

**Background and objective:** We aimed to understand the testing experience for COVID-19 (C19) among users of Primary Health Care (PHC) located in communities with high socioeconomic vulnerability in a northeastern Brazilian capital. Within the PHC model, Brazil launched the Family Health Program (FHP) in 1994, which provides a broad range of primary care services.

**Methodology:** This is the formative research component of an intervention study to expand the testing and monitoring of C19. A qualitative approach carried out between December/21-February/22 was used to evaluate the C19 testing experience. Seventy semi-structured interviews were conducted with PHC users. The interviews were transcribed, coded, and analyzed through thematic content analysis.

**Results:** Of the 70 interviews, 32 were conducted in Basic Health Units and 38 in units of the FHP. The age range was 19 to 82 years old; 62(88.6%) females and 8(11.4%) males; 47.1% of mixed race, 47.1% blacks. Only 21.4% were employed, 14.3% were retired, 27.1% did not work and 21.4% were unemployed. 31 users (44.3%) received social protection benefits (93.5% a cash transfer program or the pandemic emergency aid). Users reported barriers to accessing health services and C19 testing in PHC units during the pandemic. The reported difficulties were a limited number of tests in PHC units, long waiting time, and difficulty to access the test results. Nevertheless, almost all (69) were able to test in expanding testing options provided by the National Health System.

**Conclusion:** Based on the formative research results an intervention was developed for PHC in two Brazilian capitals, to respond to the barriers to accessing C19 testing. The proposed intervention seeks to expand testing; surveillance strategies, a digital platform with a real-time situation panel, availability of test results, telemonitoring and user tracking, health education material, and prevention strategies for C19.

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### What makes health systems resilient? an analytical framework drawing on learnings from the covid-19 pandemic

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**Background and Objective:** The COVID-19 pandemic posed an unprecedented challenge which caught many health systems worldwide widely unprepared. The aim of this research was to develop a comprehensive analytical framework on health system resilience in the context of infectious diseases.

**Methods:** The analytical framework was developed based on a two-tiered approach. First, a comprehensive review of the existing literature was conducted to identify relevant frameworks on health system resilience. Second, input was gathered in several rounds of internal and external consultations with designated field experts and stakeholders, drawing on their experiences from the pandemic.

**Results:** The framework distinguishes between prerequisites of health system resilience, which address precautions to be taken in 'normal' times, and response strategies in the face of shocks (e.g., pandemics). Both sections are further divided into six building blocks that were adapted from the WHO health system framework: governance and leadership, information and research, financing, physical resources, human resources, service delivery. A comprehensive understanding of health systems is applied, as resilience is addressed in the action areas of public health, primary care, secondary care and long-term care. An overarching component on contextual factors – including, e.g., social cohesion, trust, international connectedness and health literacy – represents a distinctive feature of the framework and an important addition to the existing spectrum of resilience frameworks.

**Conclusion:** In order to be better prepared for future health crises, the foundations for a resilient health system must already be laid in 'normal' times and in all areas of the health system. In the face of an imminent shock, adequate response strategies need to be developed. An essential learning from the COVID-19 crisis has been that contextual factors of societies and sub-groups play a major role in the ability of health systems to overcome a shock.

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### COVID-19 pandemic and management of migrants on quarantine vessels in Italy

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**Background and objective:** COVID-19 pandemic made the management of the thousands of migrants who have arrived on the sicilian coasts more complex and difficult. At the same time, restrictions to enter Italy were in force and reception facilities were not ready to handle several subjects in isolation and quarantine. Ships were converted into isolation structures. Syndromic surveillance and health conditions monitoring was carried out. This study describes the sample hosted in quarantine vessels and the management of covid-19 cases on board.

**Methods:** Vessels were converted according to the "ship safety" guidelines of the ministry of health. Ship crews, medical and logistic personnel of the italian red cross were on board. Migrants were hosted according to the country of origin, gender, families, pathologies and in dedicated areas if they resulted positive to the sars-cov-2 when arrived at the italian coasts. Health data of the first access were recorded in a database from april 2020 to june 2022.

**Results:** 59,700 migrants (6,065 women, 53,619 men, 16 not available) of 56 nationalities were hosted. The most represented countries were Tunisia (15210 migrants), Bangladesh (8959), Egypt (6918); 32 subjects declared a European nationality. The average age of the migrants who declared their age was 24,79 years old (0,38%<1y, 6,97%<18y, 8,12%=18y, 92,43%>18y). 4832 subjects (7,34%) were tested and resulted positive to the SARS-CoV-2 (58.60% before boarding and 41.4% during the quarantine period).

**Conclusion:** The system provided a solution quickly applicable in a context in which it was necessary to find physical places for this large number of migrants, in order to carry out isolation and quarantine with respect for human dignity. Although the system presented critical points and difficulties, it reduced the potential risk of spreading the virus among the population and in the reception system.

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### Inequalities in healthcare utilization among older adults during the second year of covid-19 pandemic: findings from the share cohort

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**Background and objective:** Reorganisation of healthcare resources during the COVID-19 pandemic resulted in a global disruption of healthcare services, widening health inequalities among the vulnerable, particularly the older population. This study aims to investigate the sociodemographic and geographic factors associated with healthcare disruption among older European adults in second year of pandemic.

**Methods:** We used Survey of Health, Ageing and Retirement in Europe (SHARE) data comprising 35,923 participants aged 50 years and above from 27 countries. The influence of sociodemographic factors from wave 7 and geographic factors (country-level COVID-19 context and welfare regime typology) on forgone, postponed and denied healthcare in 2021 (wave 9), controlling for health needs, health behaviours, and COVID-19 vaccination status was investigated using three multilevel logistic regression models.

**Results:** Among older Europeans, the reported prevalence of forgone, postponed, and denied healthcare were 8.8%, 12.1% and 5.7%, respectively. Those higher educated had higher likelihood of healthcare disruption. Compared to primary-educated, those tertiary-educated had 44% (95%CI 28-62%), 24% (13-37%) and 50% (28-75%) higher odds of forgone, postponed and denied healthcare, respectively. Those with secondary compared to primary education had 15% (4-27%) higher odds of forgone healthcare. Retirees faced higher chance of postponed healthcare compared to employed (OR 1.26, 1.00-1.62). Those living with partners were less likely (0.91, 0.83-0.99) to experience forgone healthcare. Country-level COVID-19 case and death numbers, stringency of measures against COVID-19 and welfare regime typology were not associated with healthcare disruption. The models for each outcome variable explained 8-9% differences between countries.

**Conclusion:** Differences in healthcare utilisation among older Europeans based on sociodemographic factors persisted in the second year of COVID-19 pandemic. Strategies to mitigate the repercussion of missed and unmet healthcare should be put in place to ensure preservation of health and wellbeing of this vulnerable population.

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### Use of the anti-covid vaccination status to support bed management activity as a preventive measure in the development

## of epidemic outbreaks

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**Background and objective:** The large-scale introduction of anti-COVID vaccination has been shown to reduce the probability of contracting and spreading the infection by the vaccinated person. The diagnostic capacity of the nasopharyngeal swab for COVID+ is limited at the time of its execution, failing to identify subjects who are in the incubation period and therefore with limited efficacy in preventive identification at the time of hospitalization. To limit the development of intra-hospital clusters of COVID+, a bed management model was structured based on the vaccination status recorded in the electronic medical record and on the length of hospitalization.

**Methods:** Starting from April 2021, the vaccination status for all hospitalizations, recorded on electronic health records, was extracted in daily reports provided to bed management. The bed management model used provided for the prohibition of sharing the hospital room between unvaccinated subjects or the possible association of long-term patients.

**Results:** The incidence of clusters (more than two cases in 7 days per unit of stay) in the hospital in the quarter following the implementation of this model showed a percentage reduction of 72.5%.

**Conclusion:** optimal management of patient placement in small cohorts according to public health criteria can help reduce the occurrence of infectious complications

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## Primary care during the pandemic: lessons learnt from five European countries

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**Background and objective:** The COVID-19 pandemic necessitated wide-ranging adaptations to the organisation of health systems, and primary care is no exception. This study aims to collate insights on the various impacts of the pandemic on primary care. The gained knowledge should help to increase pandemic preparedness and resilience of the primary care system.

**Methods:** We conducted a qualitative study employing semi-structured interviews with primary care providers in Austria, Denmark, France, Hungary, and Italy. A total of 31 interviews were conducted between June and August 2022 and subjected to an overarching analysis to identify key themes.

**Results:** Disruptions to service delivery led to a widespread adoption of telemedicine. Despite the rapid increase in telemedicine usage and efforts of primary care providers to organise face-to-face care delivery in a safe way, some patient populations such as elderly or chronically ill patients were particularly affected by disruptions in service delivery. Moreover, primary care providers perceived a substantial propagation of misinformation about COVID-19 and vaccines among the population, which also threatened patient-physician relationships. At the same time, primary care providers faced an increased workload, had to work with insufficient personal protective equipment and were provided with incongruous guidelines while pandemic response policies were mostly focused on hospitals. There was a consensus among primary care providers that they were mostly sidelined by public health policy in the context of pandemic management.

**Conclusion:** A better integration of primary care with public health and a better involvement of the primary care sector into the pandemic response would have generated a benefit for both patients and care providers. Primary care is well-equipped to manage most mild cases, thereby potentially relieving pressure from hospitals. Continuity of usual care should be prioritised and can be safeguarded by care provision via telemedicine or face-to-face, depending on the individual case.

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## Household food security access and dietary diversity amidst covid-19 pandemic in nepal; an evidence from rapid assessment

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**Background:** Pandemic led to the surging concerns of food insecurity status throughout the world. In response to global and national concerns on food and nutrition security, the presented study aimed to examine the prevalence and determining factors of household food insecurity and dietary diversity among people from selected rural municipalities of Lalitpur, Nepal.

**Methods:** A community-based cross-sectional study was conducted among 432

households. A pretested, semi-structured questionnaire was used to collect socio-demographic characteristics of the participants, household income; the impact of COVID-19 on their income and livelihood, household access to food, and dietary diversity. Food insecurity was measured using the Household Food Insecurity Access Scale (HFIAS), version 3, and the Household Dietary Diversity Score (HDDS). Bivariate and multiple linear regression models were used to assess the association between the dependent and independent variables.

**Results:** This study found the prevalence of household food insecurity, and low/medium household dietary diversity were 36.1% (95% CI: 31.7-40.8), and 63.2% (95%CI: 58.5-67.6) respectively. Also, households receiving COVID-19 support have had a significantly positive association with the HFS score (COR=1.62, 95% CI: 1.03-2.53) compared to those who did not receive any form of support. Multiple regression showed the disadvantaged ethnic group (AOR=2.73, 95% CI: 1.23-6.07), who did not attend formal education had significantly higher odds of household food insecurity (AOR= 3.70, 95% CI: 1.16-11.71). In contrast, participants of the age group 41-64 years were less likely to have food security and have consumed diverse diet (AOR=0.35, 95% CI: 0.21-0.59), and (AOR=0.48, 95% CI: 0.28-0.83), respectively compared to the reference group of 20-40 years.

**Conclusion:** Owing to the pandemic, our study concluded the increased prevalence of food insecurity among diverse communities. Despite this, dietary diversity was found to be acceptable, indicating the much-needed attention on food security in forthcoming emergencies among those of such rural settings.

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## Association between bnt162b2 vaccination and quality of life up to 18 months post-covid19 among sars-cov-2 infected individuals in israel: a cross sectional survey

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**Background and objectives:** Approximately 10-30% proportion of SARS-CoV-2-infected individuals continue to report symptoms months after the acute infection. Despite a growing consensus that vaccination reduces the reporting of these long-term symptoms, whether vaccination mitigates changes in quality of life (QoL) associated with post-acute COVID19 symptoms has not been fully investigated. We aimed to identify any association between the BnT162b2 vaccination use in Israel and QoL among individuals previously infected with SARS-CoV-2 in Israel, 3 to 18 months after infection.

**Methods:** We invited individuals aged 18 years and older whose SARS-CoV-2 r polymerase chain reaction (PCR) test was analysed between 15th March 2020 and 15th June 2022 in one of three government hospitals in Northern Israel, to fill a questionnaire pertaining to their physical, mental and psychosocial health. We examined associations between their vaccination status and post-COVID HRQoL (measured using the EQ5D-5L Utility index (UI) that ranges from less than 0 (lowest QoL) to 1) using linear regression, after adjusting for potential confounders.

**Results:** 951 participants with complete data were included. Mean UI for participants unvaccinated at the time of infection was 0.77, compared to 0.82 and 0.83 for double and triple vaccinated participants respectively. After adjusting for potential confounders, double and triple vaccination was associated with a 6.1 and 5.6 percentage-point increase in QoL respectively 3-18 months post-SARS-CoV-2 infection, compared to those unvaccinated (p< 0.05).

**Conclusions:** Vaccination with 2 doses or more of BNT162b2 vaccine was associated with better QoL outcomes 3-18 months post infection compared to those unvaccinated at the time of infection. Our results suggests COVID-19 vaccination not only reduces post-acute COVID19 symptoms but may also mitigate the decrease in quality of life associated with symptoms post-acute COVID19 illness.

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## Health system resilience based primary health services in the covid 19 pandemic situation in depok city, Indonesia

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