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Trajanje razgovora kod pogrešno ostvarene veze na telefonskoj centrali 194

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Duration of the phone call in wrong connection to 194 operator

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Sažetak

Uvod. Vreme je suštinski važna kategorija u radu službe hitne medicinske pomoći. Dužina razgovora sa pozivaocem bi trebalo da bude optimalna da bi se donele odgovarajuće odluke. Ako je ostvarena telefonska veza usled pogrešnog telefonskog broja, takav razgovor treba da bude što kraći.

Cilj rada je bio da se pokaže koliko traju razgovori sa pozivaocem za pozive koji su klasifikovani kao pogrešna veza.

Metod. Korišćena je elektronska baza podataka rada na telefonskoj centrali 194/94 iz 2009. godine. Podaci su izvezeni u excel tabelu gde su sortirani i gde je vršeno pretraživanje. Od ukupno 739 742 razgovora, izdvojeno je 93 393 ili 12,62% razgovora koji su klasifikovani kao pogrešno ostvarena veza. Zbog velike varijabilnosti na gornjoj skali vrednosti, izvršeno je skraćivanje baze za 5% najkraćih i najdužih vrednosti. Za obradu, posle skraćenja baze, je ostalo 84 053 poziva. Vreme razgovora je od trenutka kada operater podigne telefonsku slušalicu do trenutka kada se veza sa pozivaocem prekine.

Rezultati. Analizom 84 053 ostvarene pogrešne veze, trajanje razgovora je minimalno šest sekundi, maksimalno 194 sekunde, srednja vrednost 30,28 sekundi.

Diskusija. Broj pogrešnih veza je veliki u službama u svetu koje se bave hitnom pomoći kao što su vatrogasci, policija i hitna medicinska pomoć iako nema podataka o utrošku vremena na ovakve pozive.

Zaključak. Razgovori sa pogrešno ostvarenom vezom predugo traju. U tom smislu, trebalo bi obučavati i operatere i građanstvo.

Ključne reči: hitna medicinska pomoć, Beograd, pozivni centar, upravljanje vremenom

Abstract

Introduction: Time is an essential category in the Emergency Department. The phone call duration, with the person who`s calling, should be optimal in order to make sound decisions. If the phone call is due to a wrong number it should be made as shorter as possible.

Objective: We aimed to show how long the conversations with the caller lasted, for calls that were qualified as having the wrong connection.

Method. We used the electronic phone call database (194/94) for 2009. The data were put in a spreadsheet (Excel table) where they were sorted and researched. Out of the total of 739.742 calls we singled out 93.393, which makes 12.62%, and they were classified as the wrong connection. Due to the great variability in the upper scale of the values we cut the base for 5% of the shortest and longest calls. After the database cut 84.053 calls remained. The phone call duration was measured from the moment the receiver was picked up to the moment the line was disconnected.

Results. Analyzing 84.053 wrong connections we came up with these results: minimal phone call duration was 6 seconds and maximal 194 seconds, with mean value of 30.28 seconds.

Discussion. The number of wrong connections is huge in Emergency Departments all around the world (fire brigades, police, medical emergency) but there are no valid data on the time spent on those calls.

Conclusion. Phone calls with wrong connection last too long. Therefore, operators and callers should be well educated.

Keywords: medical emergency, Belgrade, call center, time management

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Uvod

Upravljane vremenom kao resursom je suštinski važno u radu Gradskog zavoda za Hitnu medicinsku pomoć (GZHMP) i može da se podeli na: vreme čekanja pacijenta da se operater javi od trenutka kada pozove ovu službu, trajanje razgovora sa operaterom, vreme dok dispečer dodeli ekipi prihvaćeni poziv u pomoć, vreme dok ekipa stigne do mesta na kome se traži hitna medicinska pomoć (HMP) i dr. GZHMP Beograd ima ograničene kapacitete u svom radu, kao i broj telefonskih linija na koje odgovara ograničeni broj operatera na telefonskoj centrali, tj. pozivnom centru, broj 94 tada, a 194 sada. U slučaju dužine trajanja razgovora sa pozivaocem na telefonu 94/194, vreme bi trebalo da bude optimalno da bi se donela odluka o prihvatanju ili neprihvatanju poziva u pomoć, odnosno klasifikaciji prihvaćenih poziva u pomoć kao hitnost prvog ili drugog stepena. Lekari i medicinski tehničari koji rade na prijemu poziva (operateri) u aplikaciju u računaru unose sve potrebne podatke o pacijentu, razlogu pozivanja, klasifikaciji hitnosti, kao i da li se radi o pogrešno uspostavljenoj vezi ili uznemiravanju službe HMP, kao i druge podatke koji su korisni u radu HMP. Dok pozivalac čeka na uključenje operatera, mašina ponavlja: ‘’Dobili ste hitnu pomoć, molimo sačekajte’’. Ako se operater odmah uključi, obično izgovori: ‘’Dobili ste hitnu pomoć, izvolite.’’ ili ‘’Hitna pomoć, kažite kakav je problem?’’ itd. Ako pozivalac na to odgovori: ‘’Izvinite, pogrešan broj.’’ ili prekine vezu, operater će kliknuti u masci unosa na polje pogrešna veza. Kada pozivalac želi neku informaciju ili savet koji nije vezan za trenutno pogoršanje zdravlja, operater može da mu odgovori, što bi bilo bespotrebno zauzimanje vremena za moguće prihvatanje hitnih poziva, jer postoji poseban broj za savete. Ovakvi pozivi bi mogli biti obeleženi kao pogrešna veza.

Dešava se i da osoba sa istog broja telefona više puta pozove 94/194 i spusti slušalicu pre nego što razgovara sa operaterom. Započinjanje razgovora neprimerenog sadržaja može da bude i znak namernog uznemiravanja, zavitlavanja HMP. Međutim, pošto ovakvi pozivi mogu da budu ostvareni sa različitim operaterima, teško je jednom operateru da razluči da li je ostvarena veza zbog pogrešnog broja ili namernog uznemiravanja službe HMP[1] iako postoji mogućnost uvida u prethodne razgovore istog pozivaoca. U Holandiji postoji i zakonski propis koji kaže da je zloupotreba pozivanja HMP kriminalna radnja i podleže zakonskom propisu[2]. Takođe, postoje i objašnjenja šta učiniti ako se slučajno pozove HMP[3]. Tako da postoji razlika između pogrešna veza i slučajno pozivanje HMP! Slučajno pozivanje je na primer iz ranca, kada se slučajno aktivira dugme za pozivanje hitne medicinske pomoći.

Ni ovde se ne pominje nepotrebni utrošak vremena službe HMP. U Indiji je broj za odgovor na hitna stanja jedinstven 112, važi i za policiju, vatrogasce i hitnu medicinsku

Introduction

Management of time, as a resource, is of essential importance for the City Department of Emergency Medicine (CDEM). It may be split into: the patient`s waiting time before the operator picks up the phone, phone call duration with the operator, time needed for the dispatcher to assign the team, the time needed for the team to reach the location of the emergency, etc. CDEM Belgrade has got a limited capacity, as well as the limited number of phone lines, and the limited number of operators who work there (the phone number used to be 94 and now is 194). The duration of the phone call with the caller dialing 94/194 should be optimal for the dispatcher to decide on accepting or refusing the help, while classifying the calls according to their priority – first or second emergency level. Doctors and nurses working on these phone lines (operators) enter the data into the computer program. The data contain all the necessary information about the patient, the reason for calling, the classification of the emergency, whether it`s the wrong connection or harassment of the Emergency Department (ED), and also other necessary data of value for the ED. While the caller waits to be connected, the machine keeps repeating: “You have reached Emergency Department, please hold’’. If the operator picks up right away he usually says: “You have reached Emergency Department. How can I help you?’’ or ‘’Emergency Department. What`s your emergency?’’. If the caller answers: ‘’Sorry, wrong number.’’ or disconnects, the operator will enter the data about the wrong connection. If the caller wants information or advice which doesn`t concern his current health emergency, the operator may give advice, which would be considered a waste of time in favor of those in the real emergency, because there is a separate number for giving medical advice. These calls could be marked as the wrong connection.

A recurrent occurrence is that the same person calls 94/194 from the same number several times and hangs up before finally speaking with the operator. Making the phone call with inappropriate content may be a sign of intentional harassment, winding ED personnel. Nonetheless, these sorts of calls could be placed to different operators, and it`ş difficult for a single operator to discern whether the call was due to the wrong number or intentional harassment of the ED[1] , although the operator has the option to access previous calls of the same caller. In Holand, there is a legislature that defines harassment calls to ED a criminal act and the caller may be sanctioned[2]. There are also explanations of what to do if you accidently call ED[3]. So, there is a difference between a wrong connection and accidentally calling ED! An example of accidental calling is if the phone button was accidentally pushed while the phone was in the bag.

Not even here, the unnecessary waste of ED time is being mentioned. In India, emergency number 112 is for all emergency services (police, fire brigade, medical emergen-

pomoć. Tokom korišćenja ovog broja jedan od izazova sa kojim se suočila agencija za bezbednost je broj ''blank'' poziva koji su pristigli. Policija u Delhiju je 2016. godine morala da obustavi probno istraživanje i da ga ponovo pokrene posle perioda od šest meseci u 2017. godini. Pametni telefoni imaju ugrađenu funkciju za povezivanje na 112 ako se dugme pritisne tri puta. Međutim, funkcija koja zahteva od pozivaoca da pritisne broj osam pre nego što poziv dođe do operatera pokazala se kao efikasno rešenje[4].

U članku *Spectrum News 1 Austin*, publikovanom sedmog jula 2021. godine, "Pazite na svoju tehniku: Slučajni 911 pozivi su u porastu'' je objavljeno: ''Komunikacioni centar za hitne slučajeve u severnom Teksasu u Karoltonu prima više poziva hitne pomoći koji na kraju ostaju bez veze"[5]. Vreme koje je utrošeno na ovakve pozive se ne pominje.

Patricia Scofield i saradnici, istražujući psihološko zdravlje operativaca u dispečerskom centru hitne pomoći, dolaze do zaključka da je osoblje u riziku od sagorevanja na radu zbog nedostatka kontrole nad preopterećenjem na poslu, neodgovarajućeg treninga i nedostatkom podrške menadžmenta[6]. Samo je prva grupa operatera GZHMP Beograd prošla obuku za rad na telefonskoj centrali i u početku uvođenja Indeksa u rad. Trebalo bi da se odredi dužina trajanja razgovora operater-pozivalac, "mora da se definiše vrednost sa kojom se mogu porediti rezultati, odnosno u odnosu na koju se može proceniti kvalitet rada. Ta vrednost ne mora uvek da se ostvari, ali je neohodno da joj se teži"[7]. Što je duže vreme razgovora sa pozivaocem, to će ekipa HMP kasnije stići na lice mesta. Dužina trajanja razgovora nije propisana nikakvim aktom GZHMP, pa ni u slučaju pogrešne veze, ali je logično da bi trebalo da bude što kraći. Ako je duže čekanje pozivaoca na telefonsku vezu, ekipa HMP će kasnije stići do životno ugroženog pacijenta. Što je više pogrešnih veza koje opterećuju operatera, duže je vreme čekanja bolesnika da se ostvari veza za HMP.

Kako se svaki operater prijavljuje u sistem sa svojom šifrom, moguće je pratiti broj uznemiravanja i broj pogrešno ostvarenih veza, kao i dužinu razgovora svakog operatera.

Kao uputstvo za rad na telefonskoj centrali 94/194 služi Indeks koji se koristi u norveškoj hitnoj medicinskoj pomoći, kao ''Norveški Indeks urgentnog zbrinjavnja'' i preveden je na naš jezik, i pušten u rad 2006. godine. Samo je prva grupa operatera na početku prošla obuku, dok su kasnije operateri menjani sa drugima koji nisu prošli obuku[9]. Nema istraživanja na temu vremena kod pogrešno ostvarenih veza.

Cilj rada je bio da se pokaže koliko traju razgovori sa pozivaocem za one pozive koji su klasifikovani kao pogrešna veza.

cies). One of the challenges the Safety Agency encountered, when people used the number, was the "blank" calls. The Police Department of Delhi had to stop trial research in 2016 and start anew after six month period in 2017. Smartphones have the implemented option of connecting to 112 if the button is tapped three times. But the option to press 8 before connecting with the operator proved to be an efficient solution[4].

In an article in *Spectrum News 1 Austin*, published July 7th, 2021, named "Look after your gadgets: Accidental 911 calls are on the rise'' was written: ''Communication center for emergencies in North Texas, Carlton receives more emergency calls which eventually disconnect"[5]. Time spent on these calls isn`t mentioned.

Patricia Scofield and al, while researching the psychological health of the operators in ED dispatch centers, found that the personnel was at a higher risk of burnout due to the lack of control over the work overload, inappropriate training, and lack of management support[6]. Only the first group of operators in CDEM Belgrade attended the training for working as an ED operator and at the initiation of the Index into work. The duration of the call between the caller-operator should be established. "The comparing value should be defined to be able to compare results with, or rather the value that will be the benchmark for work quality. This particular value doesn't always need to be reached but it should be something to aspire to"[7]. The longer the call duration, the later the emergency team will reach the destination. The phone call duration is not determined in any of the legal documents of the CDEM, not even in the case of a wrong connection but it`s obvious it should be as short as possible. If the caller`s waiting time to make the connection with the operator is long, ED team will be held back to reach the patient with an emergency. The more wrong connections, which overburden the operator, the longer the waiting time for the patient who wants to reach ED.

Each operator has his own password when logging into the system, so it`s possible to track the number of harassments and wrong connections, as well as the call duration for each operator.

As an instruction for working at the phone dispatch 94/194, we use the Index, which is also used in the Norway ED, "The Norway Index of urgent care''. It was translated into Serbian and used since 2006. Only the first group of operators was trained, while later those who came in their place didn`t go through training[9]. There is no research on time slots with wrong connections.

Our aim was to show how long the phone calls last with the caller who made the wrong connection, as we classified it.

Metod

Korišćena je elektronska baza podataka rada na telefonskoj centrali 194/94 iz 2009. godine. Od ukupno 739 742 razgovora, izdvojeno je 93 393 razgovora koji su klasifikovani od strane operatera kao pogrešna veza ili 12,62%. Podaci su izvezeni u excel tabelu gde su sortirani i gde je vršeno pretraživanje. Izdvojeni su samo pogrešna veza sa oznakom hitnosti 3, jer ima i onih koji su kvalifikovani kao uznemiravanje, ali su označeni kao hitno jedan ili hitno dva, što je nenamerna greška. Zbog velike varijabilnosti na gornjoj skali vrednosti, izvršeno je skraćivanje baze za 5% najkraćih i najdužih vrednosti u sekundama. Za obradu je ostalo 84 053 poziva. Vreme razgovora je vreme od trenutka kada operater podigne telefonsku slušalicu do trenutka kada se prekine veza sa pozivaocem.

Rezultati

Ukupno 84 053 telefonskih poziva koji su obeleženi kao pogrešno ostvarene telefonske veze, čini 230 ostvarenih veza u proseku svakoga dana. Izraženo u satima, to je 705,11 sati razgovora godišnje, odnosno 1,93 sati svakog dana, tj. 9,6 ostvarenih veza po satu, što je u stvari puno više jer su najduže i najkraće vrednosti isključene iz istraživanja.

Method

We used the electronic phone call database (194/94) for 2009. Out of the total of 739.742 calls we singled out 93.393, which makes 12.62%, and they were classified by the operator as the wrong connection. The data were put in a spreadsheet (Excel table) where they were sorted and researched. We singled out only those marked as the wrong connection, emergency level 3 because there were those qualified as harassment but marked as emergency level 1 or 2, which is an unintentional mistake. Due to the great variability in the upper scale of the values we cut the base for 5% of the shortest and longest calls measured in seconds. There were 84.053 calls left to process. The phone call duration was measured from the moment the operator picked up the phone to the moment the line was disconnected.

Results

There were 84.053 phone calls marked as wrong connections, which makes an average of 230 wrong connections a day. Expressed in hours, it is 705.11 hours of talk a year or 1.93 hours a day or 9.6 phone calls per hour, which in reality is even more because we singled out the longest and the shortest values from our research.

Tabela 1. Trajanje razgovora kod pogrešno ostvarene veze na telefonskoj centrali 94/194
Tabel 1. *Call duration of the wrong connection on 94/194 number*

Vreme razgovora u sek. *Call duration in sec.*	broj *N*	%
Od šest do 15/ From 6 to 15	42 465	50,52
Do 30 / to 30	20 216	24,05
Do 60 / to 60	9 893	11,77
Do 120 / to 120	7 555	8,99
Do 180 / to 180	3 386	4,03
Do 196 / to 196	538	0,64
zbir / total	84 053	100

min. 6 sekundi, max. 194 sekundi; srednja vrednost 30,28 sekundi
min. 6 seconds, max. 194 seconds; average 30.28 seconds

Trajanje razgovora kod pogrešno ostvarene veze u sekundama ***Call duration of the wrong connection in seconds***		**Ostvarene veze** ***Placed calls***	**%**
6–15		42 465	50,52%
16– 30		20 216	24,05%
31–60		9 893	11,77%
61–120		7 555	8,99%
121–180		3 386	4,03%
181–196		538	0,64%
	zbir/*total*	84 053	100,00%

Diskusija

Minimalno trajanje razgovora je šest sekundi, najviše 196 sekundi, srednja vrednost razgovora je 30,28 sekundi, 49,48% naših pogrešnih veza ima trajanje razgovora duže od 15 sekundi, a 4,67% pogrešnih veza traje duže od 120 sekundi.

U istraživanju Ellensen EN, Hunskaar S, Wisborg T, Zakariassen E, od 3 294 poziva, ukupno pogrešno ostvarenih veza je bilo 237, tj. 7,19% što je ipak manje nego u našem istraživanju[10].

U istraživanju Živanović M, srednja vrednost trajanja razgovora za prihvaćene pozive u pomoć klasifikovane kao prvi red hitnosti je jedan minut i 58 sekundi. Srednja vrednost trajanja razgovora za pozive drugog reda hitnosti je dva minuta i 27 sekundi[7]. U našem istraživanju srednja vrednost od 30,28 sekundi je ipak kraća od srednje vrednosti prihvaćenih poziva za drugi red hitnosti, mada, iz ličnog iskustva, u najvećem broju slučajeva 15 sekundi je više nego dovoljno da se utvrdi da je u pitanju pogrešno ostvarena veza.

Jedan deo razgovora traje suviše dugo, moguće zato što operater daje neko medicinsko obaveštenje pozivaocu što ne bi trebalo, jer produžava vreme čekanja ozbiljnih bolesnika na vezu sa HMP[8]. Postoji poseban telefonski broj za davanje obaveštenja građanima, a vreme čekanja da se operater javi nije zanemarljivo i može da bude i do 4 minute i 22 sekunde[8].

U Indiji od 15 672 prihvaćenih poziva na hitnom broju u jednom danu, 10 288 je bilo ‘’blank’’[4]. Ni ovde se ne pominje vreme razgovora i opterećenje osoblja, a vreme koje je nepotrebno utrošeno je verovatno ogromno.

U izraelskom Nacionalnom centru za Hitnu medicinsku pomoć tokom 2012–2016. godine, nakon uvođenja specijalne tehnologije praćenja, učestalost poziva uznemiravanja je značajno opala sa 10,9% na 2,9%, a region Jerusalima sa 26,5% na 2,0%[11]. Problem mora da se rešava boljom obukom osoblja na telefonskoj centrali, propisivanjem standarda za vremensko trajanje razgovora operater-pozivalac u saradnji sa Ministarstvom zdravlja, telefonskim provajderima, na tehničkom onemogućavanju ovakvih poziva kao na primer u Izraelu.

Zaključak

Razgovori sa pozivaocem u slučaju pogrešne veze predugo traju. Upravljanje vremenom bi trebalo ba bude bolje. Treba obučavati i operatere i građanstvo o važnosti ovog resursa.

Discussion

The minimal call duration was 6 seconds and the maximal 196 seconds, with an average value of 30.28 seconds. 49.48% of our wrong connections lasted longer than 15 seconds, and 4.67% lasted longer than 120 seconds.

In the research of Ellensen EN, Hunskaar S, Wisborg T, and Zakariassen E, out of the total of 3.294 calls, there were 237 wrong connections, which make 7,19%, and it is less than in our research[10].

In the research of Zivanović M, the mean value of the duration of accepted phone calls, classified as the first level of emergency, was 1 minute 58 seconds. The mean value for the duration of the calls for the emergency 2 level was 2 minutes 27 seconds[7]. In our research, the mean value was 30.28 seconds and it was shorter than the mean value of the call duration of level 2 emergency calls. Although, from personal experience, in the majority of cases, 15 seconds is more than enough to establish whether it`s the wrong connection.

One part of the conversation lasts too long, possibly due to an operator giving some medical information to a caller, which he shouldn`t be doing because that way he prolongs the waiting time for the severely ill patients who are trying to reach ED[8]. There is a separate phone number for those who seek medical advice and the waiting time to reach the operator on this number is not short and it may be up to 4 minutes 22 seconds[8].

In India, out of 15.672 accepted calls at an emergency number, in one day, 10.288 were ‘’blank’’[4]. Not even here, the call duration and personnel load were mentioned. The waste of time was probably long.

In the Israeli National Center for Emergency Medicine, during 2012–2016, after special surveillance technology was implemented, the incidence of harassment calls dropped significantly from 10.9% to 2.9%, and in the region of Jerusalem from 26.5% to 2.0%[11]. The problem must be solved with better training of the personnel working on the phone lines, setting standards for time duration slots for the calls between caller and operator, with the help of the Ministry of health and phone call providers, who could provide technical support to disable these calls, as was the case in Israel.

Conclusion

The phone calls, in the case of a wrong connection, last too long. Time management should be much better. The operators need to be trained as well as the citizens on the importance of this resource.

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