



UNAPREĐENJE NADZORA NAD VODOSNABDEVANJEM, SANITACIJOM I HIGIJENOM U OBJEKTIMA OD VEĆEG HIGIJENSKO EPIDEMIOLOŠKOG ZNAČAJA

IMPROVEMENT OF CONTROL OVER WATER SUPPLY, SANITATION AND HYGIENE IN OBJECTS OF HIGHER HYGIENIC EPIDEMIOLOGICAL SIGNIFICANCE

REZIME

Program zaštite stanovništva od zaraznih bolesti se obavlja od 1978. godine kroz aktivnosti epidemiologije, higijene i promocije zdravlja. Program sprovodi mreža instituta i zavoda za javno zdravlje uz koordinativnu ulogu Instituta za javno zdravlje Srbije "Dr Milan Jovanović Batut". U Institutu za javno zdravlje Srbije je iskorišćena izrada novog Stručno metodološkog uputstva za sprovođenje Programa (deo Uredbe o zaštiti stanovništva od zaraznih bolesti iz 2016. godine), da se u pojedinim oblastima naprave izmene za koje je procenjeno da će moći da budu implementirane. Jedna od oblasti koja se u Programu prati su i "objekti od većeg higijensko epidemiološkog značaja" i napravljene su promene u nadzoru nad vodosnabdevanjem, sanitacijom i uređajima za pranje ruku.

Ključne reči: snabdevanje vodom, sanitacija, higijena

SUMMARY

The Program for the protection of the population against infectious diseases has been carried out since 1978 through the activities of epidemiology, hygiene and health promotion. The Program is implemented by a network of institutes of public health, with the coordinative role of the Institute for Public Health of Serbia "Dr. Milan Jovanovic Batut". At the Institute of Public Health of Serbia, the adoption of a new Regulation on the Protection of Population from Infectious Diseases (2016) was used to make changes through the Guidance for Survey Methodology, that were deemed to be able to be implemented. One of the areas covered by the Program are also "objects of higher hygienic epidemiological significance" and changes have been made in the control of water supply, sanitation and hand washing devices.

Key words: water supply, sanitation, hygiene

1. UVOD

Program zaštite stanovništva od zaraznih bolesti (u daljem tekstu Program) se obavlja dugi niz godina kroz aktivnosti epidemiologije, higijene i promocije zdravlja [1]. U delatnosti higijene su obuhvaćene najvažnije oblasti koje mogu biti od značaja za nastanak i širenje zaraznih bolesti. Pojedine teme se prate i po posebnim programima: vode za piće, rekreativne, površinske vode, namirnice, predmeti opšte upotrebe, stanje deponija, upravljanje tečnim otpadnim materijama i drugo [2][3][4]. Posebni programi sadrže detaljnije podatke i analize, dok Program zaštite stanovništva od zaraznih bolesti obuhvata pomenute oblasti u manjem obimu.

Program je ustanovljen 1978. godine, a jedan od ciljeva (cilj 3.2.4.) je unapređenje sanitarno higijenskih uslova u objektima od većeg higijensko epidemiološkog značaja. Program sprovodi mreža

1. INTRODUCTION

The Program for the protection of the population against infectious diseases (hereinafter referred to as the Program) is carried out for many years through the activities of epidemiology, hygiene and health promotion [1]. The activities of hygiene cover the most important areas that can be of importance for the emergence and spread of infectious diseases. Some topics are also followed by special programs: drinking water, recreational, surface water, groceries, consumer goods, landfills, liquid waste management and others [2] [3] [4]. Specific programs contain more detailed data and analyzes, while the Program for the Protection of Population from Infectious Diseases covers the mentioned areas on a smaller scale.

The program was established in 1978, and one of the goals (objective 3.2.4.) is the improvement of sanitary and hygienic conditions in objects of a higher hygienic epidemiological significance. The program

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instituta i zavoda za javno zdravlje, na osnovu Zakona o zaštiti stanovništva od zaraznih bolesti [5] i Uredbe o zaštiti stanovništva od zaraznih bolesti (u daljem tekstu Uredba). [6] Koordinativnu ulogu ima Institut za javno zdravlje Srbije "Dr Milan Jovanović Batut". Izveštavanje je godišnje, a evaluacija se sprovodi na deset godina i predstavlja osnov za uvođenje izmena i unapređenje aktivnosti.

U radu se koriste i brojni drugi zakoni i podzakonska akta koji regulišu: zdravstvenu ispravnost vode za piće [7]; sanitarne uslove; zaštitu stanovništva od zaraznih bolesti; uloge i odgovornosti mreže instituta i zavoda za javno zdravlje, odlaganje otpadnih voda, upravljanje čvrstim, medicinskim, farmaceutskim otpadom i drugo. [8][9][10][11][12][13][14]

Prema Uredbi i Stručno metodološkom uputstvu (u daljem tekstu SMU) pod "objekti od šireg higijensko-epidemiološkog značaja" podrazumevaju se: moteli, autokampovi, granični prelazi, benzinske pumpe, parkirališta, javni nužnici, autobuske i železničke stanice, zelene i stočne pijace.

Da predstavimo navedene objekte odlučili smo se zbog njihovog velikog higijensko epidemiološkog značaja i mišljenja da im se poklanja manje pažnje nego drugim. Objekti iz ove grupe su veoma različiti po građevinskim zahtevima, nameni, vlasništvu, načinima upravljanja i finansiranja, tekućem i investicionom ulaganju. Veoma je različita i lokacija (gradska jezgra i centralni vodovod i kanalizacija, ili van grada sa lokalnim izvorima vodosnabdevanja i dispozicijom otpadnih materija). Sa druge strane, zajednička im je velika frekvencija i broj korisnika, velika mogućnost nastanka i prenošenja zaraznih bolesti, neretko veoma loš estetski i vaspitni utisak koji ostavljaju.

Specifičnosti nadzora za svaku navedenu vrstu objekata su u Stručno metodološkom uputstvu opisane posebno.

Zbog higijensko epidemiološkog značaja, uticaja na zdravlje, procene rizika, izveštavanja i upoređivanja rezultata, za snabdevanje vodom, sanitaciju i uređaje za pranje ruku traženo je da se za sve objekte iz grupe izveštava na isti način:

1. Snabdevanje vodom

- Gradski vodovod
- Seoski vodovod
- Sopstveni izvor vodosnabdevanja:
Unapređen - bušeni bunar, zaštićeni izvor, zaštićeni kopani bunar, kišnica
Neunapređen - nezaštićeni izvor, nezaštićeni kopani bunar, cisterna (mobilna ili stacionarna)

is implemented by a network of institutes and public health institutes, based on the Law on Population Protection against Infectious Diseases [5] and the Regulation on the Protection of Population from Infectious Diseases (hereinafter: the Regulation). [6] The Institute for Public Health of Serbia "Dr. Milan Jovanovic Batut" has a coordinative role. Reporting is annual, and the evaluation is conducted for ten years and is the basis for the introduction of changes and improvement of activities.

A number of other laws and bylaws that regulate: health safety of drinking water [7] are also used in this paper; sanitary conditions; protection of the population against infectious diseases; roles and responsibilities of the network of institutes for public health, waste water disposal, management of solid, medical, pharmaceutical waste, and others. [8] [9] [10] [11] [12] [13] [14]

According to the Regulation and the Guidance for Survey Methodology (hereinafter referred to as Guidance), "objects of wider hygienic-epidemiological importance" include: motels, car camps, border crossings, gas stations, parking lots, public utensils, bus and train stations, green and livestock markets.

To present these objects we decided because of their great hygienic epidemiological significance and the opinion that they are given less attention than others. The facilities in this group are very different in terms of construction requirements, intentions, ownership, management and financing methods, current and investment investments. There is also a very different location (city core and central water supply and sewerage, or outside the city with local sources of water supply and disposing of waste materials). On the other hand, they share a large frequency and number of users, a great possibility of the emergence and transmission of infectious diseases, often very bad aesthetic and educational impression they leave. The specificity of the control for each of the mentioned types of objects is described in the Guidance separately.

Due to hygienic epidemiological significance, health effects, risk assessments, reporting and comparison of results, water supply, sanitation and hand washing devices, it is required that all facilities in the group be reported in the same way:

1. Water supply

- Central water supply
- Small water supply
- Local source of water supply:
Improved - dug well, protected spring, protected shore well, rainwater
Unimproved - unprotected spring, unprotected dug well, tank (mobile or stationary)



Slika 1. Unapređeni izvor vodosnabdevanja Izvor: arhiva Instituta za javno zdravlje Srbije Istraživanje Brza procena kvaliteta vode za piće

Figure 1. Improved source of water supply Source: archive of the Institute of Public Health of Serbia Research: Rapid Assessment of Drinking Water Quality

2. Sanitacija (kanalisanje):

- Kanalizacioni sistem
- Septička jama nepropusna
- Drugo: propusna jama, površinska voda, laguna, na slobodnu površinu..

3. Toaleti:

- Zadovoljava podrazumeva
 1. Postojanje unapređenih toaleta
 2. Odvojeni za korisnike i zaposlene
 3. Odvojeni po polu
 4. Postoji briga o menstrualnoj higijeni (prisustvo kante sa poklopcem u kabini toaleta)
 5. Dostupni su osobama sa invaliditetom
- Ne zadovoljava - ovde se svrstava toalet koji nije ispunio makar jedan kriterijum iz kategorije "Zadovoljava"

4. Funkcionalni uređaji za pranje ruku

Ovo su uređaji u kojima pored ispravnih sanitarija, ima vode i sapuna u momentu obilaska objekta, sa predloženim mogućnostima:

1. Da
2. Ne
3. Nema uređaja

2. Sanitation:

- Sewage system
- Septic tank
- Other: permeable pit, surfacewater, lagoon, on free surface

3. Toilets:

- Satisfies implies:
 1. Existence of improved toilets
 2. Separated for users and employees
 3. Separated by gender
 4. There is a concern about menstrual hygiene (presence of a bucket with a lid in the cabin of the toilet)
 5. Available to persons with disabilities
- Not satisfied - here is a toilet that did not meet at least one criterion in the category "Satisfies"

4. Functional hand washing devices

These are devices in which, in addition to the functional sanitary facilities, there is water and soap at the moment of visiting the facility, with the proposed possibilities:

1. Yes
2. No
3. No device



Korišćena je klasifikacija zajedničkog programa Svetske zdravstvene organizacije (u daljem tekstu SZO) i UNICEF-a [15]. Pored toga, kvalitetu rada je doprinelo i iskustvo iz istraživanja Brza procena kvaliteta vode za piće (*Rapid Assessment Drinking Water Quality-RADEK*). [16] Istraživanje je 2016. godine sprovedeno u izabranim područjima na teritoriji centralne Srbije i Vojvodine, prema metodologiji SZO i UNICEF- i u saradnji sa mrežom zavoda i instituta za javno zdravlje. [17]

The classification of a joint program of the World Health Organization (hereinafter WHO) and UNICEF [15] was used. In addition, the quality of the work was also contributed by the experience from the Rapid Assessment of Drinking Water Quality (RADEK). [16] The research was carried out in 2016 in selected areas in the territory of Central Serbia and Vojvodina, according to WHO and UNICEF methodology, in cooperation with the network of institutes for public health. [17]



Slika 2. Neunapređeni izvor vodosnabdevanja Izvor: arhiva Instituta za javno zdravlje Srbije Istraživanje Brza procena kvaliteta vode za piće

Figure 2. Unimproved source of water supply Source: archive of the Institute of Public Health of Serbia Research: Rapid Assessment of Drinking Water Quality

2. METOD

U prilog odluci da se metodologija unapredi išli su rezultati poslednje evaluacije Programa, uočeni nedostaci dosadašnjeg rada, preuzete međunarodne obaveze i okolnost donošenja nove Uredbe o zaštiti stanovništva od zaraznih bolesti, 2016. godine.

Pored Stručno-metodološkog uputstva u Institutu za javno zdravlje Srbije su izrađena i prateća dokumenta: odgovarajući obrasci (18 ukupno, u Excel formatu); Upitnici za rad na terenu i Uputstvo za popunjavanje Upitnika.

Lista obrazaca za SMU 1. - 12. (18 ukupno):

1. Centralni način snabdevanja vodom za piće gradskih naselja
- 1.a Rezultati ispitivanja higijenske ispravnosti vode za piće iz gradskih vodovoda

2. METOD

In support of the decision to improve the methodology, the results of the last evaluation of the Program were examined, the shortcomings of the previous work, the assumed international obligations and the circumstances of the adoption of the new Regulation on protection of the population against infectious diseases, in 2016, were noticed.

In addition to the Guidance, the Institute for Public Health of Serbia prepared supporting documents: forms (18 in total, in Excel format); Questionnaires for field work and Instructions for Completing the Questionnaires.

Form List 1. - 12. (18 total):

1. Central water supplies - urban settlements
- 1.a. Results for drinking water quality - urban

2. Centralni način snabdevanja vodom za piće seoskih naselja
- 2.a Rezultati ispitivanja higijenske ispravnosti vode za piće iz seoskih naselja
3. Lokalni način snabdevanja vodom za piće iz javnih vodnih objekata
- 3.a Rezultati ispitivanja higijenske ispravnosti vode za piće iz javnih vodnih objekata
4. Dispozicija tečnih otpadnih materija
5. Dispozicija čvrstih otpadnih materija - gradske deponije smeća
6. Dispozicija čvrstih otpadnih materija - seoske deponije smeća
7. Higijensko sanitarni nadzor objekata od šireg higijensko epidemiološkog značaja
8. Higijensko sanitarni nadzor objekata za društvenu ishranu
- 8.a Higijensko sanitarni nadzor objekata za društvenu ishranu, rezultati pregleda briseva i namirnica
9. Higijensko sanitarni nadzor objekata za boravak dece i omladine: snabdevanje vodom, sanitacija, uređaji za pranje ruku, predložene mere
- 9.a Higijensko sanitarni nadzor objekata za boravak dece i omladine: zdravstvena ispravnost vode za piće
10. Higijensko sanitarni nadzor u zdravstvenim ustanovama: zdravstvena ispravnost vode za piće
- 10.a Higijensko sanitarni nadzor u zdravstvenim ustanovama: snabdevanje vodom, sanitacija, uređaji za pranje ruku i rezultati pregleda briseva
11. Objekti za prihvatanje i smeštaj migranata (izbeglica, tražilaca azila i azilantata)
12. Higijensko epidemiološki aspekt vandrednih situacija

SMU je namenjeno učesnicima za sprovođenje Programa i praćenje realizacije. Za izradu Uputstva korišćena su odgovarajuća dokumenta, literatura, propisi i preporuke.

Uredbom su utvrđeni ciljevi koje treba postići u zaštiti stanovništva od zaraznih bolesti, mere, aktivnosti i postupci koji će se preduzimati i sprovođiti za ostvarenje ciljeva, prioriteta, organizacija, učesnici u sprovođenju Programa, kao i praćenje sa kontrolom sprovođenja Programa. Stručno - metodološko uputstvo je izrađeno u skladu sa navedenim.

Najvažniji saradnici za primenu Programa su službe za higijenu mreže instituta i zavoda za javno zdravlje. Dosadašnji rezultati, predviđene izmene i dokumenta su predstavljena saradnicima iz mreže instituta i zavoda za javno zdravlje na stručnoj konferenciji povodom Svetskog dana voda. Konferencija je održana u Institutu za javno zdravlje Srbije „Dr Milan Jovanović Batut“ u martu 2017. godine.

Izvor informacija za objekte od šireg higijensko epidemiološkog značaja, koje u radu predstavljamo su godišnji izveštaji okružnih instituta i zavoda za javno zdravlje za period januar – decembar 2017. i 2016. godine i rezultati Evaluacije Programa iz 2011. godine (period 2002.-2010.godina).

- settlements
2. Small water supplies - rural settlements
- 2.a. Results for drinking water quality - rural settlements
3. Local source for water supply
- 3.a Results for drinking water quality - local source for water supply
4. Liquid waste disposal
5. Solid waste disposal - urban settlements
6. Solid waste disposal - rural settlements
7. Hygienic sanitary supervision of facilities of a wider hygienic epidemiological significance
8. Hygienic sanitary control of facilities for collective nutrition
- 8.a Hygienic sanitary monitoring of collective food facilities, results of smears and food quality
9. Hygienic sanitary supervision of facilities for children and youth: water supply, sanitation, hand washing devices, proposed measures
- 9.a Hygienic sanitary supervision of facilities for children and young: health safety of drinking water
10. Hygienic sanitary supervision in health institutions: health safety of drinking water
- 10.a Hygienic sanitary supervision in health institutions: water supply, sanitation, hand washing devices and smears test results
11. Facilities for acceptance and accommodating migrants (refugees, asylum seekers and asylants)
12. Hygienic epidemiological aspect of emergency situations

The Guidance is intended for participants to implement the Program and monitor the implementation. Appropriate documents, literature, regulations and recommendations were used for the preparation of the document.

The Regulation sets out the goals to be achieved in protecting the population against infectious diseases, measures, activities and procedures that will be undertaken and implemented to achieve the goals, priorities, organizations, participants in the implementation of the Program, as well as monitoring with the control of the implementation of the Program. The instructions have been prepared in accordance with the above.

The most important partners for the implementation of the Program are the hygiene departments of the Public Health Institutes. Past results, planned changes and documents were presented to representatives at the conference on the occasion of the World Water Day. The conference was held in the Institute for Public Health of Serbia “Dr. Milan Jovanovic Batut” in March 2017.

The source of information for facilities of a wider hygienic epidemiological significance, which we present in our work are the annual reports of the public health institutes for the period January - December 2017 and 2016 and the results of the Program Evaluation from 2011 (period 2002-2010). years).



3. REZULTATI I DISKUSIJA

3.1. Rezultati za period 2002.- 2010. godina

Podaci za ovaj period su dobijeni iz Evaluacije Programa zaštite stanovništva od zaraznih bolesti u Republici Srbiji – oblast Higijene, koja je u Institutu Batut urađena 2011. godine. U ovom periodu Program je sproveden u skladu sa tada važećom Uredbom [18] i Stručno metodološkim uputstvom. Objekti nisu izmenjeni i nadzor je obavljen nad motelima, autokampovima, graničnim prelazima, benzinskim pumpama, parkiralištima, javnim nužnicima, autobuskim i železničkim stanicama i pijacama. Za praćenje su bile predviđene sledeće varijable: broj objekata, broj objekata pod nadzorom, broj izvršenih nadzora, stanje objekta zadovoljava (sa mogućnostima da, ne, delimično) i predložene mere (date, izvršene, delimično, ne). U Vojvodini se Program sprovodi upravo od 2002. godine i Higijensko epidemiološke službe domova zdravlja (u daljem tekstu HE službe) su bile formirane u malom broju okruga. Ovo je rezultiralo specifičnostima u odnosu na organizaciju rada, obim obavljenih aktivnosti i rezultate.

U ovom radu rezultati su predstavljeni zbirno, za celu teritoriju Republike Srbije.

- Broj objekata varira u periodu 2002.–2010.godina (1066 objekata 2007, 1210– 2003, 1436 – 2002 i 1473–2010. godine).
- Broj objekata pod nadzorom takođe varira, u celini je smanjen: 1330 – 2002. godine, poslednje četiri godine je 928 do 1005.
- Broj obavljenih nadzora: 1725 do 2432 u periodu 2002 - 2006.

1108 do 1516 u periodu
2007 - 2010.

U posmatranom periodu je smanjen i broj datih mera: najviše mera je predloženo 2004. godine (1107), a najmanje 2010. godine (406).

Smanjenje obima aktivnosti (broj objekata u evidenciji, broj objekata pod nadzorom, broj izvršenih nadzora i izrečenih mera) je u velikoj meri uzrokovano gašenjem HE službi u Domovima zdravlja, 2006.godine. [19] Ovo se zapaža naročito u centralnoj Srbiji gde su HE službe radile dugi niz godina u kontinuitetu i imale širok spektar poslova na terenu. U Vojvodini su ove službe počele da se formiraju 2002. pa se ukupno smanjenje aktivnosti manje odnosi na tu teritoriju.

U izveštajima pojedinih zavoda se navodi da nadzor nije rađen po Programu već su prikazani rezultati iz ugovorenih obaveza. Kao razlog se navodi nedostatak materijalnih sredstava, manjak kadra, usmeravanje na druge poslove ili nedostatak vozila za odlazak na teren.

3. RESULTS AND DISCUSSION

3.1. Results for the period 2002-2010

Data for this period were obtained from the Evaluation of the Program for the Protection of the Population from Infectious Diseases in the Republic of Serbia - the field of Hygiene, which was done in the Batut Institute in 2011. During this period, the Program was implemented in accordance with the then applicable Regulation [18] and the following Guidance. The facilities have not been changed and supervision has been carried out over motels, car camps, border crossings, gas stations, parking lots, public utensils, bus and railway stations and markets. The following variables were foreseen for monitoring: the number of objects, the number of objects controlled, the number of controls executed, satisfactory state of the facility (with the possibilities yes, no, partially) and the proposed measures (given, performed, partially, no). In Vojvodina, the Program has been implemented since 2002 and the Hygienic Epidemiological Services (hereinafter HE services) were formed in a small number of districts. This resulted in specificities in relation to the organization of work, scope of activities and results.

In this paper the results are presented for the whole territory of the Republic of Serbia.

- The number of objects varies in the period from 2002 to 2010 (1066 objects 2007, 1210- 2003, 1436 - 2002 and 1473-2010)
- The number of objects under control also varies, it is generally reduced: 1330 - 2002, the last four years are 928 to 1005.
- Number of inspections carried out: 1725 to 2432 in the period 2002-2006.

1108 to 1516
in the period
2007-2010.

In the observed period the number of measures was reduced: the largest number were proposed in 2004 (1107) and the smallest in 2010 (406).

Reduction in the volume of activities (objects recorded, number of facilities under supervision, number of controls performed and measures given) was largely caused by the closure of HE services in the Health care facilities in 2006. [19] This is observed especially in central Serbia, where the HE services worked for many years in continuity and had a wide range of field work. In Vojvodina, these services began to be formed in 2002, so the overall decrease in activity is less relevant to this territory.

It happens that is reported for a part of the planned facilities (gas stations, parking lots, bus stations, railway stations or markets); in some institutes, this segment of the Program is not reported, with the remarks that the closing of HE services and reduced

Tabela 1. Objekti od većeg higijensko-epidemiološkog značaja (moteli, autokampovi, granični prelazi, benzinske pumpe, parkirališta, autobuske i železničke stanice, pijace) Ukupno Srbija

In some reports we see that supervision was not done according to the Program, but the results from the contracted obligations are presented. The reason is the lack of material resources, lack of staff, other priorities, lack of vehicles for field work.

Table 1. Objects of major hygienic-epidemiological significance (motels, car camps, border crossings, gas stations, parking lots, bus and train stations, markets) Total Serbia

		2002.	2003.	2004.	2005.	2006.	2007.	2008.	2009.	2010.		
Broj objekata	Number of objects	1436	1210	1129	1103	1168	1066	1383	1351	1473		
Broj objekata pod nadzorom	Number of objects under control	1330	1097	1009	1014	1053	928	1005	974	1001		
Broj izvršenih nadzora	Number of executed controls	1725	2002	2432	2043	1724	1516	1390	1204	1108		
Stanje objekta zadovoljava	da	The condition of the facility satisfies	yes	328	456	403	408	500	404	754	703	734
	ne		no	240	258	297	262	228	199	221	199	224
	delimično		partially	331	318	386	284	340	282	263	219	198
Dobijeni podaci za objekata		Received data for objects		899	1032	1086	954	1068	885	1238	1121	1156
Predložene mere	date	Proposed measures	given	1094	1050	1107	857	795	555	623	531	406
	izvršene		done	176	165	208	274	213	153	258	236	149
	delimično		partially	239	289	293	176	297	206	175	123	127
	ne		no	647	563	435	169	273	129	124	104	62
Dobijeni podaci za objekata		Received data for objects		1062	1017	936	619	783	488	557	463	338

Dešava se i da se izveštava za deo predviđenih objekata (benzinske pumpe, parkirališta, autobuske, železničke stanice ili pijace); u pojedinim institutima/zavodima se ne izveštava o ovom segmentu Programa uz napomene da je gašenje HE službi i smanjena i promenjena nadležnost sanitarne inspekcije znatno smanjila prisustvo zdravstvenog sektora na terenu. U dva okruga je aktivnost za posmatrani period obavljana četiri godine, a u ostalom periodu ne.

3.2. Period 2002.- 2010. godina

U periodu od 2010. do 2016. godine Program se sprovodi na sličan način i karakteriše ga neujednačenost planiranja i izvođenja aktivnosti i nezadovoljavajuće izveštavanje.

3.3 Rezultati za 2017. godinu

1. Snabdevanje vodom

Na gradski vodovod, što je najbezbednija opcija priključeno je 538 objekata (67,4%). Seoski vodovod koristi 129 objekata (16,2%). Sopstveni izvor

and changed jurisdiction of the sanitary inspection significantly reduced the presence of the health sector in the field. In two districts, the activity for the observed period was carried out for four years, and in the remaining period, no.

3.2. PERIOD 2002-2010

In the period from 2010 to 2016, the Program is implemented in a similar manner and is characterized by inadequate planning and implementation of activities and unsatisfactory reporting.

3.2 Results for 2017

1. Water supply

The central water supply, the safest option, has 538 facilities (67.4%). Rural (small) water supply uses 129 facilities (16.2%). The local source of water supply has 131 facilities, of which 118 have been improved (14.8%) and 13 are nonimproved (1.6%).

Improved - dug well, protected spring, protected shore well, rainwater



vodosnabdevanja ima 131 objekat, od čega je 118 unapređenih (14,8 %) i 13 neunapređenih (1,6%).

Unapređen - bušeni bunar, zaštićeni izvor, zaštićeni kopani bunar, kišnica

Neunapređen - nezaštićeni izvor, nezaštićeni kopani bunar, cisterna (mobilna ili stacionarna)

2. Sanitacija (kanalisanje)

Na kanalizacioni sistem je priključeno 568 objekata (72,3%). Nepropusnu septičku jamu koristi 140 objekata (17,1%) i drugo 86 objekata (10,6%). "Drugo" su nebezbedni načini odlaganja otpadnih voda - propusna jama, površinska voda, laguna, na slobodnu površinu, sa rizikom za štetan utica na zdravlje ljudi i životnu sredinu.

3. Toaleti

Kriterijum zadovoljava ispunjava 258 objekata (32,9%)

Zadovoljava podrazumeva:

1. Postojanje unapređenih toaleta (Toalet sa ispiranjem ili slabijim ispiranjem u kanalizacioni sistem, septičku jamu ili nužničku jamu, toalet sa nužničkom jamom i unapređenom ventilacijom i kompozitni toalet),
2. odvojeni za korisnike i zaposlene,
3. odvojeni po polu,
4. briga o menstrualnoj higijeni (prisustvo kante sa poklopcem u kabini toaleta),
5. dostupni su osobama sa invaliditetom (svih 5 kriterijuma moraju biti ispunjeni da bi objekat pripao ovom nivou standarda)

U kategoriji ne zadovoljava je registrovano 527 objekata (67,1%)

Ne zadovoljava - ovde se svrstava toalet koji nije ispunio makar jedan kriterijum iz kategorije "Zadovoljava"

4. Funkcionalni uređaji za pranje ruku

Ovo su uređaji u kojima pored ispravnih sanitarija ima vode i sapuna u momentu obilaska objekta.

Funkcionalne uređaje za pranje ruku ima 337 objekata (81,2%). Uređajii nisu funkcionalni (postoje, ali nema vode i sapuna) u 46 objekata (11,1%), a uređaji ne postoje u 32 objekta (7,7%).

5. Predložene mere:

Predloženo je 313 mera. Dobijeni su podaci za 310, od čega je izvršeno 69 (22,2%). Najviše je delimično izvršenih mera - 187 ili 60,4%. Neizvršenih mera je 54 ili 17,4%.

I u prvoj godini sprovođenja programa po novoj metodologiji održava se neujednačenost sprovođenja aktivnosti. Neizveštavanje (odsustvo podataka, a nije naglašeno da se aktivnost ne radi), nepotpuni podaci ili se aktivnost ne obavlja beleži se u devet instituta/

Unimproved - unprotected spring, unprotected dug well, tank (mobile or stationary)

2. Sanitation

There are 568 objects connected to the sewerage system (72.3%). The septic tank uses 140 facilities (17.1%) and other 86 facilities (10.6%). "Other" are unsafe ways of disposing of wastewater - permeable pit, surface water, lagoon, on a free surface, with a risk of harmful effects on human health and the environment.

3. Toilets

The criterion satisfies has 258 objects (32.9%) It meets the following:

1. Existence of improved toilets (Toilets with rinsing or poor rinsing in the sewer system, septic tank or a pit, toilet with a toilet pit and improved ventilation and composite toilet),
 2. Separated for users and employees,
 3. Separated by gender,
 4. care for menstrual hygiene (the presence of a bucket with a lid in the cabin of the toilet),
 5. are available to persons with disabilities (all 5 criteria must be met in order for the facility to belong to this level of standard)
- In the category does not satisfy is registered 527 objects (67.1%)

Not satisfies - here is a toilet that did not meet at least one criterion in the category "Satisfies"

4. Functional hand washing devices

These are devices in which, besides the functional sanitary facilities, there are water and soap at the moment of checking.

Functional hand washing devices have 337 objects (81.2%). The devices are not functional (there are but no water and soap) in 46 facilities (11.1%), and devices do not exist in 32 facilities (7.7%).

5. Proposed measures:

313 measures were proposed. Data were obtained for 310, out of which 69 (22.2%) were performed. The most part is partially implemented measures - 187 or 60.4%. Non-completed measures are 54 or 17,4%.

Again, in the first year of implementation of the program according to the new methodology, we see inequality of the activity implementation. Failure in reporting (lack of data, and not emphasized that the activity is not performed), incomplete data or activity is not performed is recorded in nine public health institutes.

zavoda za javno zdravlje.

Obim nadzora je opadao poslednjih godina: 2010. godine nadzor nije obavljen u jednom, u 2011. godini u pet a u 2014. u šest okruga. U 2015. godini nije bilo nadzora u tri okruga, podaci su nepotpuni za još tri okruga.

U 2017. godini je izvršeno 1953 nadzora (915 u 2016.) nad 1083 objekata. Broj predloženih mera je povećan u odnosu na prethodne godine, 313 (204 u 2016.).

5. ZAKLJUČCI

Stiče se utisak da je porasla svest o značaju nadzora nad objektima od većeg higijensko epidemiološkog značaja, jer se u pisanim izveštajima i kontaktima sa okružnim institutima i zavodima za javno zdravlje navodi planiranje da se ova aktivnost ponovo obavlja, uvede, ili proširi na veći broj objekata.

Iako postoji duga tradicija rada u praćenju i kontroli vode za piće, sanitacije i higijene i drugih uslova u ovim objektima, neophodno je nastaviti i unapređivati stanje u ovoj oblasti. Kako bi se navedeno ostvarilo, neophodna je međusektorska i multilateralna saradnja i umrežavanje; proaktivna uloga različitih institucija na svim nivoima, naročito lokalnom; davanje prioriteta ovoj oblasti u planovima rada, pokrivajući celokupni ciklus vode; unapređenje baze podataka u oblasti voda, sanitacije i higijene u objektima od većeg higijensko epidemiološkog značaja i razvijanje akcione politike i mera za poboljšanja. Očekuje se da se tako unapredi zdravlje korisnika, osigura kvalitet usluge, prevencija i kontrola infekcija, i ispune preuzete međunarodne obaveze. [20] [21] [22]

The scope of supervision has fallen in recent years: 2010 surveillance was not carried out in one, in 2011 in five and in 2014 in six districts. In 2015 there were no controls in three districts, the data are incomplete for three more districts.

In 2017. 1953 surveillances was carried out over 1083 objects (915 in 2016). The number of proposed measures has increased compared to previous years, 313 (204 in 2016).

5. CONCLUSIONS

The impression is that awareness has been raised about the importance of controlling objects of higher hygienic epidemiological significance. As in written reports and contacts with district institutes and public health institutes it is stated that this activity is to be carried out again, introduced, or expanded to a larger number of facilities.

Although there is a long tradition of work in monitoring and controlling drinking water, sanitation and hygiene and other conditions in these facilities, it is necessary to continue and improve the situation in this area. In order to achieve this, cross-sectoral and multilateral cooperation and networking is necessary; proactive role of various institutions at all levels, in particular local; giving priority to this area in work plans, covering the entire cycle of water; improvement of the database in the field of water, sanitation and hygiene in buildings of higher hygienic epidemiological significance and development of the action policy and measures for improvement. It is expected to improve the health of users, ensure quality of service, prevention and control of infections, and fulfill international obligations. [21] [22]

LITERATURA / LITERATURE

1. Izveštaj o realizaciji aktivnosti iz Programa zaštite stanovništva od zaraznih bolesti za 2016. godinu oblast higijena [citirano 10.08.2018]. Dostupno na: <http://www.batut.org.rs/download/izvestaji/2016IzvestajZarazne.pdf>
2. Izveštaj o zdravstvenoj ispravnosti namirnica i flaširanih voda u Republici Srbiji u 2016. godini [citirano 10.08.2018]. Dostupno na: <http://www.batut.org.rs/download/izvestaji/Godisnji%20izvestaj%20namirnice%20i%20flasirane%20vode%202016.pdf>
3. Izveštaj o zdravstvenoj ispravnosti površinskih voda koje se zahvataju za vodosnabdevanje i koriste za rekreaciju u Republici Srbiji u 2017. godini [citirano 10.08.2018]. Dostupno na: <http://www.batut.org.rs/download/izvestaji/Izvestaj%20površinskih%20voda%202017.pdf>
4. Izveštaj o kvalitetu otpadnih voda i higijensko-sanitarnom stanju deponija na teritoriji Republike Srbije u 2017. godini [citirano 10.08.2018]. Dostupno na: <http://www.batut.org.rs/download/izvestaji/Izvestaj%20otpadne%20vode%202017.pdf>
5. Zakon o zaštiti stanovništva od zaraznih bolesti („Sl.glasnik RS”, br. 15/16)
6. Uredba o Programu zdravstvene zaštite stanovništva od zaraznih bolesti („Sl. glasnik RS”, br. 22/16.)
7. Pravilnik o higijenskoj ispravnosti vode za piće („Sl.list SRJ, br. 42/98)
8. Zakon o sanitarnom nadzoru („Sl.glasnik RS”, br. 125/04)
9. Zakon o zdravstvenoj zaštiti („Sl. glasnik RS”, br. 106/15)
10. Uredba o planu mreže zdravstvenih ustanova (“Sl. glasnik RS”, br. 92/15)
11. Uredba o graničnim vrednostima emisije zagađujućih materija u vode i rokovima za njihovo dostizanje (“Sl. glasnik RS”, br. 67/11, 48/12, 1/16)
12. Zakon o zaštiti životne sredine („Sl. glasnik RS”, br.135/04)
13. Zakon o upravljanju otpadom („Sl.glasnik RS”, br. 14/16)
14. Pravilnik o prevenciji, kontroli i smanjenju bolničkih infekcija („Sl.glasnik RS”, br. 77/15)
15. WHO / UNICEF Joint Monitoring Programme for Water Supply) [citirano 10.08.2018]. Dostupno na: <http://www.unwater.org/>



- publication_categories/whounicef-joint-monitoring-programme-for-water-supply-sanitation-hygiene-jmp/
16. Rapid Assessment of drinking water quality: a handbook for implementation. Geneva: World Health Organisation; 2012 [citirano 10.08.2018]. Dostupno na: https://www.wssinfo.org/fileadmin/user_upload/resources/RADWGHHandbookv1final.pdf
 17. Dragana D. Jovanović, Katarina Ž. Paunović, Oliver Schmoll, Enkhsetseg Shinee, Miljan Rančić, Ivana Ristanović-Ponjavić, the National Expert Group* Rapid assessment of drinking –water quality in rural areas of Serbia: overcoming the knowledge gaps and identifying the prevailing challenges
 18. Public health panorama volume 3 | issue 2 | June 2017 | 141-356 * National Expert Group: Sanja Bijelović, Katarina Spasović, Snežana Gligorijević, Jelka Ranković, Olivera Janjić [18] Uredba o zdravstvenoj zaštiti stanovništva od zaraznih bolesti („Sl. glasnik RS”, br. 29/02)
 19. Pravilnik o uslovima i načinu unutrašnje organizacije zdravstvenih ustanova („Sl. glasnik RS”, br. 43/06., 126/14)
 20. WASH in the 2030 Agenda (WHO and UNICEF, 2017) [citirano 6.08.2018]. Dostupno na: http://www.who.int/water_sanitation_health/monitoring/coverage/wash-post-2015-brochure/en/
 21. The Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE and WHO Regional Office for Europe, 2006) [citirano 8.08.2018]. Dostupno na: <http://www.euro.who.int/en/publications/policy-documents/protocol-on-water-and-health-to-the-1992-convention-on-the-protection-and-use-of-transboundary-watercourses-and-international-lakes>
 22. Declaration of the Sixth Ministerial Conference on Environment and Health (WHO Regional Office for Europe, 2017) [citirano 8.08.2018]. Dostupno na: <http://www.euro.who.int/en/media-centre/events/events/2017/06/sixth-ministerial-conference-on-environment-and-health/documentation/declaration-of-the-sixth-ministerial-conference-on-environment-and-health>
 23. Voda za piće iz javnih vodovoda gradskih naselja u Republici Srbiji-Zdravstveni aspekt, (HEALTH ASPECTS OF DRINKING WATER QUALITY FROM PUBLIC WATER SUPPLY SYSTEMS IN SERBIA), Tanja Knežević, Katarina Spasović, Snežana Dejanović, Uroš Rakić
 24. Tanja KNEŽEVIĆ, Katarina SPASOVIĆ, Snežana DEJANOVIĆ, Uroš RAKIĆ: Voda za piće iz javnih vodovoda gradskih naselja u Republici Srbiji - zdravstveni aspekt (Health aspects of drinking water quality from public water supply systems in Serbia), „Voda i sanitarna tehnika”, br.1/2016.