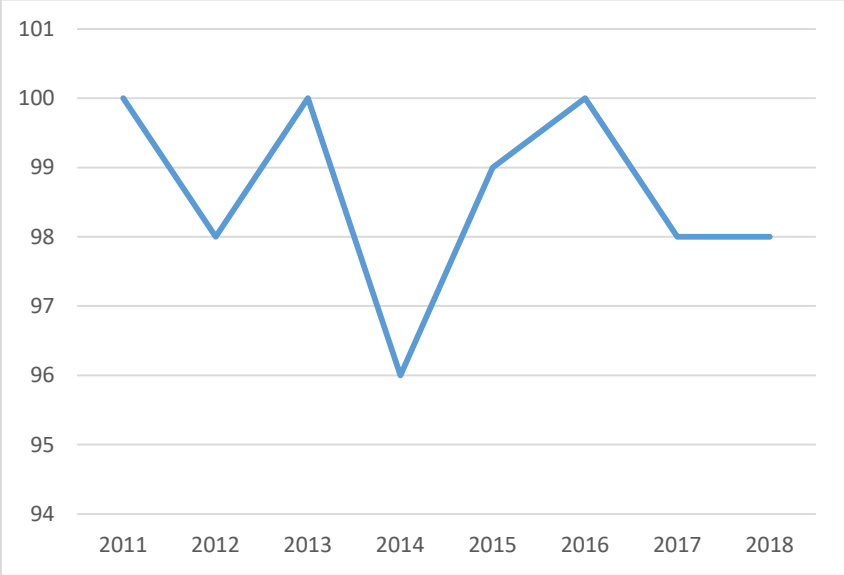

Figure 3: Immunisation: Measles (% of children immunised).

In terms of Immunization: Hepatit B (% of children immunised) sub indicators, it is seen that this factor follows a fluctuating course without experiencing large-scale changes (Figure 4).

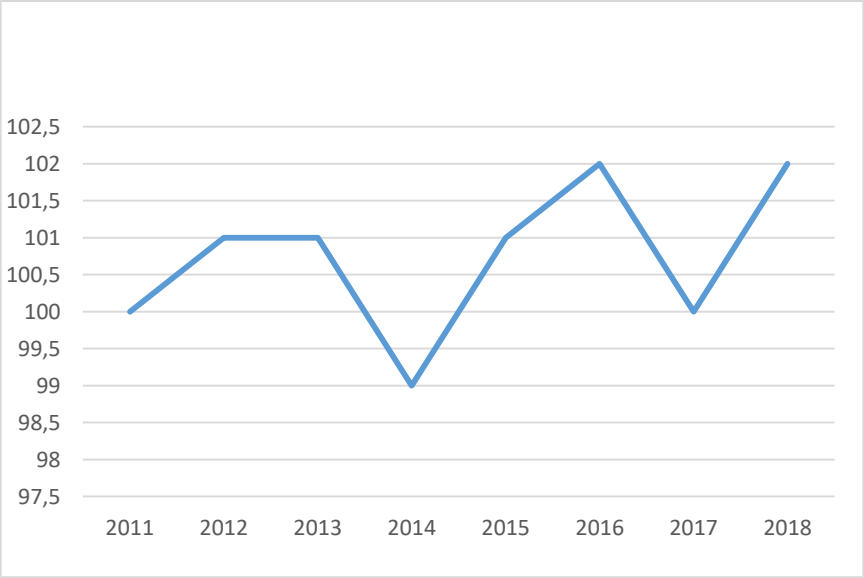

Figure 4: Immunisation: Hepatit B (% of children immunised)

In the analysis performed on the sub-component of the Hospital discharges by diagnostic indicator, All causes (per 100,000 population), an increasing trend is observed until 2015. Since 2015, the indicator has started to decrease (Figure 5).

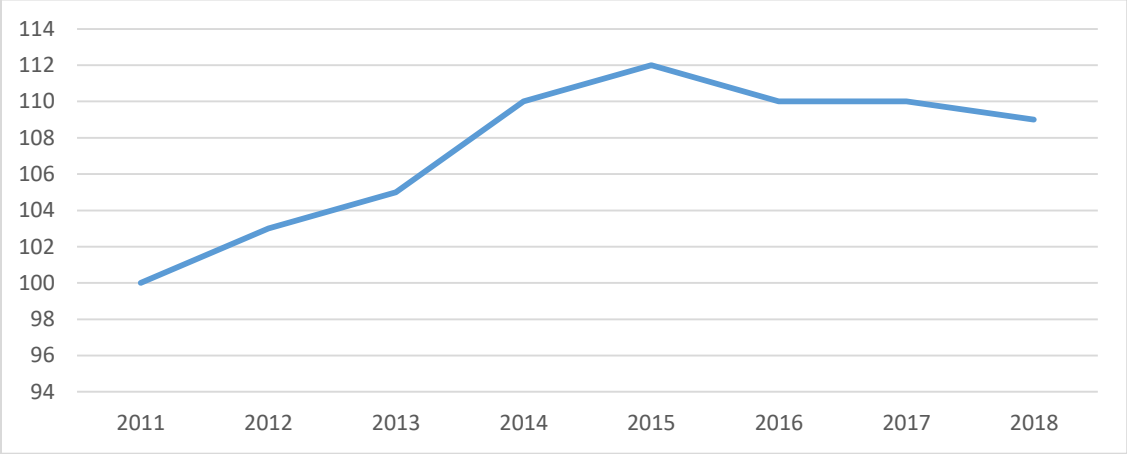

Figure 5: Hospital Discharges By Diagnostic Categories: All Causes (per 100.000 population)

"The Diagnostic Exams" indicator was evaluated for the)" sub-indicators named, "Computed Tomography exams (total)" and "Positron Emission Tomography exams (total). In terms of both sub-indicators, it can be observed that there is a significant increase over time. On the other hand, the "Positron Emission Tomography exams (total)" sub-indicator showed a faster increase than the "Computed Tomography exams (total)" sub-indicator (Figure 6).

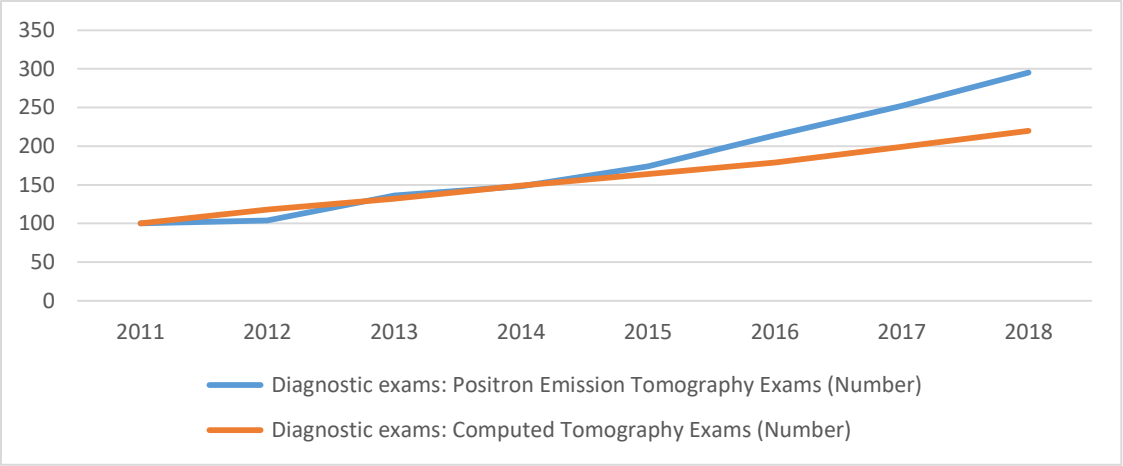

Figure 6: Diagnostic Exams

CONCLUSION

The Health Transformation Program (HTP) has been prepared as an developable and sustainable program within the framework of an approach that takes into account the socio-economic realities of our country. In addition, HTP was founded on an ethical base concept that aims at equal access of citizens to healthcare services as individuals with equal rights (24).

The main purpose of HTP is to organize, finance and deliver health services in an effective, efficient and equitable manner. Efficiency was seen as a relevant criterion in order to increase the health level of the people of the policies to be implemented and to prevent people from getting sick instead of treating the sick. Efficiency is defined as reducing costs and producing more services by using resources appropriately. Equity, on the other hand, is defined as ensuring that all people access health services to the extent of their needs and contribute to the financing of services in proportion to their financial power (25).

A long-term analysis process is required to examine the impact of the HTP on health Care Utilization indicators. The incontrovertible impact of HTP on health outcomes has been studied in different academic studies (26, 27, 28). On the other hand, the incompleteness and problems of the data in Turkey make it difficult to conduct a long-term analysis. Moreover, the wave of immigration towards our country has brought with it some risks in terms of the health system and in particular the use of health services.

From the point of view of “doctor consultations”, a significant increase has been observed in consultations per capita since 2014. This situation can be evaluated as the effect of facilitating access to health services and the pressure on the health system caused by the migration wave. In addition, changes in the financing structure of the health system, the aging of the society, the increase in the health supply capacity, the development of new diagnosis and treatment possibilities can be counted as other reasons for this rise.

A positive performance can also be seen in “immunization”. Although, on the basis of sub-indicators, a performance below the base year was observed in some years, in general, there is not much fluctuation compared to the base year. This can be expressed as a desirable development. Turkey's immunization rates are generally high. When evaluated with the base year, the fact that there is not much change in this indicator can be considered as the continuation of the success in immunity rates.

On the contrary, “Hospital Discharges by Diagnostic Indicator, All Causes (Per 100,000 population)” indicator followed an increasing trend, which was evaluated positively, from its initial year 2011 to 2015. After 2015, this indicator started to follow a decreasing trend. Also, the increasing number of healthy newborn discharges may have an impact on this trend. In general, this indicator is desired to be high in terms of advanced health systems. The fact that, it has a downward trend in Turkey after 2015, is a situation that needs to be followed and the reasons for it to be investigated.

A significant upward trend is observed in terms of the “Diagnostic Exams” indicator, which is evaluated within the framework of the “Positron Emission Tomography exams (total)” sub-indicator showed a faster increase than the sub-indicator named “Computed Tomography exams (total)”. This situation brings to mind the use of faster and reliable health technologies within the framework of the widespread use of technology in health. As a conclusion, demand-side pressures draw attention as a substantial factor of the increase in these indicators.

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