

PROMENE U PRIMARNOJ ZDRAVSTVENOJ ZAŠTITI KAO ODGOVOR NA PANDEMIJU KOVID-19 OBOLJENJA U CRNOJ GORI

ORIGINALNI RAD

ORIGINAL ARTICLE

CHANGES IN PRIMARY HEALTH CARE IN RESPONSE TO THE COVID-19 PANDEMIC IN MONTENEGRO

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SAŽETAK

Uvod: Primarna zdravstvena zaštita se smatra osnovom, ne samo za zadovoljenje potreba za zdravstvenom zaštitom, već i za odgovor na krizne situacije, kakva je kriza uzrokovana izbijanjem pandemije KOVID-19 infekcije.

Cilj: Cilj ove studije jeste da opiše promene u primarnoj zdravstvenoj zaštiti nastale usled izbijanja KOVID-19 pandemije u Crnoj Gori, sa fokusom na organizaciju i pružanje zdravstvenih usluga.

Metode: Ovo je deskriptivna opservaciona studija u kojoj su glavne mere ishoda: broj i način obavljenih poseta i usluga, uključujući e-servise, propisane antibiotike i recepte po dijagnozi, na 1.000 stanovnika, u 2020. godini, u poređenju sa istim parametrima u 2019. godini. Podaci su generisani iz zdravstveno-statističkog informacionog sistema Instituta za javno zdravlje Crne Gore. Korišćeni su demografski podaci zvanične statistike.

Rezultati: Globalna pandemija promenila je način rada primarne zdravstvene zaštite, a ad hoc rešenja su iznalažena u pogledu infrastrukture, zdravstvene radne snage i novih usluga e-zdravlja. U poređenju sa 2019. godinom, ukupne posete na 1.000 stanovnika su, u 2020. godini, smanjene za 12%, dok su kućne posete porasle za 15%, u trećem kvartalu. Elektronsko zakazivanje je bila najčešće korišćena e-usluga (983.212 pristupa u 2020. godini). Propisani antibiotici nisu premašili mesečne stope iz 2019. godine (na 1.000 stanovnika). Broj propisanih recepata (na 1.000 stanovnika), u 2020. godini, porastao je za 8%, za dijagnoze za koje su lekari propisivali najviše recepata (na 1.000 stanovnika).

Zaključak: Pandemija KOVID-19 oboljenja promenila je način rada primarne zdravstvene zaštite, uz prelazak sa poseta u ambulanti na kućne posete, telefonske konsultacije i e-usluge, bez fizičkog kontakta. Međutim, ima prostora za unapređenje u delu zadovoljenja potreba prevencije i lečenja drugih bolesti.

Ključne reči: primarna zdravstvena zaštita, posete, KOVID-19, Crna Gora

ABSTRACT

Introduction: Primary health care is considered the basis, not only for meeting healthcare needs, but also for responding to crisis situations, such as the crisis caused by the outbreak of the COVID-19 pandemic.

Aim: The aim of this study is to describe changes in primary health care caused by the outbreak of COVID-19 in Montenegro, with a focus on the organization and provision of health services.

Methods: This is a descriptive observational study with the following main outcome measures: number and manner of visits and services, including e-services, prescribed antibiotics and prescriptions according to the diagnosis, per 1,000 inhabitants, in the year 2020, as compared to the same indicators in 2019. Data were generated from the health statistics information system of the Institute of Public Health of Montenegro. Demographic data from official statistics were used.

Results: The global pandemic has changed the functioning of primary health care, and ad hoc solutions have been found, in terms of infrastructure, the health workforce, and new e-health services. As compared to 2019, in 2020, the total number of visits per 1,000 inhabitants decreased by 12%, while home visits increased by 15%, in the third quarter. Online scheduling (e-order) was the most commonly used e-service (accessed 983,212 times in 2020). The prescribed antibiotics did not exceed the monthly rates from 2019 (per 1,000 inhabitants). The number of prescriptions issued (per 1,000 inhabitants), in 2020, increased by 8% for the diagnoses for which doctors prescribed the most prescriptions (per 1,000 inhabitants).

Conclusion: The COVID-19 pandemic has changed the functioning of primary health care, with a transition from office visits to – home visits, telephone consultations, and e-services, without physical contact. However, there is room for improvement in meeting health needs in the area of prevention and treatment of other diseases.

Key words: primary health care, visits, COVID-19, Montenegro

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UVOD

Primarna zdravstvena zaštita (PZZ), kao „kamen temeljac održivog zdravstvenog sistema“ [1], od suštinskog je značaja za odgovor na pandemiju KOVID-19 infekcije. Od primarne zdravstvene zaštite se očekivalo da zadovolji ne samo „uobičajene“ potrebe zdravstvene zaštite, već i da odgovori na kriznu situaciju i da se modifikuje kako bi zadovoljila potrebe pacijenata sa sumnjom na KOVID-19 infekciju, te testiranih i potvrđenih obolelih pacijenata. PZZ je morala da iskoristi svoje prednosti kako bi razvila osnovnu strategiju za suočavanje sa pandemijom KOVID-19 oboljenja, a među te prednosti spadaju: poznavanje lekara i pacijenata, njihovi dobri odnosi, pristup zdravstvenim uslugama, i drugo [2]. Upravljaajući glavnim delom tereta pandemije KOVID-19 oboljenja, pri čemu je istaknuta njena uloga čuvara ulaznih tačaka u zdravstveni sistem i uloga u trijaži, PZZ je morala da zadrži fokus na zdravlju zajednice u celini [3].

Crna Gora je bila poslednja država u Evropi koja je registrovala prve slučajeve KOVID-19 oboljenja, što je crnogorskim vlastima omogućilo dodatno vreme da pripreme celokupni sistem za odgovor na pandemiju [4]. Međutim, slično drugim zemljama Jugoistočne Evrope (JIE), i Crna Gora se suočavala sa nizom različitih poteškoća (npr. nedostatak zaštitne opreme) [5]. Pre prvih slučajeva, Institut za javno zdravlje Crne Gore (IJZCG) predstavio je prvu verziju Nacionalnog akcionog plana za KOVID-19 u Crnoj Gori [6]. Nakon izbijanja epidemije KOVID-19 oboljenja u Italiji [7], i nakon što su potvrđeni prvi slučajevi u Crnoj Gori (17. marta 2020. godine), PZZ je bila prva ulazna tačka za osobe sa simptomima KOVID-19 infekcije, koja se suočila sa potrebom da se transformiše, kako bi mogla da odgovori na izazove pandemije. To je uključivalo, ne samo promene u organizaciji, menadžmentu, komunikaciji i radu, već i stalno menjanje i prilagođavanje novim načinima rada i pružanja zdravstvenih usluga. Pored opšteg strateškog plana, koji je usvojila Vlada, Klinika za infektivne bolesti je izdala i nacionalne preporuke za lečenje KOVID-19 oboljenja, uključujući smernice za lečenje i mere podrške. Druge nacionalne smernice za primarnu zdravstvenu zaštitu u vezi sa KOVID-19 infekcijom, koje bi podržale centre primarne zdravstvene zaštite, kao odgovor na pandemiju ovog oboljenja, nisu razvijene. Odluke na nacionalnom nivou je donosio *ad hoc* tim Nacionalnog koordinacionog tela (NKT).

Cilj rada je da opiše promene primarne zdravstvene zaštite nakon izbijanja epidemije KOVID-19 oboljenja u Crnoj Gori, sa fokusom na organizaciju i nekoliko mera ishoda.

INTRODUCTION

Primary health care (PHC), as the “cornerstone of a sustainable health system” [1], is essential for the response to the COVID-19 pandemic. Primary health care was expected, not only to meet the ‘usual’ needs in health care, but also to respond to the crisis situation, as well as to adapt, in order to meet the needs of the patients with suspected COVID-19, as well as the needs of the patients tested for COVID-19, and with a confirmed diagnosis of the disease. PHC had to use its advantages in order to develop a basic strategy for dealing with the COVID-19 pandemic, with these advantages being: familiarity between the doctors and patients, a good relationship between the doctors and patients, access to healthcare services, etc. [2]. In managing the best part of the burden of the COVID-19 pandemic, wherein its role of the healthcare system gatekeeper, as well as its role in triage have been emphasized, PHC had to maintain focus on the health of the community as a whole [3].

Montenegro was the last country in Europe to register its first cases of COVID-19, which provided the Montenegrin authorities with an opportunity to prepare the entire system for a response to the pandemic [4]. However, similarly to other countries in Southeast Europe (SEE), Montenegro also faced a number of different challenges (e.g., lack of personal protective equipment) [5]. Before the first cases were registered, the Institute of Public Health of Montenegro (IPHM) presented the first version of the National Action Plan for COVID-19 in Montenegro (i.e., COVID-19: Preparedness and Response Plan Montenegro) [6]. After the COVID-19 epidemic broke out in Italy [7], and after the first cases of the disease were confirmed in Montenegro (March 17, 2020), PHC was the first entry point for persons with symptoms of the COVID-19 infection, and it was faced with the necessity to transform, in order to be able to respond to the challenges of the pandemic. This included, not just changes in organization, management, communication, and work, but also constant changing and adapting to the new modes of operation and new ways of providing health services. In addition to the general strategic plan, adopted by the Government, the Clinic for Infectious Diseases also issued national recommendations for treating COVID-19, including guidelines for treatment and support measures. Other national guidelines for PHC, in relation to COVID-19, which would provide additional support for the primary healthcare centers, as a response to the pandemic of the new disease, were not developed. Decisions at the national level were made by the *ad hoc* team of the National Coordinating Body (NCB).

The aim of this paper is to describe the changes in primary health care, occurring after the outbreak of the

PRIMARNA ZDRAVSTVENA ZAŠTITA U CRNOJ GORI

Primarna zdravstvena zaštita u Crnoj Gori je organizovana dominantno u javnom vlasništvu. Reformisana je u poslednjih dvadeset godina, kako bi se zadovoljio najveći deo potreba stanovništva za zdravstvenom zaštitom. Zadaci i organizacija primarne zdravstvene zaštite su precizno definisani zakonskim okvirom, sa fokusom na porodičnu medicinu [8]. PZZ obuhvata širok spektar usluga koje se pružaju odraslima, deci i mladima, ženama (u pogledu reproduktivnog zdravlja), a u primarnu zdravstvenu zaštitu spadaju i stomatološke usluge, usluge u oblasti mentalnog zdravlja, hitne pomoći, i druge. PZZ je prioritet u razvoju zdravstvenog sistema Crne Gore i pruža se u 18 domova zdravlja, koji imaju jedinice na različitim gradskim i prigradskim lokacijama. Dom zdravlja ima tri osnovne jedinice: (i) ambulante izabranih lekara (pedijatri za decu do 15 godina, lekari za odrasle i ginekolozi); (ii) centre podrške izabranim lekarima, organizovane na lokalnom i regionalnom nivou (plućne bolesti, dijagnostika, mentalno zdravlje, prevencija, i drugo); (iii) jedinice za: patronažu, primarni nivo fizikalne terapije i medicinski transport.

Prema podacima poslednjeg popisa iz 2011. godine, Crna Gora ima 620.029 stanovnika, sa tendencijama postepenog starenja stanovništva (pad nataliteta, fertiliteta i prirodnog priraštaja) i porasta stope mortaliteta [9]. Izabrani lekari posećuju one koji ne mogu da posete lekara u prostorijama primarne zdravstvene zaštite. Pored toga, patronažni timovi vrše kućne posete u cilju pružanja preventivnih ili kurativnih usluga za najugroženiju populaciju (posete u trudnoći, posete novorođenčadi i maloj deci, posete starima). Služba koja pruža zdravstvene usluge deci van radnog vremena je obezbeđena u jedinici primarne zdravstvene zaštite koja je dežurna, a za odrasle, u jedinicama hitne pomoći primarne zdravstvene zaštite, tokom 24 časa. Pristup primarnoj zdravstvenoj zaštiti je moguć putem zakazanih poseta, poseta bez zakazivanja, u slučaju hitne potrebe, kao i putem telefonskih konsultacija. Centri za mentalno zdravlje su organizovani na bazi ambulanti. PZZ ima pozivni („kol“) centar za opšte informacije i zakazivanje.

MATERIJALI I METODE

Ova studija je osmišljena kao komparativna opservaciona analiza broja i načina obavljenih poseta i usluga, uključujući tu i e-servis, propisane antibiotike i recepte po dijagnozi, na 1.000 stanovnika Crne Gore, tokom prve godine pandemije (2020. godina) i u godini pre pandemije (2019. godina). Korišćeni podaci su generisani iz zdravstveno-statističkog sistema In-

COVID-19 epidemic in Montenegro, with a focus on the organizational aspect, as well as on several measures of outcomes.

PRIMARY HEALTH CARE IN MONTENEGRO

Primary health care in Montenegro is predominantly organized within publicly owned institutions. In the last 20 years, it has undergone reforms, in order to meet most of the healthcare needs of the population. The responsibilities and the organization of primary health care are precisely defined within the legal framework, with a focus on family medicine [8]. PHC encompasses a wide array of services offered to adults, children and youths, and women (in the field of reproductive health). Primary health care also includes dental health services, services in the area of mental health, emergency services, and other. PHC is a priority in the development of the healthcare system of Montenegro. Its services are provided within 18 community health-care centers, which have units at different urban and suburban locations. The community healthcare center has three basic types of units: (i) offices of the 'selected physicians' (i.e., primary care physicians/family doctors) – pediatricians for children up to the age of 15, GPs for adults, as well as gynecologists for women; (ii) support centers for the primary care physicians, organized at the local and regional levels (pulmonary diseases, diagnostics, mental health, prevention, other); (iii) units for home and domiciliary visits, primary-level physical therapy, and medical transport.

According to the data from the latest census (2011), the population of Montenegro is 620,029, with tendencies of gradual population ageing (decreasing birthrate, fertility rate, and population growth) and mortality rate increase [9]. Primary care physicians visit those patients who are unable to visit the doctor's office in the primary health care facilities. Additionally, teams for home and domiciliary visits carry out home visits with the aim of providing preventive and treatment services for the most vulnerable groups (visits during pregnancy, home visits for newborns and small children, home visits for the elderly). A unit providing out-of-hours services to children operates within the primary health care unit that is on-call/on-duty at the time, while adults receive out-of-hours care in emergency units within the PHC, which are on-duty 24 h. Access to PHC is possible via scheduled visits, unscheduled visits, in case of an emergency, as well as via telephone consultations. Mental health centers are organized as clinics/outpatient facilities. PHC has a call center for issuing general information and scheduling appointments.

stituta za javno zdravlje Crne Gore (IJZCG). Među njih spadaju: broj poseta primarnoj zdravstvenoj zaštiti; način obavljanja konsultacija (poseta u ambulanti/kućna poseta); broj recepata za najčešće dijagnoze prema Desetoj reviziji Međunarodne klasifikacije bolesti (MKB-10), kao što su: hipertenzija (I10), dijabetes (E11), hronična opstruktivna bolest pluća (J44), astma (J45), dispepsija (K30), *angina pectoris* (I20), kardiomiopatija (I42), i akutni bronhitis (J20), za koje su propisivani lekovi i antibiotici za grupu J01 (antibakterijski lekovi za sistemsku primenu), na 1.000 stanovnika. Podaci se odnose na period januar – septembar, 2019. i 2020. godine. Takođe, podaci o e-servisima su dobijeni od Fonda zdravstvenog osiguranja Crne Gore, za period januar – septembar 2019. i 2020. godine. Korišćeni su demografski podaci zvanične statistike za izračunavanje stopa. Analiza podataka je bila deskriptivna i analitička, sa fokusom na promene u načinu rada, obavljanju konsultacija, i pružanju zdravstvenih usluga, nakon izbijanja epidemije KOVID-19 infekcije u Crnoj Gori.

REZULTATI

Nakon izbijanja epidemije KOVID-19 oboljenja u Crnoj Gori, pripremljen je strateški plan pripravnosti kao odgovor na krizu, koji je, međutim, više bio fokusiran na organizaciju bolničkih kapaciteta u zemlji [6,10]. PZZ je shodno tome morala da napravi sopstvenu organizaciju i način rada, kao odgovor na krizu. Prvo je uspostavljena trijaža na ulazu u ustanove primarne zdravstvene zaštite, dok je pacijentima savetovano da izbegavaju posete. Pacijentima, za koje se sumnjalo da su oboleli od oboljenja KOVID-19, savetovano je da telefonom kontaktiraju ambulante primarne zdravstvene zaštite. Telefonske linije u ambulantama za KOVID-19 bile su otvorene za zakazivanje na dnevnom nivou, kao i za dobijanje rezultata testova, informacija i kratkih medicinskih saveta. PZZ je vršila nadzor nad osobama koje su bile u karantinu i izolaciji, pri čemu je poseban izazov bilo brzo reagovanje i prepoznavanje ranih znakova pogoršanja zdravstvenog stanja, koje zahteva bolničko lečenje. Prioritet je bilo zbrinjavanje pacijenata sa oboljenjem KOVID-19, nauštrb potreba za redovnim zdravstvenim uslugama u domovima zdravlja. Takođe, patronažni timovi su prvenstveno obavljali kućne posete pacijentima sa simptomima KOVID-19 infekcije.

Domovi zdravlja su podeljeni na dve celine: deo za pacijente sa sumnjom na KOVID-19 oboljenje i deo za pacijente koji nisu zaraženi ovom infekcijom, u koju svrhu su otvarani novi ili korišćeni privremeni montažni objekti. Rukovodstvo domova zdravlja je moralo da iz postojeće zdravstvene radne snage obezbedi kadar i za KOVID-19 ambulante. *Ad hoc* rešenja za proširenje kapaciteta radne snage bila su: izmena rasporeda

MATERIALS AND METHODS

This study is designed as a comparative observational analysis of the number and method of provided visits and services. These services include e-services, prescribed antibiotics, and prescriptions issued on the basis of registered diagnoses, per 1,000 population, in Montenegro, during the first year of the COVID-19 pandemic (2020), and in the year before the pandemic (2019). The data used was generated from the health statistics information system of the Institute of Public Health of Montenegro (IPHM). These data include: number of visits to PHC; method of performing consultations (visit to the doctor's office/home visit); number of issued prescriptions for the most common diagnoses, according to the Tenth Revision of the International Classification of Diseases (ICD-10), such as: hypertension (I10), diabetes (E11), chronic obstructive pulmonary disease (J44), asthma (J45), dyspepsia (K30), *angina pectoris* (I20), cardiomyopathy (I42), and acute bronchitis (J20), for which drugs and antibiotics were prescribed, belonging to the J01 group (antibacterial drugs for systemic use), per 1,000 population. The data relate to the period January – September of 2019 and 2020. Additionally, data on e-services, pertaining to the period January – September of 2019 and 2020, were obtained from the Health Insurance Fund of Montenegro. Demographic data of the official statistics for calculating rates were used. Data analysis was descriptive and analytical, with a focus on changes in the mode of operation, changes in performing consultations, as well as changes in providing health services, after the COVID-19 outbreak in Montenegro.

RESULTS

After the outbreak of the COVID-19 epidemic in Montenegro, in response to the crisis, a strategic preparedness and response plan was prepared, which was, however, more focused on the organization of the country's in-patient hospital capacities [6,10]. Consequently, PHC had to manage its own organization and mode of operation, in response to the crisis. First, triage was established at the entrances of the primary health care facilities, while patients were advised to avoid visits. Also, patients in whom COVID-19 was suspected were advised to contact primary health care clinics by phone. The telephone lines in COVID-19 clinics were open for scheduling appointments, obtaining test results, getting information and short medical advice, on a daily basis. PHC monitored persons who were in isolation and quarantine, wherein a particular challenge was providing a quick response and recognizing the early signs of deterioration in the health status of the patient requiring in-hospital treatment and care. The priority was taking care of COVID-19 patients, at the

rada, izmena radnog vremena i uvođenje dežurstava sa dodatnim satima. KOVID-19 timovi su deo svog radnog vremena provodili u kućnim posetama. Zdravstveni radnici koji su bili uključeni u testiranje i lečenje obolelih od KOVID-19 infekcije, dobijali su, u više navrata, novčane podsticaje. Upućivanje na testiranje je vršeno preko ambulanti domova zdravlja i preko pozivnog centra u IJZCG-u. Testiranje je bilo centralizovano u referentnoj ustanovi koja vrši PCR testiranja na nacionalnom nivou – IJZCG. Uzorci za ispitivanje su dopremani svakodnevno iz svih gradova u IJZCG, a rezultati su, u većini slučajeva, dobijani u roku od 24 sata.

ELEKTRONSKI SERVISI

Veb portal „E-zdravlje“ [11] integrisao je postojeće e-usluge (npr. e-zakazivanje, e-recept, e-rezultati analize) i nove e-usluge, koje su postale dostupne korisnicima (Grafikon 1). Elektronsko zakazivanje je bila najčešće korišćena e-usluga (983.212 pristupa u 2020. godini), koja je upotrebljena 3,7 puta više nego prethodne godine. Nova e-usluga – KOVID-19, posebno je razvijena tokom pandemije, u svrhu dobijanja povratnih informacija o rezultatima testova (više od 600.000 pristupa u 2020. godini). E-recept je bio među veoma intenzivno korišćenim e-aplikacijama (243.378 pristupa).

POSETE U AMBULANTI, KUĆNE I UKUPNE POSETE

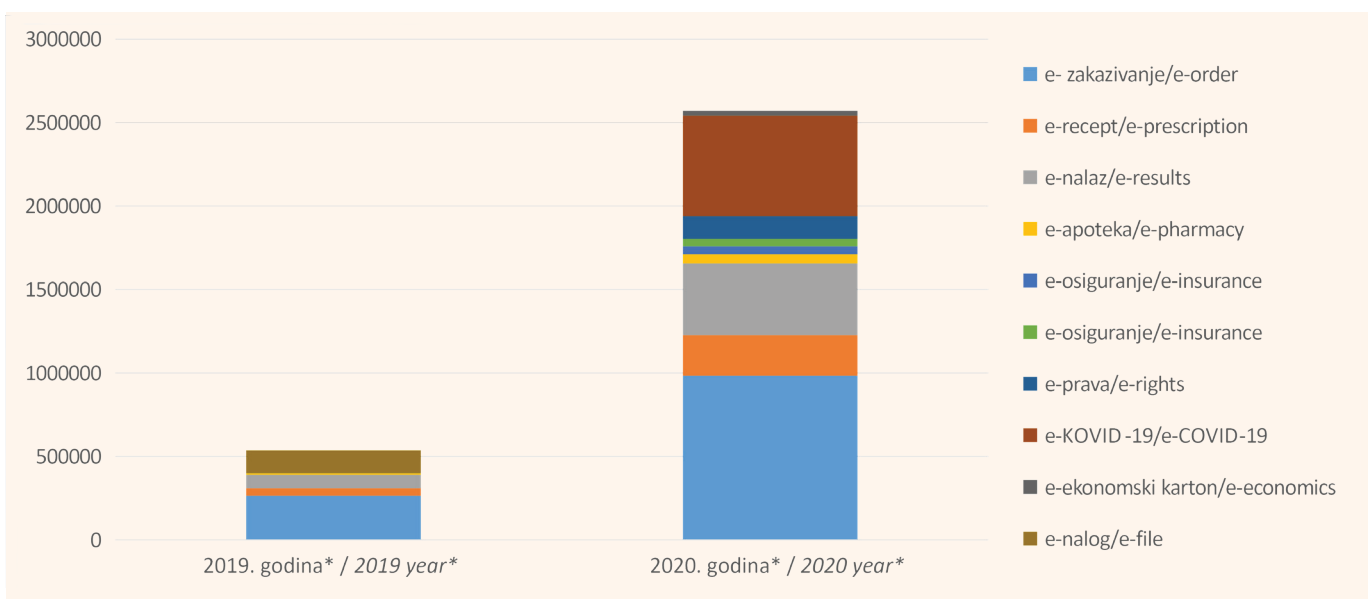
Ukupne posete na 1.000 stanovnika u 2020. godini (Tabela 1) smanjile su se za 12% (po kvartalima: -4,5%;

cost of regular health care services that are normally provided at the community health care centers. Also, the teams for home and domiciliary visits primarily visited patients with COVID-19 symptoms.

The community health care centers were divided into two separate subdivisions: the division with patients with suspected COVID-19 and the division for non-COVID-19 patients. To this end, new facilities were built, or temporary prefabricated buildings were used. The management of the community health care centers had to provide staff for the COVID-19 clinics from its existing pool of health workers. The ad hoc solutions for providing increased working capacities were, as follows: changes in the work schedules, changes in working hours, and introducing on-duty shifts with additional working hours. The COVID-19 teams spent a part of their shift in house visits. Health workers who took part in testing and treating COVID-19 patients were awarded financial incentives, on a number of occasions. Patients were referred for testing through the COVID-19 clinics at the community health care centers and through the IPHM call center. The testing process was centralized at the reference institution performing PCR testing at the national level – the IPHM. Samples were delivered to the IPHM for testing from all towns in Montenegro, on a daily basis, and the test results were, in most cases, issued within 24 hours.

E-SERVICES

The web portal *E-zdravlje* (E-health) [11] integrated the existing e-services (e.g., e-order, e-prescription, e-test results) and new e-services, which also became avail-



* podaci za prva tri kvartala

*data for the first three quarters

Grafikon 1. Upotreba e-servisa u 2019. godini naspram 2020. godine. Izvor: Institut za javno zdravlje Crne Gore, 2020.

Figure 1. Use of e-services in 2019 vs 2020; Source: Institute of Public Health of Montenegro, 2020

Tabela 1. Broj poseta (ukupne, kućne i u ambulanti) u ustanovama na primarnom nivou zdravstvene zaštite u Crnoj Gori, na 1.000 stanovnika, u periodu januar – septembar; 2019. godina naspram 2020. godine

Table 1. Number of visits (total, home and office visits) in primary health care institutions, in Montenegro, per 1,000 inhabitants, in the period January – September; year 2019 vs year 2020

Godina / Year	2019.			2020.		
Kvartal / Quarter	I	II	III	I	II	III
Ukupne posete na 1.000 stanovnika / Total visits per 1,000 population	1.725	1.595	1.611	1.648	1.293	1.413
Kućne posete na 1.000 stanovnika / Home visits per 1,000 population	5,64	5,51	5,28	4,57	3,62	6,09
Posete u ambulanti na 1.000 stanovnika / Office visits per 1,000 population	1.720	1.589	1.605	1.644	1.290	1.407

-18,9%; -12,2%), što važi i za udeo poseta u ambulanti (-4,42; -18,84; -12,34), dok su se kućne posete timova primarne zdravstvene zaštite takođe smanjile u prvom i drugom kvartalu (-19,09%; -34,27%), a porasle u trećem kvartalu (+15,36%).

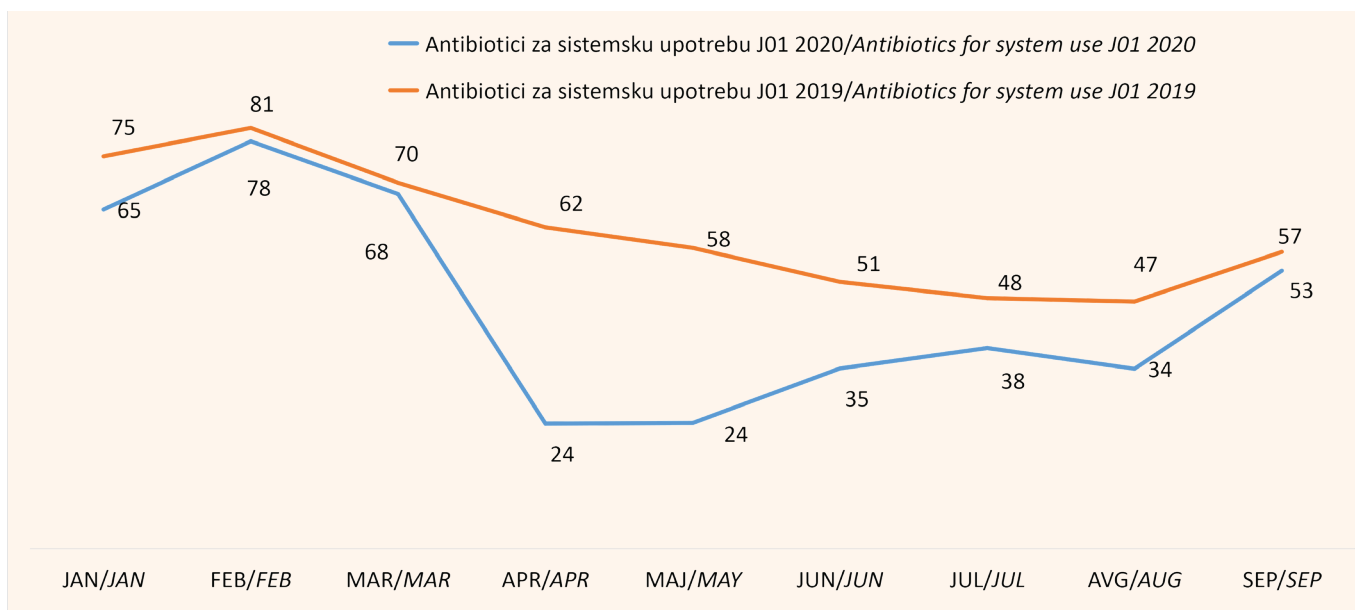
PROPISANI ANTIBIOTICI: JANUAR – SEPTEMBAR 2019. GODINE I JANUAR- SEPTEMBAR 2020. GODINE

Broj propisanih antibiotika, u periodu januar – septembar 2020. godine, bio je 23% manji, prema ukupnom broju recepata, nego u istom periodu 2019. godine. Propisani antibiotici na 1.000 stanovnika u 2020. godini nisu premašili stopu iz 2019. godine (Grafikon 2). Stopa je bila najniža u aprilu, nakon čega je porasla, ali je ipak ostala niža nego 2019. godine.

able to users (Figure 1). Electronic scheduling (e-order) was the most frequently used e-service (accessed 983,212 times in 2020) and was used 3.7 times more than the previous year. The new e-service – COVID-19, was specially developed during the pandemic, for the purpose of obtaining feed-back on test results (accessed more than 600,000 times in 2020). E-prescription was amongst the very frequently used e-applications (accessed 243,378 times).

OFFICE VISITS, HOME VISITS, TOTAL NUMBER OF VISITS

The total number of visits per 1,000 population in 2020 (Table 1) decreased by 12% (by quarters: -4.5%; -18.9%; -12.2%), which is also true for office visits (-4.42; -18.84; -12.34), while home visits of the PHC teams also



Grafikon 2. Broj propisanih recepata za ATC grupu J01 – Antibiotici za sistemsku upotrebu, na 1.000 stanovnika, u periodu januar – septembar; 2019. i 2020. godina, u Crnoj Gori; Izvor: Institut za javno zdravlje Crne Gore, 2020.

Figure 2. Number of prescriptions for ATC group J01 – Antibiotics for systemic use, per 1,000 population, in the period January – September; years 2019 and 2020, in Montenegro; Source: Institute of Public Health of Montenegro, 2020

Kada se uporedi deset dijagnoza (MKB-10) za koje su lekari propisali najviše recepata (na 1.000 stanovnika), broj recepata (na 1.000 stanovnika) je porastao za 8% u 2020. godini u odnosu na 2019. godinu (Grafikon 3). Najveći rast, od 24,4%, imali su recepti za bolesti cirkulatornog sistema.

DISKUSIJA

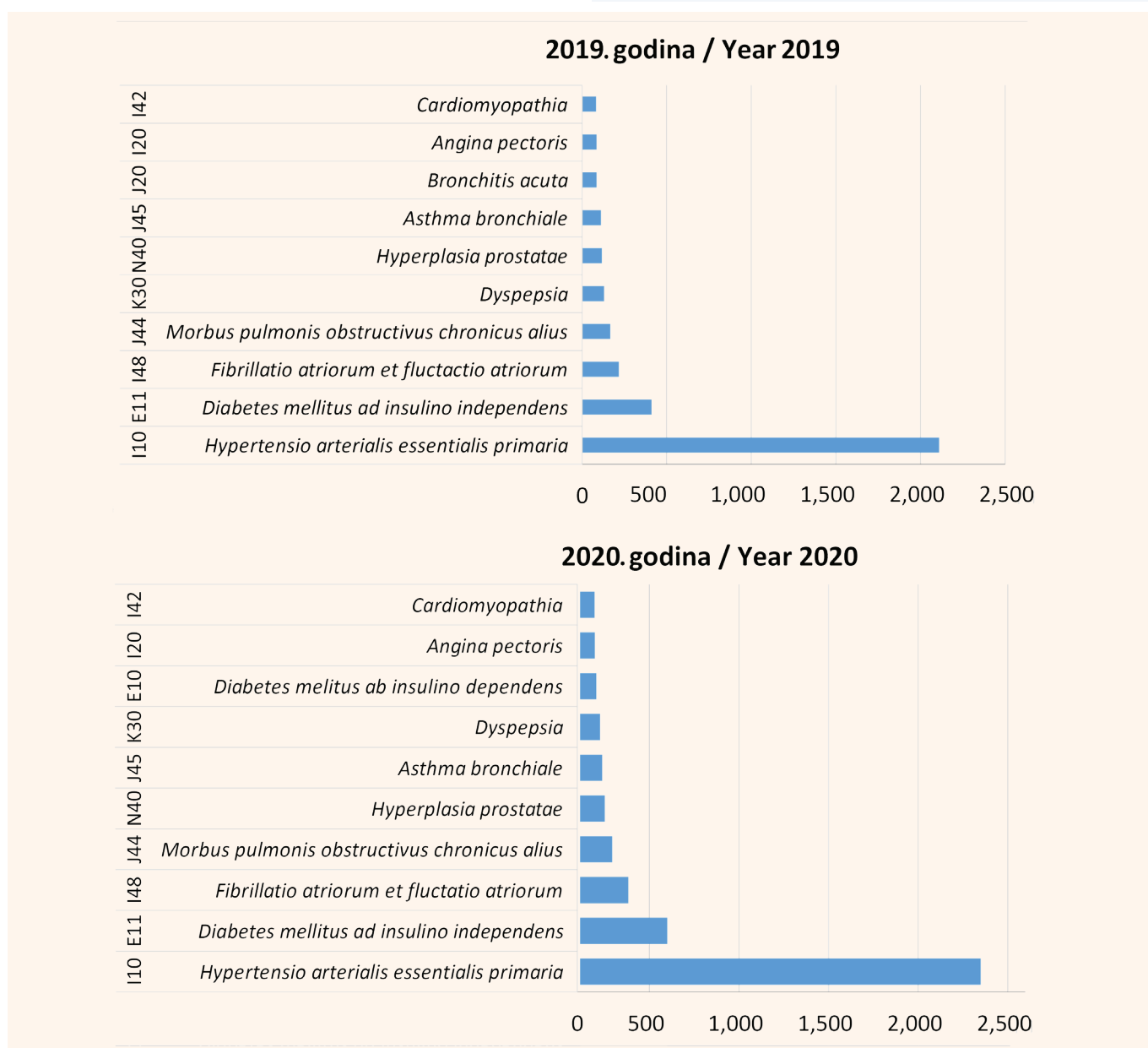
Ova studija stavlja akcenat na transformaciju i promene primarne zdravstvene zaštite, do kojih je došlo u prvim talasima epidemije KOVID-19 oboljenja u Crnoj Gori. PZZ se suočila sa izazovima u sprovođenju tzv. „dvostrukog koloseka“ u pružanju zdravstvenih usluga i pacijentima sa KOVID-19 oboljenjem i onima koji

decreased in the first and second quarters (-19.09%; -34.27%) and increased in the third quarter (+15.36%).

PRESCRIBED ANTIBIOTICS: JANUARY – SEPTEMBER 2019 AND JANUARY – SEPTEMBER 2020

The number of prescribed antibiotics in the period January – September 2020 decreased by 23%, regarding the total number of prescriptions, as compared to the same period in 2019. The prescribed antibiotics per 1,000 population in 2020 did not surpass the rate from 2019 (Figure 2). The rate was the lowest in April, upon which it increased but still remained lower than in 2019.

When the 10 diagnoses (ICD-10) for which doctors prescribed the highest number of prescriptions (per



Grafikon 3. Deset dijagnoza (MKB-10) za koje su doktori propisivali lekove (na 1.000 stanovnika), u 2020. i 2019. godini; Izvor: Institut za javno zdravlje Crne Gore, 2020.

Figure 3. Ten diagnoses (ICD-10) for which doctors prescribed medication (per 1,000 population), in the years 2020 and 2019; Source: Institute of Public Health of Montenegro, 2020

nisu oboleli od ove bolesti, što je bilo neophodno za uspostavljanje bezbednog okruženja u zdravstvenim ustanovama. Ova studija je pokazala da je PZZ, u Crnoj Gori, brzo prilagodila fizičku infrastrukturu (novi objekti ili transformisani postojeći kapaciteti) omogućivši da pacijenti, za koje se sumnjalo da su oboleli od KOVID-19 infekcije, budu pregledani i praćeni, te da je izvršila promene u upravljanju ljudskim resursima (modifikacija rasporeda rada, uvođenje dodatnih radnih sati, finansijski podsticaji, uređenje uslova rada). Nekoliko evropskih zemalja (Belgija, Holandija, Irska) organizovalo je usluge na sličan način, u KOVID-19 ambulancama (*hub*-ovima), kako bi se obezbedilo bezbedno zbrinjavanje pacijenata [12].

Naši podaci su pokazali da je, uprkos smanjenju poseta u okviru primarne zdravstvene zaštite (posete pacijenata u ambulancama i kućne posete lekara), u prvim mesecima nakon izbijanja pandemije KOVID-19 oboljenja, došlo do povećanja broja kontakata sa primarnom zdravstvenom zaštitom. Zanimljivo je i to da bi porast kućnih poseta u trećem kvartalu 2020. godine, mogao biti rezultat organizovanja kućnih poseta patronažnih timova primarne zdravstvene zaštite za praćenje pacijenata sa simptomima KOVID-19 infekcije. Mnogo zemalja je takođe prijavilo da je, kao indirektni rezultat izbijanja KOVID-19 pandemije, došlo do drastičnog pada obima poseta primarnoj zdravstvenoj zaštiti [15]. Pružanje zdravstvenih usluga na daljinu, putem telefonskih linija i veb portala „E-zdravlje“, povećalo je, u velikoj meri, broj kontakata sa primarnom zdravstvenom zaštitom, nakon izbijanja epidemije KOVID-19 infekcije u Crnoj Gori. Veliki broj evropskih zemalja je smatralo da je prelazak na pružanje zdravstvenih usluga na daljinu bilo neophodno [13]. E-usluge su omogućile pacijentima da korišćenjem svojih uređaja (računar, pametni telefon, tablet, itd.) dobiju propisane lekove. Lekari primarne zdravstvene zaštite su mogli da propišu lek bez fizičkog kontakta, odnosno posle telefonske konsultacije, što je bilo veoma pogodno za određene pacijente (npr. za starije osobe, osobe sa hroničnim ili drugim bolestima). Pored toga, e-usluge, kao što su e-rezultati zdravstvenih analiza ili e-prava, bile su pogodne za dobijanje rezultata laboratorijskih testova ili dokumentacije i drugih sertifikata, koje obično izdaje PZZ (npr. sertifikati za vrtić ili bolovanje), bez napuštanja kuće.

Smanjenje poseta u okviru primarne zdravstvene zaštite (posete pacijenata u ambulancama i kućne posete lekara) praćeno je smanjenjem broja propisanih antibiotika (januar – septembar 2020. godine u odnosu na januar – septembar 2019. godine), na 1.000 stanovnika. Studija sprovedena u drugoj maloj zemlji je otkrila da je pandemija KOVID-19 oboljenja imala

1,000 population) are compared, it transpires that the number of prescriptions (per 1,000 population) increased by 8% in 2020, as compared to 2019 (Figure 3). The greatest increase, amounting to 24.4%, was noted amongst the prescriptions for cardiovascular diseases.

DISCUSSION

This study emphasizes the transformation and changes in primary health care, which occurred in the first waves of the COVID-19 epidemic in Montenegro. PHC faced the challenges of implementing a parallel system in providing health services both to COVID-19 and non-COVID-19 patients, which needed to be established, in order to provide a safe environment in the healthcare units. This study has shown that, in Montenegro, PHC quickly adapted its physical infrastructure (by building new buildings or transforming existing facilities), thus enabling the examining and follow-up of patients with suspected COVID-19, and that it also implemented changes in human resources management (modifications to the work schedule, introducing additional working hours, financial incentives, improving/organizing work conditions). Several European countries (Belgium, the Netherlands, Ireland) organized services in a similar way, within COVID-19 clinics (hubs), in order to provide safe environments for patient care [12].

Our data have shown that, despite a decrease in visits within PHC (office visits and home visits), the number of contacts with PHC increased, in the first months after the outbreak of the COVID-19 pandemic. It is also interesting that the increase in home visits in the third quarter of 2020 could be the result of organized home visits by PHC teams for the purpose of monitoring patients with COVID-19 symptoms. Many countries also reported that, as an indirect result of the COVID-19 pandemic outbreak, a drastic decrease in the scope of PHC visits was registered [15]. Providing remote health services, via telephone lines and the web portal *E-zdravlje*, increased, to a great extent, the number of contacts with primary health care, upon the outbreak of the COVID-19 epidemic in Montenegro. A large number of European countries felt that the transition to remote health services was necessary [13]. E-services enabled the patients to obtain their prescription medication through the use of their electronic devices (computer, smartphone, tablet, etc.) Primary healthcare physicians could prescribe medication without physical contact, i.e., after a telephone consultation, which was very helpful to certain patients (e.g., elderly patients, patients with chronic and other diseases). Also, e-services, such as e-results of health tests or e-rights, were appropriate for obtaining lab test results or documents and certificates

mali uticaj na propisivanje antibiotika [13]. Međutim, u drugim slučajevima, ograničen pristup zdravstvenoj zaštiti zbog pandemije KOVID-19 oboljenja doveo je do povećanog propisivanja antibiotika [14]. Naša studija je pokazala da je broj propisanih antibiotika u trećem kvartalu 2020. godine porastao, te skoro dostigao nivo iz 2019. godine. Moguće je da je na povećanje propisivanja lekova uticalo enormno povećanje usluge e-recepta.

Što se tiče 10 vodećih dijagnoza iz MKB-10 klasifikacije, za koje su lekari propisivali lekove (na 1.000 stanovnika), najviše je porastao broj recepata za bolesti sistema krvotoka, koje su vodeći uzrok oboljevanja i smrti u Crnoj Gori. Očekivano, vodećih 10 dijagnoza MKB-10 klasifikacije, za koje su lekari propisivali lekove (na 1.000 stanovnika) u pandemiji bile su uobičajene dijagnoze: hipertenzija (I10), dijabetes (E11), hronična opstruktivna bolest pluća (J44), astma (J45), dispepsija (K30), *angina pectoris* (I20) i kardiomiopatija (I42). Iznenadjuće, dijagnoza akutnog bronhitisa (J20) nije bila među 10 vodećih uzroka za koje su lekari propisivali lekove tokom pandemije. Ukupan porast broja recepata za 10 vodećih dijagnoza MKB-10 klasifikacije ukazuje na to da je PZZ bila relativno dostupna tokom pandemije.

Naša studija ima nekoliko ograničenja. Korišćeni podaci su generisani iz izveštaja primarne zdravstvene zaštite u državnom vlasništvu i nisu uključili podatke o uslugama pružanim u privatnim ambulantama (propisani lekovi, posete, itd.). Osim što opisuje promene u primarnoj zdravstvenoj zaštiti i nekoliko ishoda, našoj studiji nedostaju zaključci u pogledu efikasnosti i kvaliteta nege. Promene primarne zdravstvene zaštite koje su se desile nisu praćene trenutnim promenama u informacionom sistemu i izveštavanju, što se odrazilo na kvalitet dostupnih podataka. Nisu ispitane posledice koje je odlaganje redovnih poseta ustanovama primarne zdravstvene zaštite imalo na zdravlje pacijenata. Vremenski period koji je obuhvatila ova studija je relativno kratak, tako da je preporuka da se nastavi detaljnije istraživanje odgovora primarne zdravstvene zaštite na pandemiju KOVID-19 oboljenja.

ZAKLJUČAK

U Crnoj Gori, primarna zdravstvena zaštita se suočila sa naglim promenama, nakon izbijanja pandemije KOVID-19 oboljenja, što je rezultiralo transformacijom načina pružanja usluga i upravljanja. Prelaskom sa poseta u ordinaciji na – kućne posete, telefonske konsultacije i e-usluge, bez fizičkog kontakta, omogućen je pristup zdravstvenim uslugama. Ukupan porast broja recepata za 10 vodećih dijagnoza (MKB-10) ukazuje da je PZZ bila relativno dostupna tokom pandemije. Propisivanje antibiotika pratilo je povećanje korišćenja usluga

customarily issued by PHC (health certificates for preschool attendance or sick-leave certificates) without any need for the patient to leave their home.

The decrease in the number of visits within PHC (office visits and home visits) was followed by the decrease in the number of prescribed antibiotics (January – September 2020 as compared to January – September 2019), per 1,000 population. A study from another small country revealed that the COVID-19 pandemic had a small impact on the prescribing of antibiotics [13]. However, in other cases, the limited access to primary health care resulting from the COVID-19 pandemic, led to the increased prescribing of antibiotics [14]. Our study has shown that the number of prescribed antibiotics increased in the third quarter of 2020, almost reaching the level of 2019. It is possible that the increase in the prescribing of drugs was influenced by the enormous increase in the use of the e-prescription service.

Regarding the 10 leading diagnoses from the ICD-10, for which doctors prescribed medication (per 1,000 population), the number of prescriptions increased the most for circulatory system diseases, which are, indeed, the leading cause of morbidity and mortality in Montenegro. As expected, the 10 leading ICD-10 diagnoses for which doctors prescribed medication (per 1,000 population) during the pandemic, were the usual diagnoses: hypertension (I10), diabetes (E11), chronic obstructive pulmonary disease (J44), asthma (J45), dyspepsia (K30), *angina pectoris* (I20), and cardiomyopathy (I42). What is surprising is that the diagnosis of acute bronchitis (J20) was not amongst the 10 leading causes for which doctors prescribed medication during the pandemic. The total increase of the number of prescriptions for the 10 leading ICD-10 diagnoses indicates that PHC was relatively accessible during the pandemic.

Our study has several limitations. The data used in the study were generated from the reports pertaining to state-owned PHC and did not include data on health services provided at privately owned clinics (prescribed medication, visits, etc.). While the study describes the changes in primary health care and several outcomes, it lacks conclusions with respect to the efficiency and quality of care. The changes in PHC that occurred were not followed by changes in the information and reporting system, which has had impact on the quality of available data. The effect that the postponing of regular visits to PHC clinics has had on the health of patients has not been investigated and analyzed. The time period covered by this study is relatively short, which is why the recommendation is that a more detailed analysis should be performed regarding the response of primary health care to the COVID-19 pandemic.

e-zdravstva, ali nije premašilo broj recepata iz 2019. godine. Iako je PZZ uspela da se delom transformiše, ima prostora za unapređenje u delu zadovoljenja potreba prevencije i lečenja drugih bolesti.

SPISAK SKRAĆENICA

ATC – Anatomsko-terapijsko-hemijska klasifikacija (engl. *Anatomical Therapeutic Chemical Classification System*)

IJZCG – Institut za javno zdravlje Crne Gore

JIE – Jugoistočna Evropa

MKB-10 – Međunarodna klasifikacija bolesti, 10 revizija

NKT – Nacionalno koordinaciono telo

PZZ – primarna zdravstvena zaštita

PCR – lančana reakcija polimeraze (engl. *polymerase chain reaction*)

Sukob interesa: Nije prijavljen.

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CONCLUSION

In Montenegro, primary health care faced abrupt changes after the COVID-19 outbreak, which resulted in the transformation of the method of management and providing services. With the transition from office visits to – home visits, telephone consultations, and e-services, without physical contact, access to PHC was made possible. The overall increase in the number of prescriptions issued for the 10 leading diagnoses (ICD-10) indicates that PHC was relatively accessible during the pandemic. The prescribing of antibiotics followed the increase in the use of e-health services, but it did not surpass the number of prescriptions issued in 2019. Although PHC was, in part, transformed, there is still room for improvement in meeting health needs in the area of prevention and treatment of other diseases.

LIST OF ABBREVIATIONS AND ACRONYMS

ATC – Anatomical Therapeutic Chemical Classification System

ICD-10 – International Classification of Diseases, 10th Revision

IPHM – Institute of Public Health of Montenegro

NCB – National Coordinating Body

PHC – primary health care

PCR – polymerase chain reaction

SEE – Southeast Europe

Conflict of interest: None declared.

11. Health Insurance Fund of Montenegro web portal E-zdravlje. [Internet]. [pristupljeno 19.11.2021.]. Dostupno na: <https://www.ezdravlje.me/ZakazivanjePrva/faces/Pocetna;jsessionid=852477a74e392f681a754209a93>.
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