Chapter 6
HES:
A Case Study on Cybersecurity and Privacy Risks in Health Surveillance Systems

Fatma Dogan Akkaya
Kastamonu University, Turkey

ABSTRACT

The COVID-19 pandemic has led to the implementation of digital health surveillance systems worldwide, including Turkey's Hayat Eve Sığar (HES) platform. While effective in monitoring and tracing the virus, these systems also raise concerns about data privacy and cybersecurity risks. This chapter examines potential risks such as data breaches, malware attacks, unauthorized access, misuse of personal health information, and inadequate security protocols. To mitigate these risks, healthcare organizations must implement strong security measures and adopt a culture of security with a focus on continuous improvement and proactive risk management. The HES in Turkey provides a valuable case study for understanding these risks and measures to mitigate them. The chapter highlights the growing trend of digital health services invading individuals' private spaces and regulating their lives, emphasizing the importance of data privacy and security in safeguarding personal health information.

INTRODUCTION

Our Ford himself did a great deal to shift the emphasis from truth and beauty to comfort and happiness. Mass production demanded the shift. Universal happiness keeps the wheels steadily turning; truth and beauty can't. (Huxley, 1932, p. 201)

Mass behaviour control policies, such as mass surveillance, restrictions, and limitations on movement, which we are used to seeing in dystopian novels and movies, have abruptly and daringly entered our lives with the peak of the COVID-19 epidemic in 2020. Many countries have developed various networked disease monitoring systems to monitor and control the spread of the disease, leveraging their technological infrastructure and capabilities. The introduction of these systems has been sudden and

without prior notice, highlighting the urgency of the situation and the need for effective measures to contain the pandemic.

The COVID-19 pandemic has prompted the deployment of digital health surveillance systems globally, one of which is Turkey's *Life Fits Home*, Hayat Eve Sığar (HES), platform. HES is a digital platform developed by the Turkish Ministry of Health in response to the COVID-19 pandemic. From 2020 to 2022, the HES was heavily utilized as a tool for monitoring and tracking the spread of the virus during the pandemic. It offers individuals the most current information on their COVID-19 situation and enables them to report any symptoms and contacts they may have had. Individuals can use the platform as a mobile application, a website, and a call centre to report their symptoms and receive guidance on whether to seek medical attention or get tested for COVID-19. This data is used to identify and notify individuals who may have been exposed to the virus. One of the key features of the HES platform is its QR code system. Individuals who have tested negative for COVID-19 can generate a QR code that can be used to access public spaces such as shopping centres, restaurants, and public transportation. The QR code is scanned by officials at the entrance to these spaces, verifying the individual's COVID-19 status and allowing them to enter if they are not infected. The HES platform also includes a range of other features, such as real-time updates on the number of COVID-19 cases, hospital bed availability, and information on COVID-19 testing centres. The platform is updated regularly with new information and guidance as the situation around the pandemic evolves. Although the HES platform is still operational, the data it provides no longer results in restrictions in public spaces. Nevertheless, this system contains a range of software and quantitative data that can be rapidly activated in the event of any potential epidemic.

In this paper, the HES system will serve as a case study for analysing these cybersecurity risks in health surveillance systems. Between 2020 and 2022, it was obligatory to display the HES code in public areas and events such as workplaces, schools, hospitals, intercity buses, shopping centres, football matches or various events. It means that HES, an app that manages digital apps and QR codes on smartphones, collects vast amounts of personal data and health records from millions of people for the first time and in a cyber program of this scale. From the point of view of health surveillance systems, the HES program has shown how technology-supported health services can be provided instantly by reaching the recipients and has proven that it will make a great contribution to increasing the quality of public health. However, on the other hand, what precautions are taken in case of data breaches regarding users' information, which security protocols are adhered to, or how and where the huge data stored, are possible weaknesses of HES and all digital health surveillance systems using the same method in the world. Additionally, the chapter will examine the challenges faced by the Turkish government in implementing the HES system, including public trust, data privacy concerns, and limiting personal rights. In order to gain a comprehensive understanding of the use and implications of digital health surveillance systems, it is necessary to examine not only the example of Turkey, but also similar applications implemented worldwide in response to the COVID-19 pandemic. Therefore, the discussions of privacy and data security concerns developed around the HES and other similar digital applications will lead us to examine the repercussions of the suspension of basic human rights for the benefit of public health in the global arena.

The theoretical foundation of surveillance phenomena is crucial in understanding the operation of surveillance practices, their societal and cultural ramifications, and the power dynamics involved. Therefore, this chapter will commence by examining the theoretical discourse on the healthcare context, where digital health surveillance systems have become indispensable in the monitoring and management of public health. This chapter will further explore the potential risks associated with digital health surveillance systems, including data breaches, malware attacks, unauthorized access, misuse of personal

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