

## THE IMPACT OF THE COVID-19 PANDEMIC ON QUALITY OF CARE IN ISRAELI HOSPITALS

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### Summary

The study goal was to assess the impact of the COVID-19 pandemic on strategies used by Israeli hospitals to improve quality of care, patient safety, patient experience and clinicians' well-being. Leaders of public hospitals in Israel were asked to complete questionnaires regarding the impact of COVID-19 on quality. Fourteen of 29 public hospitals participated. Statistically significant differences were noted in the impact of COVID-19 on infection control and clinician well-being by hospital ownership, but no other differences were found. The COVID-19 pandemic had mixed impacts on most domains. Positive impacts were noted to some extent in patient safety and infection control, while waiting times for outpatients and clinicians' well-being were more likely to be negatively influenced. The most common topics which were advanced during the COVID-19 pandemic were infection control, performance in national quality indicators, reporting of adverse events and near-miss events and care of diabetes, patient and family support in the COVID-19 unit, care in the emergency department, care of labor and delivery, supplying information for patients and the development of online services and telemedicine.

Keywords: quality, patient experience, infection control, COVID-19, pandemic

### Резюме

**Влияние пандемии COVID-19 на качество помощи в израильских больницах**

Цель исследования состояла в том, чтобы оценить влияние пандемии COVID-19 на стратегии, используемые израильскими больницами для улучшения качества обслуживания, безопасности пациентов, качества обслуживания пациентов и благополучия врачей. Руководителей государственных больниц в Израиле попросили заполнить анкеты о влиянии COVID-19 на качество. В нем приняли участие 14 из 29 государственных больниц. Были отмечены статистически значимые различия во влиянии COVID-19 на инфекционный контроль и благополучие врачей в зависимости от принадлежности больницы, но других различий обнаружено не было. Пандемия COVID-19 оказала неоднозначное воздействие на большинство областей. Положительные последствия были отмечены в некоторой степени в отношении безопасности пациентов и инфекционного контроля, в то время как время ожидания амбулаторных пациентов и самочувствие клиницистов, скорее всего, подверглись негативному влиянию. Наиболее распространенными темами, которые поднимались во время пандемии COVID-19, были инфекционный контроль, выполнение национальных показателей качества, отчетность о

нежелательных явлениях и критических ситуациях, а также лечение диабета, поддержка пациентов и их семей в отделении COVID-19, уход в отделение неотложной помощи, родовспоможение, предоставление информации пациентам и развитие онлайн-сервисов и телемедицины.

**Ключевые слова:** качество, опыт пациента, инфекционный контроль, COVID-19, пандемия

### Rezumat

**Impactul pandemiei de COVID-19 asupra calității îngrijirii în spitalele israeliene**

Scopul studiului a fost de a evalua impactul pandemiei de COVID-19 asupra strategiilor utilizate de spitalele israeliene pentru a îmbunătăți calitatea îngrijirii, siguranța pacienților, experiența pacientului și bunăstarea clinicienilor. Liderii spitalelor publice din Israel au fost rugați să completeze chestionare cu privire la impactul COVID-19 asupra calității. Au participat paisprezece din cele 29 de spitale publice. Au fost observate diferențe semnificative din punct de vedere statistic al impactului COVID-19 asupra controlului infecției și asupra bunăstării clinicianului în funcție de afilierea spitalelor, dar nu au fost găsite alte diferențe. Pandemia COVID-19 a avut impacturi mixte în majoritatea domeniilor. S-au observat într-o oarecare măsură impacturi pozitive în siguranța pacienților și controlul infecțiilor, în timp ce timpii de așteptare pentru pacienții ambulatori și bunăstarea medicilor erau mai susceptibile de a fi influențate negativ. Cele mai frecvente subiecte care au fost avansate în timpul pandemiei de COVID-19 au fost controlul infecțiilor, performanța în indicatorii naționali de calitate, raportarea evenimentelor adverse și a evenimentelor aproape de accident și îngrijirea diabetului zaharat, sprijinul pacientului și familiei în unitatea COVID-19, îngrijirea în departamentul de urgență, îngrijirea travaliului și a nașterii, furnizarea de informații pentru pacienți și dezvoltarea serviciilor online și telemedicină.

**Cuvinte-cheie:** calitate, experiența pacientului, controlul infecțiilor, COVID-19, pandemie

### Introduction

This paper describes the impact of the COVID-19 pandemic on Israeli hospitals' efforts to improve the quality of care, patient safety, and patient experience, based on a survey conducted by the author.

The COVID-19 pandemic was officially declared in March 2020, after a rapid vehement global spreading of the disease [4, 8]. The pandemic has caused

overwhelming effects on hospitals and healthcare facilities [3]. Some of these effects – the risk of being in the “frontline” fighting the disease, the high surge in workload burden – had compelling effects on healthcare workers [3, 5, 17].

The degree of investigation of the problem at present, the purpose of the research

The COVID-19 pandemic had a very strong influence on healthcare systems worldwide. Where people got used to certain standards of care, some compromises need to be done. Sabetkish & Rahmani [14] lists several influences of the COVID-19 pandemic on the healthcare system. These include postponement of elective procedures and non-urgent medical care, increased use of telemedicine, decrease in outpatient visits and negative impact on training programs [14]. Additional aspects include limited access for hospital visitors and suspension of volunteer programs [10]. A drop in the number of emergency department visits was seen in many countries, including the US, United Kingdom, Italy, Thailand, Jordan and Israel [1, 18]. In a study of 1.3 million visits to the emergency department during 2018-2021, a 22% decrease in visits to the medical ED was noted, while visits to the surgical ED dropped by 19%. Thirty-days mortality following a visit to the medical ED increased by 8%, while for the surgical ED it increased by 18% [18]. Several reports regarding quality indicators in various countries reported decreased compliance with the measures. In the USA, the Centers for Medicare and Medicaid suspended the reporting of quality indicators, and data for the first six months of 2020 was announced to be excluded from the evaluation and payment programs of American hospitals [12]. In contrast, reporting to the National Quality Indicator Program in Israel continued as before. A report by Konson et al. [12] showed that while the caseload for many indicators decreased, performance rates in general hospitals were preserved and even increased. As in previous epidemics, a disproportionate burden on the poorest and most disadvantaged populations was noted in Jordan [1] and in Israel, leading to widening social inequalities. Obviously, the pandemic had a negative impact on the well-being of clinical staff. In a study of 600 frontline clinicians in Australia, concerns were raised regarding infecting family members, friends and colleagues with COVID-19, the proper use of protective equipment, and its effect on patient care, concerned regarding the quality of care provided, and various personal concerns [10]. In a study of Israeli healthcare workers, the negative impact of quarantine was noted mainly among nurses, with feelings of shame related to the need for quarantine especially noted [9].

The goal of the present study, conducted as a part of a broader study of strategies used to improve quality in Israeli hospitals, focuses on the question whether there could be some opportunities to learn from the experience gathered in this harsh period in order to further advance healthcare systems. It could be hypothesized that some of the “energy” of leaders of the healthcare system in these countries was focused on coping with COVID-19 and that less focus was available for continuing routine quality monitoring activities. In addition, the performance in some indicators (e.g., adherence to preventive measures) could be declining due to reduced compliance and lockdowns. The study’s hypothesis was that the COVID-19 pandemic will have mainly negative impacts on hospital performance, but some positive trends will also be found.

### Methods and materials applied

The goal of the present study was to examine the impact of COVID-19 on quality and patient safety, patient experience and clinicians’ well-being. Senior leaders (Director Generals, Deputy Director Generals, Nursing Directors and Administrative Directors) in Israeli general public hospitals were interviewed regarding initiatives related to quality, patient safety, patient experience and clinicians’ well-being, as well as the positive and negative impacts of the pandemic. Questionnaires were filled by the respondent and sent by mail. Questionnaires included questions about topic related to clinical quality and patient experience that were advanced during the pandemic. Similar questions were asked in each domain (“Did the COVID-19 pandemic had positive, negative, mixed, or no effect on this domain?”; “Which positive impacts did the COVID-19 pandemic had on this domain?”; “Which negative impacts did the COVID-19 pandemic had on this domain?” Data was cross-tabulated against the various domains of quality. The results are graphically described using pie chart. For the description of specific questions related to quality and patient safety, results were listed in a table or are quoted in the text.

In Israel, there are 329 hospitals. Of these, 43 are general hospitals. Of the 43 hospitals, there are 29 public hospitals. Of these, 18 representatives responded.

### Results obtained and discussion

Most respondents (15, 83%) were CEO or deputy CEO, male (12, 67%), and in the age group of 41-50 years (11, 61%). The impact of COVID-19 on various domains is listed in Table 1.

**Table 1**

*Positive, negative and mixed impact of COVID-19 on quality in Israeli hospitals*

Domain	Positive impact	Mixed impact	Negative impact	No Impact
Quality (n=17)	3 (18%)	11 (65%)	3 (18%)	0 (0%)
Patient safety	6 (33%)	7 (39%)	1 (5.6%)	4 (22%)
Infection control	8 (44%)	8 (44%)	1 (5.6%)	1 (5.6%)
Patient experience	5 (28%)	8 (44%)	5 (28%)	0 (0%)
Waiting times for outpatients	1 (5.6%)	6 (33%)	6 (33%)	5 (28%)
Clinicians' well-being	0 (0%)	10 (56%)	8 (44%)	0 (0%)

Source: elaborated by the author based on a survey of Israeli public hospitals

The COVID-19 pandemic had mixed impacts on most domains. Positive impacts were noted to some extent in patient safety and infection control, while waiting times for outpatients and clinician's well-being were more likely to be negatively influenced.

We examined the association between hospital attributes, including ownership (government or Clalit healthcare provider organization), hospital size,

location within Israel, and accreditation status on hospital's responses (Table 2). The only statistically significant difference found was that in hospitals owned by the government there was a higher percentage of responders indicating positive impact of the pandemic on infection control, while also a higher percentage indication negative impact on clinician well-being (Table 2).

**Table 2**

*The association between impact of COVID-19 on quality in Israeli hospitals and hospital attributes*

Domain	Hospital size	Hospital ownership	Location (periphery vs. center)	Accreditation status
Quality	0.808	0.768	0.742	0.410
Patient safety	0.969	0.374	0.142	0.854
Infection control	0.258	<b>0.009*</b>	0.488	0.862
Patient experience	0.603	0.207	0.538	1.000
Waiting times for outpatients	0.512	0.963	0.854	0.199
Clinicians' well-being	0.386	<b>&lt;0.001**</b>	0.180	0.680

Data presented are p-values for the cross-tabulation of hospital attributes and impact of COVID-19 on the various domains.

\* In government owned hospitals, 86% indicated positive impact while none indicated negative impact; in Clalit-owned hospitals, 18% indicated positive impact while 9% indicated negative impact

\*\* In government owned hospitals, none indicated positive impact while 100% indicated negative impact; in Clalit-owned hospitals, none indicated positive impact while 9% indicated negative impact and most (91%) indicated mixed impact.

Source: elaborated by the author based on a survey of Israeli public hospitals

In terms of clinical quality, the most commonly cited positive impact was the use of telemedicine and digital services, while the most commonly cited negative impact was less focus from management / resource allocation. The most common topics related to quality which were advanced during the COVID-19 pandemic were infection control, performance in national quality indicators, reporting of adverse events

and near-miss events and care of diabetes (Figure 1).

The most commonly cited positive impacts of COVID-19 on patient safety were increased awareness to infection prevention and safety, better monitoring equipment and infrastructure and better strategies for patient safety. The most commonly cited negative impact was resource allocation and attention by leaders.

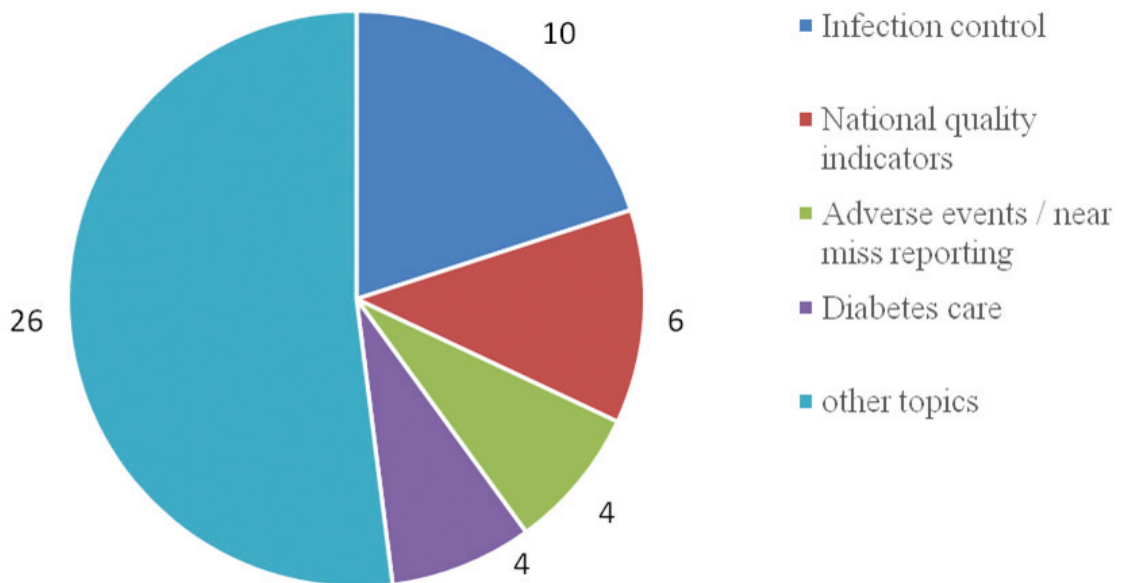


Figure 1. Quality topics advanced during the COVID-19 pandemic in Israeli hospitals

Source: elaborated by the author on a survey of Israeli public hospitals

The COVID-19 had several positive impacts on infection prevention, such as improved infrastructure and increased adherence to hand hygiene and universal precautions. The most commonly cited negative impacts were resource allocation to non-COVID issues and difficulties in adhering to protocols.

Several topics were noted as positive impacts on patient experience, including improved communication channels with patients and families, making the patient stay more pleasant, and

increased telemedicine capabilities and digital services. The most commonly cited negative impacts were the need to limit the number of visitors and resource allocation by management and staff. The most common topics advanced during the COVID-19 pandemic were patient and family support in the COVID-19 unit, care in the emergency department, care of labor and delivery, supplying information for patients and the development of online services and telemedicine (figure 2).

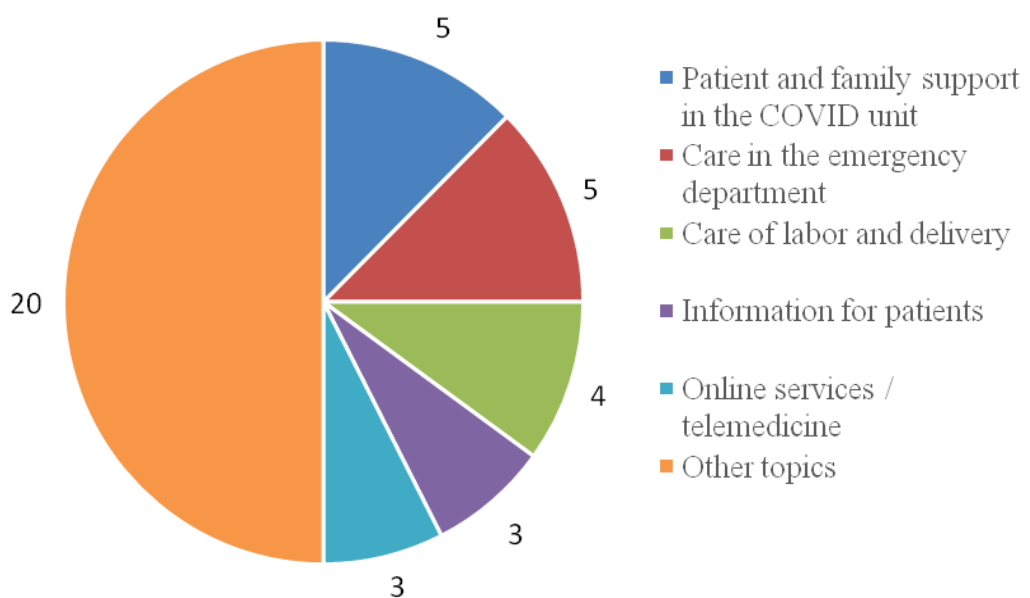


Figure 2. Patient experience topics promoted during the COVID-19 pandemic in Israeli hospitals

Source: elaborated by the author on a survey of Israeli public hospitals



The COVID-19 pandemic had both positive impacts on waiting times for outpatients, such as the use of telemedicine, and increased availability for those willing to come, while the most commonly cited negative impact was longer waiting times due to decreased availability of outpatient services during quarantine.

Finally, the pandemic had mainly negative impacts on clinician well-being (increased burnout and workload, social distancing from patients, uncertainty, and fear of infection). The most commonly cited positive impact was gratitude to staff from management and the public.

The main findings in this study show mixed impacts on quality of care, infection control and patient experience, with a mainly negative impact on burnout and clinician well-being. This is in line with several previous studies, both from Israel and abroad. Sabetkish & Rahmani [14] also noted negative influence of the COVID-19 pandemic on waiting times for elective procedures and non-urgent medical care, and a decrease in outpatient visits. Konson et al. [12] showed that performance rates in quality indicators in general hospitals were preserved and even improved. In the National Program for Quality of care in the Community, a decrease in performance related to preventive care was noted. For example, annual HbA1c testing among persons with diabetes decreased from 91% in 2019 to 88% in 2020. In addition, 4.5% fewer mammograms were performed in 2020 compared with 2019 [13]. Several studies reported negative impacts of the COVID-19 pandemic on clinician well-being [2, 6, 9, 11, 15, 16]. In a study of Israeli healthcare workers, the negative impact of quarantine was noted mainly among nurses, with feelings of shame related to the need for quarantine especially noted [9]. Similarly, high levels of burnout were noted in ICU nurses following the COVID-19 pandemic [11]. In a study of hospital residents [15], common problems included depression and anxiety (47%), post-traumatic symptoms, burnout, and substance abuse such as alcohol and cannabis (11%). Israeli emergency physicians reported high burnout levels, which increased during the pandemic. Specific burnout factors were fear of infecting family members, lack of care centers for the physician's children, increased workload, and insufficient logistic support [16]. In a survey of healthcare workers, concerns for family members and apprehension were noted [2]. The way the crisis was managed was negatively precepted. A regression model showed that low self-assessment of coping with the crisis, deep concerns at the organizational level, negative perceptions of crisis management, and providing care for COVID-19 patients were predictors of burn-

out [2]. However, a small study among physicians in northern Israel noted a decrease in burnout levels [6] during the pandemic.

This study is the first study to deal with the impact of the COVID-19 pandemic on quality of care in its broadest sense, in Israeli hospitals, from the viewpoint of leaders. Furthermore, it deals with various domains of quality in a comprehensive way, not focusing solely on patient safety, infection control or clinician well-being. Its main limitations are the small sample size (18 respondents) and the selective nature of hospitals included (for example, public hospitals not owned by the government or Clalit chose not to participate). A more extensive study is needed with the representation of all Israeli public hospitals.

## Conclusions

We can conclude that during the COVID-19 pandemic, hospital leaders reported generally mixed effects of the pandemic, with some positive impacts noted, while many negative impacts were similarly reported. The chief domains positively influenced by the pandemic include infection control and patient safety, while decreased availability of outpatient services and worse clinician well-being were noted. Among the specific aspects mentioned, positive impacts included increased awareness to the hand hygiene and the proper use of protective equipment, more stress on patient safety, and the increased use of telemedicine. Among the negative impacts listed, the main ones included resource allocation and managerial focus on COVID-19, shifting attention away from routine quality issues, limitations on visitors, and the impact of burnout and increased workload on staff's well-being.

Similar to other countries, the COVID-19 pandemic caused decreased availability of services, increased use of telemedicine, limited access for hospital visitors and a negative impact on clinicians' well-being. Given that a previous study [7] found that the monitoring of clinicians' well-being is an especially neglected aspect of quality in Israel, the increased burnout and workload reported by hospital leaders is especially concerning.

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