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CODEN ZDVAFY • UDK 613 / 614 + 628 • ISSN 0351 - 0026



IVZ RS

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Zdravstveno varstvo - Slovenian Journal of Public Health, Trubarjeva 2, 1000 Ljubljana, p.p. 260,
tel.: 01 5205 784, faks: 01 244 15 17

Elektronski naslov uredništva/E-mail Address:

Zdrav.Var@ivz-rs.si

Domača stran na internetu/Internet Home Page:

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Transakcijski račun/Current Account:

01100-6030926242, UJP

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Naklada: 500

Likovna oprema ovitka: Jurij Kocbek

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COMPLEMENTARY MEDICINE: EVIDENCE VERSUS EXPERIENCE?

Edzard Ernst¹

Complementary medicine (CM) has become important, not least because a large proportion of patients try it (often without telling their doctor), the media promote it, yet few people seem to understand it. In the following article I will try to highlight some of those aspects of CM which, I feel, are currently plagued by confusion, lack of transparency and sometimes even wilful deceit.

Experience

The long history of some forms of CM means that they have been "field-tested" in millions of patients. Surely this collective experience weighs heavy and, some insist, must outweigh the evidence from clinical trials which are usually only short-term, and comprise far less people. While this line of argument convinces many CM enthusiasts, it is wholly unconvincing to anyone capable of critical analysis. There are numerous reasons why experience can turn out to be a cumbersome method of reaching the wrong conclusions. There are also many examples where experience has misled our forefathers. Take blood letting, for instance: it was used for hundreds of years in all medical cultures for most medical conditions. Doctors were so impressed by its powers that, when trial data demonstrated its lack of effectiveness, they believed their experience and disbelieved the evidence.

In CM, the supremacy of experience over evidence is still fairly obvious. We have shown, for instance, that authors of CM books seem to recommend almost any treatment for any condition (1): 120 CAM modalities for addiction, 131 for arthritis, 119 for asthma, 133 for cancer. But the climate is, I hope, slowly changing. More and more CM experts now recognize experience for what it is: a good method for formulating hypotheses but a very poor method for testing them.

Evidence - negative or positive?

It has always puzzled me how anyone could be for or against something like a medical intervention. Does it make sense to be for or against appendectomy or anticoagulants? I don't think so! Why then do people hold emotional views on CM?

In matters of healthcare, likes and dislikes should matter far less than evidence. Healthcare should not be a

fashion where one might legitimately hold this or that opinion, nor must it be confused with religion in which one either believes or doesn't. Medical treatments either demonstrably and reproducibly work or they don't. Therefore reliable evidence on what is effective and safe must always be "good" - to view a trial of spiritual healing, homeopathy etc which fails to show that the tested intervention works (e.g. is better than placebo) as "negative" does simply not make sense.

Examples include the recent (first ever) trial of shark cartilage for cancer (2). Its results showed that it has no beneficial effects. Surely this must be good news all around. Sharks will not die needlessly, cancer patients will not attach false hopes to a bogus treatment, money can be directed towards effective treatments. The only people who could possibly perceive this finding as "negative" are those involved in peddling bogus cancer cures and swindling desperate patients and their families of their savings. Neither researcher nor clinicians should be in the service of snake oil traders.

Whenever we demonstrate that CM does work, the situation usually reverses. Examples for this scenario can also be found easily. Compelling evidence now suggests that real acupuncture is better than sham acupuncture for a range of pain-related syndromes, e.g. back pain (3). If the findings are based on good science, this must be good news: it could help millions who suffer from back pain, particularly as conventional medicine is not very successful in dealing with this problem. Many systematic reviews of rigorous clinical trials are available today demonstrating that certain CM approaches are efficacious for certain indications. Table 1 summarizes our endeavour to evaluate the existing trial data (1). It suggests that, for many CM methods, we now have compelling evidence that they are effective for specific conditions. Making more general use of these options could benefit many patients - provided that the risks of these remedies do not outweigh the benefit.

Finding the evidence (arguably this is what science should be about) is always a good thing, particularly in medicine. As long as the results are reliable, they can only further our knowledge and will eventually improve healthcare. Sound evidence is always positive.

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Table 1. *List of conditions for which CM methods are effective.*

Condition	Intervention
AIDS/HIV (palliation)	Stress management
AIDS/HIV	Exercise (symptomatic)
Alzheimer's disease	Ginkgo
Anxiety	Kava
Anxiety	Massage
Anxiety	Music Therapy
Anxiety	Relaxation
Benign prostatic hyperplasia	African plum
Condition	Intervention
Benign prostatic hyperplasia	Saw palmetto
Cancer prevention	Allium vegetables
Cancer prevention	Green tea
Cancer prevention	Tomato (lycopene)
Cancer prevention	Exercise
Cancer prevention	Aromatherapy/massage
Cancer prevention	Exercise
Chronic fatigue syndrome	Exercise
Condition	Intervention
Chronic heart failure	Hawthorn
Chronic venous insufficiency	Horse Chestnut
Constipation	Psyllium
Depression	Exercise
Depression	St. John's Wort
Diabetes	Guar gum
Diabetes	Psyllium
Erectile dysfunction	Yohimbine
Condition	Intervention
Hypercholesterolemia	Guar gum
Hypercholesterolemia	Oat
Hypercholesterolemia	Soy
Hypertension	Biofeedback
Hypertension	Co-enzyme Q10
Insomnia	Relaxation
Insomnia	Melatonin
Irritable bowel syndrome	Fibre
Condition	Intervention
Labor Pain	Hypnosis
Labor Pain	Water immersion
Menopause	Red Clover
Migraine	Biofeedback
Nausea and vomiting (<i>induced by chemotherapy</i>)	Acupoint stimulation
Nausea and vomiting (<i>induced by chemotherapy</i>)	Relaxation
Non-ulcer dyspepsia	Peppermint and caraway
Condition	Intervention
Osteoarthritis	Acupuncture
Osteoarthritis	Phytodolor
Osteoarthritis	Chondroitin
Osteoarthritis	Glucosamine
Osteoarthritis	S-adenosylmethionine
Overweight/obesity	Ephedra sinica
Peripheral arterial occlusive disease	Ginkgo
Peripheral arterial occlusive disease	Padma 28
Condition	Intervention
Rheumatoid arthritis	Diet
Rheumatoid arthritis	Phytodolor
Smoking cessation	Group behaviour therapy
Upper respiratory tract infection	Vitamin C (treatment not prevention)

Legend

This list is based on a review of the existing evidence. Only condition/intervention combinations are listed for which the amount, quality and quantity of evidence was sufficient and the direction of the evidence was clearly in favour of the intervention. Data extracted from reference 1.

Poor Science

In CM, many researchers seem to use science to prove that what they already believe is correct. Yet science is not for proving but for testing. The former approach does not only reveal an unprofessional attitude, it is prone to seriously mislead us all. Emotions and strong beliefs can lead to bias (4), and bias leads to bad science.

Sadly poor science is rife in CM. Here I could cite hundreds of examples. A recent study of anthroposophy (5) may suffice. Its aim was “to compare anthroposophic treatment to conventional treatment”. Patients elected to consult either an anthroposophic or a conventional doctor. The results of this study showed more favourable outcomes for the former approach. The authors concluded that “anthroposophic treatment... is safe and at least as effective as conventional treatment”. Because of numerous sources of bias and confounding, many other conclusions are just as likely (e.g. patients who elect to see an anthroposophic doctor differ in many ways from patients who consult a conventional physician).

This example highlights much of what frequently is wrong with CM and CM research. It typifies how the aims of a study can be mismatched with the

methodology and how the results may not justify the conclusions. If I had to name the characteristic that I find most disturbing in published CM research it would be this frequent inconsistency. Wishful thinking is, of course, only human. But the regularity of this incongruence in CM is nevertheless most remarkable. What follows is, I believe, more than obvious: poor science is bad - not because some ‘out-of-touch’ scientists in the ‘ivory towers’ think so - it is bad because it leads to wrong decisions in healthcare. Ultimately this will be detrimental to those who we should care for most: our patients.

Double Standards

In CM, double standards seem to be everywhere. They are typified, I fear, in the new and increasingly popular movement (its proponents would probably say ‘philosophy’) of ‘integrated medicine’! Its two basic tenets are that

- a) integrated medicine cares for the individual as a whole rather than looking at a diagnostic label and
- b) integrated medicine uses “the best of both worlds”(6). Both claims look superficially convincing and plausible; at closer inspection they are, however, neither. (7) Caring

Table 2. Selected statements from a recent (government-sponsored) patient guide.*

Statement (quote) **	Evidence ***
.. the risk of a stroke (after upper spinal manipulation) is between 1 and 3 in 1 million manipulations.	There are many published estimates that suggest much higher incidence figures. However, due to extreme under-reporting, the risk remains undefined.
Acupuncture is being increasingly used for people trying to overcome addictions...	A Cochrane review fails to demonstrate efficacy of acupuncture for this indication
Craniosacral therapists treat a wide range of conditions from acute to chronic health problems...	There is no trial evidence at all to suggest that craniosacral therapy is effective
Healing is used for a wide range of ... conditions. Research has shown benefit in many areas, including healing of wounds, ... migraine or irritable bowel syndrome...”	The best evidence available to date fails to demonstrate effects beyond a placebo response
“Homoeopathy is most often used to treat chronic conditions such as asthma”	A Cochrane review fails to demonstrate efficacy of homoeopathy for asthma

* Its aim was to “give (you) enough information to help you choose a complementary therapy that is right for you”

** The guide does not contain anything else by way of evidence on effectiveness (but was commissioned by the DoH to provide such evidence)

*** Evidence extracted from reference 3

for the whole individual has always been and will always be a hallmark of *any* good medicine. (8) It is thus not legitimate to adopt it as a main characteristic that differentiates 'integrated medicine' from conventional healthcare - on the contrary, conventional healthcare professionals who work towards optimising patient care must feel insulted by it. Using "the best of both worlds" (i.e. CM and mainstream healthcare) sounds fine until one realises how crucially it hinges on the definition of "best". In modern healthcare, this term can only describe those treatments that reproducibly do more good than harm. But this is precisely what evidence based medicine (EBM) is all about. Either 'integrated medicine' is synonymous with EBM (in which case the term would be redundant) or it applies a different standard for the term "best".

Considering what 'integrative medicine' in the UK currently promotes (Table 2), one has to conclude that the latter applies. This discloses integrative medicine as an elaborate smoke screen for adopting unproven treatments into routine healthcare (10). In the long run, this strategy can only turn out to be detrimental to everybody, including patients and even CM itself.

Conclusion

At present, CM seems to be in transition from an experience-based activity to an evidence-based area of healthcare. Only if CM applies the same standards as

the rest of medicine does, will we be able to see its true value. And only then can we be sure that CM does more good than harm to those who count most: our patients.

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KOMPLEMENTARNA MEDICINA: DOKAZI PROTI IZKUŠNJAM?

Edzard Ernst¹

Uvodnik

Komplementarna medicina (KM) se je uveljavila tudi zato, ker se k njej zateka veliko število bolnikov (mnogi od njih, ne da bi o tem obvestili svojega zdravnika) in ker jo priporočajo množična občila, čeprav jo razumejo le redki. V članku bom skušal osvetliti predvsem tiste vidike KM, ki so po mojem mnenju zaradi zmede na tem področju, nepreglednosti in celo namernega zavajanja, še zlasti na udaru.

Izkušnje

Dolga zgodovina nekaterih oblik KM kaže, da so bile preizkušene v praksi na milijonih bolnikov. Ta kolektivna izkušnja ima seveda precejšnjo težo, po prepričanju nekaterih mnogo večjo kot dokazi, pridobljeni s kliničnimi raziskavami. V te je zajetih precej manj ljudi in ponujajo le kratkoročne izsledke.

Za mnoge zagovornike KM je to prepričljiv dokaz, ki pa ni sprejemljiv za vse, ki so sposobni kritične presoje. Številni razlogi govore za to, da je sklepanje, ki temelji zgolj na osnovi izkušenj, lahko zmotno. To se je izkazalo že večkrat v preteklosti. Takšen primer je puščanje krvi, ki so ga stoletja uporabljali v vseh kulturnih okoljih za zdravljenje večine bolezni. Zdravniki so bili tako navdušeni nad učinki tega zdravljenja, da so raje verjeli svojim izkušnjam kot dokazom tudi potem, ko so s poskusi dokazali njegovo neučinkovitost.

Na področju KM izkušnje očitno še vedno nadvladajo dokaze. Pisari knjig o KM priporočajo skoraj vse načine zdravljenja za vse bolezni (1): 120 oblik KM za zasvojenost, 131 za artritis, 119 za astmo in 133 za raka. Kljub temu pa upam, da se bo stanje počasi spremenilo. Vedno več zdravilcev priznava, da so izkušnje koristne za postavljanje hipotez, a slabe za njihovo preverjanje.

So izkušnje negativne ali pozitivne?

Vedno sem se čudil temu, da se nekdo lahko zavzema za nek medicinski poseg ali je proti posegu. Je smiselno, da nekdo zagovarja oz. nasprotuje odstranitvi slepiča ali zdravilom proti strjevanju krvi? Mislim, da ne! Zakaj imajo potem ljudje čustven odnos do KM?

Na področju zdravstva mora imeti nagnjenje oziroma odpor do nečesa mnogo manjšo težo kot dokazi. Zdravstveno varstvo ni moda, kjer je dovoljen različen

okus, pa tudi ne vera, kjer eni verujejo, drugi pa ne. Bistvo učinkovitosti zdravljenja je dokazljivosti in ponovljivosti, zato so zanesljivi dokazi o tem, da je zdravljenje učinkovito in varno, vedno lahko le "pozitivni. Označiti raziskave duhovnega zdravljenja, homeopatije in drugih metod, za katere ni dokazov, da res delujejo (da so bolj učinkovite kot placebo), kot "negativne," je nesmisel.

Eden takšnih primerov je tudi nedavna študija o uporabi hrustanca morskega psa pri bolnikih z rakom (2), ki ni pokazala prav nobenih ugodnih učinkov. To je za marsikoga zelo dobra novica: morski psi ne bodo po nepotrebnem umirali, bolniki z rakom se ne bodo več z lažnim upanjem oprijemali tega zdravljenja in denar bo tako lahko namenjen drugim, učinkovitim oblikam zdravljenja. Edini, ki te ugotovitve lahko sprejmejo kot negativne, so tisti, ki se ukvarjajo z lažnim zdravljenjem raka in ki obupane bolnike in njihove svojce goljufajo za njihove prihranke. Noben znanstvenik in noben zdravnik ne more zagovarjati prodajalcev kačjega olja. Kadar koli dokažemo, da je KM učinkovita, se stanje običajno obrne. Tudi primerov za ta scenarij ni težko najti. Danes imamo prepričljive dokaze o tem, da je pri velikem številu bolečinskih sindromov, npr. pri bolečinah v križu, prava akupunktura bolj učinkovita od "akupunktore" (3). V primeru, da so do teh ugotovitev prišli po znanstveni poti, je to prav gotovo dobra novica.

Tako bi lahko pomagali milijonom ljudi z bolečinami v hrbtenici, še zlasti zato, ker se uradna medicina v tem primeru ni izkazala kot zelo uspešna.

Izsledki sistematičnih analiz kliničnih študij kažejo, da so nekatere metode KM učinkovite pri določenih boleznih.

Tabela 1 predstavlja povzetek naših prizadevanj, da bi ocenili podatke iz študij, ki so na voljo (1). Imamo prepričljive dokaze, da so mnoge oblike KM učinkovite pri določenih boleznih. S širšo uporabo teh načinov zdravljenja bi lahko pomagali mnogim bolnikom pod pogojem, da tveganje ni večje od koristi, ki jih prinašajo. Vedno si želimo najti dokaze, še zlasti na področju medicine, saj je to bistvo znanosti. Če so dokazi zanesljivi, lahko prispevajo k boljšemu znanju in bolj kakovostnemu zdravljenju. Zanesljiv dokaz je namreč vedno pozitiven.

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Tabela 1. Seznam bolezni, ki jih uspešno zdravijo z KM.

Bolezen	Zdravljenje
AIDS/HIV (paliativno)	obvladovanje stresa
AIDS/HIV	telesna dejavnost (simptomatsko)
Alzheimerjeva bolezen	ginkgo
anksioznost	kava
anksioznost	masaža
anksioznost	glasbena terapija
benigna hiperplazija prostate	afriška sliva
benigna hiperplazija prostate	Serenoa repans
preprečevanje raka	čebulnice
preprečevanje raka	zeleni čaj
preprečevanje raka	paradižnik (likopen)
preprečevanje raka	telesna dejavnost
preprečevanje raka	aromaterapija/masaža
sindrom kronične utrujenosti	telesna dejavnost
kronična srčna odpoved	glog
kronična venska insuficienca	divji kostanj
zaprtje	luske trpotca (Plantago ovata)
depresija	telesna dejavnost
depresija	šentjanževka
sladkorna bolezen	guar
sladkorna bolezen	luske trpotca(Plantago ovata)
erektilna disfunkcija	johimbin (alkaloid)
hiperholesterolemija	oves
hiperholesterolemija	soja
zvišan krvni tlak	biofeedback
zvišan krvni tlak	koencim Q10
nespečnost	sproščanje
nespečnost	melatonin
sindrom razdražljivega kolona	vlaknine
porodne bolečine	hipnoza
porodne bolečine	porod v vodi
menopavza	rdeča detelja
migrena	biofeedback
slabost in bruhanje (zaradi kemoterapije)	akupunktura
slabost in bruhanje (zaradi kemoterapije)	sproščanje
dispepsija brez ulkusa	pepermint in kumina
osteoartritis	akupunktura
osteoartritis	Phytodolor
osteoartritis	glukozamin
osteoartritis	S-andenosilmetonin
debelost	efedra
periferna okluzivna bolezen arterij	gingko
periferna okluzivna bolezen arterij	Padma 28
revmatični artritis	dieta
revmatični artritis	Phytodolor
odvajanje od kajenja	skupinska terapija

Legenda

Ta seznam temelji na pregledu razpoložljivih dokazov. Obsega le tiste bolezni in tiste vrste zdravljenja, pri katerih obstaja dovolj veliko število kakovostnih dokazov, ki govore v prid tem načinom zdravljenja.

Slabo znanstveno delo

Zdi se, da mnogi raziskovalci KM uporabljajo znanost le za dokazovanje pravilnosti nečesa, o čemer so že prepričani, da je pravilno. Bistvo znanstvenega dela pa ni dokazovanje, temveč testiranje. Ta pristop ne zrcali le neprofesionalnosti raziskovalcev, temveč je tudi zavajajoče. Čustven odnos in vnaprejšnje prepričanje lahko vodita v pristranost (4), posledica tega pa je slabo znanstveno delo.

Na žalost, pa je takšna znanost stalnica KM. S tem v zvezi bi lahko našli na stotine primerov, a dovolj je, če omenimo nedavno raziskavo o antropozofiji (5), v kateri so "primerjali antropozofsko in klasično zdravljenje". Bolniki so se odločali med antropozofskim in klasičnim zdravnikom. Raziskava je pokazala ugodnejše izide zdravljenja pri antropozofskem pristopu. Avtorji raziskave so prišli do zaključka, da je "antropozofsko zdravljenje varno in vsaj tako učinkovito kot standardni način zdravljenja". Zaradi številnih dejavnikov, ki vodijo v zmoto in pristranost, so možni tudi drugačni zaključki. Tako se npr. tisti bolniki, ki se odločijo za antropozofskega zdravnika, v mnogih pogledih razlikujejo od tistih, ki obiščejo klasičnega zdravnika.

Ta primer osvetljuje pogoste zmote KM in napake raziskav na tem področju. Metodologija pogosto ni prilagojena ciljem in rezultati ne podpirajo vedno

zaključkov. Pogostna značilnost, ki me najbolj moti pri objavljenih raziskavah KM, je nedoslednost. V človeški naravi je, da vidimo tisto, kar si želimo videti, kljub temu pa je treba poudariti, da je neskladnost, ki jo redno srečujemo na področju KM, prav velikanska.

Menim, da je več kot očitno, da je pomanjkljiva znanost slaba, ne le zato, ker tako menijo znanstveniki v "slonokoščenih stolpih", oddaljeni od resničnosti, temveč zato, ker vodi do napačnih odločitev na področju zdravstva. Vse to pa gre na škodo tistih, za katere bi morali najbolj poskrbeti - na škodo naših bolnikov.

Dvojna merila

Zdi se, da so dvojna merila prisotna povsod na področju KM. Bojim se, da so značilna za novo in vedno bolj popularno gibanje (zagovorniki bi ga verjetno označili kot "filozofijo") - integrirano medicino! Ta pa temelji na dveh bistvenih načelih:

- ukvarja se s posameznikom kot s celoto in ne upošteva le nalepke z diagnozo;
- uporablja "kar je najboljšega od obeh vrst zdravljenja" (6).

Na prvi pogled se zdita zgornji trditvi verjetni in prepričljivi, če pa ju pogledamo poglobljeno nista ne eno ne drugo (7). Skrb za posameznika kot celoto in bo ostala zaščitni znak kakovostne medicine (8). Zato ni pošteno trditi, da je prav to značilnost, po kateri se integrirana

Tabela 2. Izjave, izbrane iz priročnika za bolnike, ki je izšel nedavno pod pokroviteljstvom vlade.*

Izjava **	Dokaz ***
...tveganje za kap (po manipulaciji hrbtenice) je 1-3 na milijon manipulacij	Objavljenih je bilo več ocen, ki navajajo precej večje številk. Zaradi pomanjkljivega poročanja pa tveganje ni opredeljeno.
Akupunkturo vse več uporabljajo za premagovanje odvisnosti.	Cochranovo poročilo ni dokazalo učinkovitosti akupunkture pri premagovanju odvisnosti.
Strokovnjaki za kraniosakralno terapijo zdravijo najrazličnejše bolezni, od akutnih do kroničnih.	Ni dokazov, ki bi potrjevali učinkovitost kraniosakralne terapije.
Alternativno terapijo (healing) uporabljajo pri vrsti bolezni. Raziskave so pokazale njegove koristi na mnogih področjih, za celjenje ran, pri migreni in sindromu razdražljivega kolona.	Do danes še niso dokazali, da bi imelo to zdravljenje boljše učinke kot placebo.
Homeopatijo pogosto uporabljajo za zdravljenje kroničnih bolezni, kot je npr. astma.	Cochrainovo poročilo ne navaja dokazov za učinkovitost homeopatije pri bolnikih z astmo.

*Priročnik za bolnike navaja, da je njegov cilj "navesti dovolj podatkov, ki bi bili v pomoč pri izbiri ustreznega komplementarnega zdravljenja"

**Priročnik ne vsebuje dokazil o učinkovitosti terapij, čeprav je Ministrstvo za zdravje naročilo, naj bodo vključeni

***Dokazi iz reference št. 3.

medicina razlikuje od klasične. Strokovnjaki s področja uradne medicine, ki si prizadevajo za čim višjo raven zdravstvenega varstva bolnikov, so lahko upravičeno užaljeni. Trditev, da je najbolje uporabljati to, "kar je najboljše pri obeh vrstah zdravljenja" (pri KM in pri uradni medicini) zveni smiselno, dokler se ne zavemo, da je njeno bistvo definicija "najboljšega". V modernem zdravstvu lahko s tem izrazom opišemo le tiste vrste zdravljenja, za katere je dokazano, da ima od njih bolnik več koristi kot škode. In prav za to gre pri medicini, podprti z dokazi. Sta le dve možnosti: ali pomeni "integrirana medicina" isto kot medicina, podprta z dokazi (v tem primeru je drugačno poimenovanje povsem odveč), ali pa zanjo veljajo drugačna merila za to, kaj je "najboljše".

Če vidimo, kaj danes zagovarja integrirana medicina v Veliki Britaniji (9) (tabela 2), moramo ugotoviti, da velja zadnja trditev. Integrirana medicina je le dimna zavesa za uvajanje nepreverjenih načinov zdravljenja v rutinske zdravstvene programe (10). Na daljši rok se lahko izkaže, da je ta strategija pogubna za vse, tako za bolnike kot tudi za KM samo.

Zaključek

Zdi se, da danes KM prehaja iz dejavnosti, temelječe na izkušnjah, v zdravstveno dejavnost, podprto za dokazi. Pravo vrednost KM bomo lahko spoznali le, če bo začela pri tem uporabljati enaka merila kot ostala

področja medicine. Le tako nas bo prepričala, da lahko ponudi bolnikom, ki so za nas najpomembnejši, več dobrega kot slabega.

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SELECTED INDICATORS OF HEALTH CARE RESOURCES, AND HEALTH CARE UTILIZATION AND COSTS IN COUNTRIES OF THE “PUBLIC HEALTH IN SOUTH EASTERN EUROPE (PH-SEE)” NETWORK PRIMERJAVA IZBRANIH KAZALCEV ZMOGLJIVOSTI TER PORABE IN STROŠKOV ZDRAVSTVENEGA VARSTVA MED DRŽAVAMI, SODELUJOČIMI V MREŽI “JAVNO ZDRAVJE V JUGOVZHODNI EVROPI (PH-SEE)”

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Prispelo: 3. 6. 2005 - Sprejeto: 25. 10. 2005

Original scientific article
UDC 614(4-12)

Abstract

Background: The Public Health Collaboration in the South Eastern Europe (PH-SEE) network, including ten countries, was established under the aegis of the Stability Pact. Within the network a strong need was identified for monitoring several health and health care issues, including health care resources (HCR) and health care utilization and costs (HCUC).

Aim/Purpose: To assess the current situation and trends in the PH-SEE countries in the field of HCR and HCUC during the period 1994 - 2003.

Methods: The number of hospital beds, physicians, general practitioners, and dentists per 100,000 population, average length of hospital stay and total health expenditure as the percent of the gross domestic product were determined. A meta-database was established for the period 1994 - 2003. The ratios of indicator values of the PH-SEE countries to the EU average at the beginning and at the end of the observation period were calculated, as well as the differences between the initial and final values.

Results: During the study period, the most notable change occurred in the ratios of the PH-SEE countries values to the EU average: i.e. in the hospital bed number in Moldova (beginning: 1.78, end: 0.96); in number of physicians in Moldova (beginning: 1.12, end: 0.76), in number of general practitioners in Moldova (beginning: 0.34, end: 0.56), in number of dentists in Moldova (beginning: 0.76, end: 0.50), in average length of hospital stay in Serbia&Montenegro (beginning: 1.07, end: 1.37), and in total health expenditure in Moldova (beginning: 0.73, end: 0.40).

Conclusion: Considerable differences in HCR and HCUC were found between the PH-SEE countries. Some of these countries (e.g. Croatia, Greece and Slovenia) are in many respects close to the EU average, while the others (e.g. Albania) are faced with the problem of low economic power. The most stable PH-SEE country during the study period was Slovenia, while Moldova experienced the most rapid changes.

Key words: public health, South Eastern Europe, health indicators, health care resources, health care utilization, health care costs

Izvirni znanstveni članek
UDK 614(4-12)

Izveček

Izhodišče: Pod okriljem Pakta za stabilnost je nastala mreža “Javno zdravje v Jugovzhodni Evropi (PH-SEE)”, v kateri sodeluje deset držav. Med njimi se je pokazala potreba po stalnem sledenju pojavov, povezanih z zdravjem prebivalcev, med drugim tudi na področju zmogljivosti ter porabe in stroškov zdravstvenega varstva (ZV).

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Namen: Oceniti sedanje stanje in gibanje kazalcev na področju zmogljivosti ter porabe in stroškov ZV v državah PH-SEE v obdobju 1994-2003.

Metode: Za oceno so bili izbrani naslednji kazalci: število bolnišničnih postelj, zdravnikov, zdravnikov splošne prakse in zobozdravnikov na 100.000 prebivalcev, povprečno trajanje hospitalizacije ter odstotek bruto domačega proizvoda (BDP), ki se namenja za zdravje. Za obdobje 1994-2003 je bila vzpostavljena meta baza podatkov. Izračunali smo razmerja med vrednostmi kazalcev v državah PH-SEE v primerjavi s povprečjem EU na začetku in na koncu opazovalnega obdobja ter razliko med njihovimi začetnimi in končnimi vrednostmi.

Rezultati: Analiza je pokazala največje spremembe med začetnimi in končnimi vrednostmi razmerij med državami PH-SEE mreže in povprečjem EU: v številu bolnišničnih postelj v Moldaviji (začetek: 1,78; konec: 0,96); v številu zdravnikov v Moldaviji (začetek: 1,12; konec: 0,76); v številu splošnih zdravnikov v Moldaviji (začetek: 0,34; konec: 0,56); v številu zobozdravnikov v Moldaviji (začetek: 0,76; konec: 0,50), v povprečnem trajanju hospitalizacije v Srbiji in Črni gori (začetek: 1,07; konec: 1,37) in v odstotku BDP za zdravje ponovno v Moldaviji (začetek: 0,73; konec: 0,40).

Zaključki: Razlike v zmogljivosti ter porabe in stroškov ZV so med državami mreže PH-SEE precejšnje. Nekatere od držav (npr. Grčija, Hrvaška in Slovenija) so v marsikaterem pogledu precej podobne povprečju EU, medtem ko se ostale države (npr. Albanija) soočajo s problemi nizke ekonomske moči. V obdobju 1994-2003 so se vrednosti kazalcev najmanj spreminjale v Sloveniji, najbolj pa v Moldaviji.

Ključne besede: javno zdravje, Jugovzhodna Evropa, kazalniki zdravstvenega stanja, zmogljivost zdravstvenega varstva, poraba in stroški zdravstvenega varstva

1 Introduction

Health care systems in South Eastern Europe (SEE) are to a great extent influenced by transitional problems due to political and economic changes in the early nineties. They are predominantly oriented towards curative medicine, and public health services are inadequate. There is a lack of competence not only in health management and strategic development, but also in the fields of health surveillance and prevention. This situation calls for sustainable collaboration and transfer of knowledge and experience in the field of public health (PH). As a result, the Public Health Collaboration in South Eastern Europe, Programmes for Training and Research in Public Health – PH-SEE network was established within the Stability Pact for the SEE framework in 2000 (1), coordinated by the Andrija Stampar School of Public Health, University of Zagreb, Croatia, and the School of Public Health, University of Bielefeld, Germany. The countries participating in PH-SEE are : Albania, Bosnia&Herzegovina, Bulgaria, Croatia, Macedonia (Former Yugoslav Republic), Moldova, Romania, Serbia&Montenegro (whenever possible the Kosovo territory is treated as a separate unit owing to special post-war circumstances), and Slovenia, while Greece is an associate partner.

In 2001, the project called "Minimum Health Indicator Set" (MHIS PH-SEE) was endorsed as one of the priority areas of the PH-SEE network (2). The set was developed and agreed on by all the participating countries in 2001/2002,

and was piloted in 2003 (3). Its rationale was that health surveillance is a prerequisite for more optimal decision making in health policy, while valid indicators constitute the key to its meaningful analyses. As the usefulness of different indicators depends on the specific needs of a particular region, it is essential to establish a specific indicator set. The MHIS PH-SEE is based on health targets of the WHO "Health21" strategy (HEALTH21) (4), and covers its main categories. It was agreed to base the MHIS upon the health indicator list of WHO, Regional Office for Europe (WHO-EURO) (5) and on the Final Report of the "European Community Health Indicators" project of the European Commission (6, 7).

The study of these indicators was undertaken to assess the current situation and trends in the field of health care resources (HCR) and health care utilization and costs (HCUC) in the PH-SEE countries for the period 1994 - 2003.

2 Material and methods

2.1 The meta-database

The meta-database was constructed and completed using several sources: a) the WHO-EURO Health for All database (WHO-HFADB), the version available at the time of piloting (8), which was revised in 2005 (issued in June 2005) (9); b) information provided by the European Observatory on Health Care Systems (10-18), and c) for Kosovo, data published in the European Journal of Public Health (19).

2.2 Indicators

Indicators of health care resources. According to the feasibility study (3) criteria for inclusion in the MHIS PH-SEE database for monitoring health care services were met by the indicator “hospital beds per 100,000 population”. Three indicators met the standards for monitoring human resources: “physicians per 100,000 population”, “general practitioners (GPs) per 100,000 population”, and “dentists per 100,000 population”. All indicators are defined according to the definition adopted for WHO-EURO Health for all Database (5).

Health care utilization and costs. Inclusion standards for monitoring HCUC were met by two indicators: “average length of hospital stay, all hospitals”, and “total health expenditure as a percent of gross domestic product (GDP)”. For the purpose of the present study a general indicator of economic situation, GDP in US\$ per capita, was added. The definitions adopted for WHO-EURO Health for all Database (5) were used for the standards.

2.3 Methods

Time frame. The data for the 10-year period 1994-2003 were analysed.

Benchmarking. For the benchmarking of the data of PH-SEE countries, the European Union (EU) average was agreed on (2,3). For the purpose of this study the EU-15 (EU before May 2004) average was agreed on.

Methods of analysis. All MHIS PH-SEE indicators were analysed using descriptive statistical and qualitative methods, as follows:

- the differences between the PH-SEE country with the highest and the PH-SEE country with the lowest indicator values were computed for the years 1994 and 2002 (for 2003 the reporting of indicators to WHO-HFADB was not finished in all PH-SEE countries, and the EU-15 average was not yet known this year was therefore inappropriate for making comparisons);
- the global trend for each of the indicators in each PH-SEE country for the period 1994 - 2003 was assessed using the qualitative method of subjective classification of trends in the following groups: constantly decreasing if not even a slight increase was traced, globally decreasing if only a slight increase was recorded only once, globally increasing if only a slight increase was documented only once, constantly increasing if even not a slight decrease was traced, or oscillating if the values were changeable in trend.
- the ratios of indicator values in the PH-SEE countries to the EU-15 values for 1994 (or the nearest year available) and 2002 (or the nearest year available), and the differences in ratios in the 9-year period were computed; the year 2002 was selected because

data on indicators for 2003 were not available in several countries;

- global change in each country was assessed by the following procedure: a) for each indicator the countries were ranked by the difference in ratios between 1994 and 2002; b) for each country the mean rank of ranks in difference in ratios between 1994 and 2002 was calculated; c) the countries were ranked by the mean rank.

Statistical tools. Statistical analyses were performed using the SPSS statistical package for Windows (Version 11.0, SPSS Inc., Chicago IL, USA).

3 Results

3.1 Health care resources

Hospital beds per 100,000 population. The values for 1994 ranged from 302 in Albania to 1,222 in Moldova (the value for Bosnia&Herzegovina was not reported) (range of difference: 920), and in 2002, from 310 in Bosnia&Herzegovina to 746 in Romania (the values for Greece and Macedonia were missing) (range of difference: 436) (Table 1). During the period 1994 -2003, a constant decrease in this indicator value was globally registered in EU. Similar situation was observed in Greece, Macedonia and Slovenia. In Bulgaria a steady decrease of values started in 1996. In all other countries an oscillation in values, or an upward trend were observed. For Kosovo no data were available. The ratios of PH-SEE countries value to the EU-15 average in 1994 (or the nearest year available) and 2002 (or the nearest year available), and the differences in ratios in the 9-year period, are shown in Table 2. The greatest change in ratio (-0.82) occurred in Moldova.

Physicians per 100,000 population. In 1994 the values ranged from 132 in Albania to 384 in Greece (for Bosnia&Herzegovina the value was not available) (range of difference: 224), and in 2002 from 133 in Albania to 352 in Bulgaria (data for Greece and Macedonia were not reported) (range of difference: 219) (Table 1). During the period 1994 - 2003 a constant increase in this indicator was globally recorded in EU. In Bulgaria, Croatia, Romania and Serbia&Montenegro an increasing trend was noted; in Albania, Bosnia&Herzegovina and Slovenia the values oscillated around a similar value, while in Moldova a considerable decrease occurred during the period 1999 -2002. For Kosovo no data were available. The ratios of PH-SEE countries' values to the EU-15 average in 1994 (or the nearest year available) and 2002 (or the nearest year available), and the differences in ratios in the 9-year

period, are shown in Table 2. The greatest change in ratio (-0.36) was recorded in Moldova.

General practitioners per 100,000 population. In 1994 the figures ranged from 35 in Moldova, to 99 in Macedonia (data for Bosnia & Herzegovina, Greece and Serbia&Montenegro were not reported) (range of difference: 64), and in 2002 from 23 in Bosnia&Herzegovina to 68 in Croatia (but data for Greece, Macedonia and Romania were not reported) (range of difference: 45) (Table 1). During the period 1994 - 2003 more or less stable values of this indicator were globally registered in EU. In Bulgaria, Croatia, Romania and Serbia&Montenegro an upward trend was observed, in Albania, Bosnia&Herzegovina and Slovenia, the values oscillated around the similar value, while in Moldova a considerable decrease occurred during the period 1999 - 2002. No data, however, were available for Kosovo. The ratios of PH-SEE countries values to EU-15 average in 1994 (or the nearest year available) and 2002 (or the nearest year available), and the differences in ratios in the 9-year period are indicated in Table 2. The greatest change in ratio (+0.22) was recorded in Moldova (but the differences for Greece and Serbia&Montenegro were not assessed because data were missing).

Dentists per 100,000 population. In 1994 the values ranged from 26 in Romania to 103 in Greece (data for Bosnia&Herzegovina were not available) (range of difference: 77), and in 2002 from 18 in Bosnia & Herzegovina to 78 in Bulgaria (data for Greece and Macedonia were not available) (range of difference: 60) (Table 1). In the period 1994 - 2003 more or less stable values of this indicator were globally reported in EU. In Bulgaria, Croatia, Romania and Serbia & Montenegro an increasing trend was noted, in Albania, Bosnia&Herzegovina and Slovenia the values oscillated around the similar value, while in Moldova a considerable decrease occurred during the period 1999 - 2002. No data were available for Kosovo. The ratios of PH-SEE countries values to the EU-15 average in 1994 (or the nearest year available) and in 2002 (or the nearest year available), and the differences in ratios in the 9-year period, are indicated in Table 2. The greatest change in ratio (-0.26) was observed in Moldova.

3.2 Health care utilization and costs

Average length of hospital stay, all hospitals. The values for 1994 ranged from 9.0 in Albania and Greece to 17.3 in Moldova (data for Bosnia&Herzegovina were not available) (range of difference: 8.3), and for 2002 from 6.8 in Albania to 12.1 in Serbia&Montenegro (data for Greece and Macedonia were not reported) (range of difference: 5.3) (Table 3). During the period 1994 - 2003

a constant decrease in values of this indicator was globally reported in EU. Similar process was observed in Albania, Bosnia&Herzegovina, Bulgaria, Croatia, Greece and Slovenia. In Macedonia, Moldova and Romania there was first an increase and then a decrease, while in Serbia&Montenegro the initial decrease was followed by an increase. Data for Kosovo were not available. The ratios of PH-SEE countries values to the EU-15 average in 1994 (or the nearest year available) and in 2002 (or the nearest year available), and the differences in ratios in the 9-year period, are shown in Table 4. The greatest change in ratio (+0.30) occurred in Serbia&Montenegro.

Total health expenditure as a per cent of gross domestic product (GDP). In 1994 the figures ranged from 2.8 for Albania to 9.7 for Greece (information for Bosnia&Herzegovina and Macedonia was not provided) (range of difference: 6.9), and in 2002 from 2.2 in Albania to 9.5 in Greece (data for Bosnia&Herzegovina, Bulgaria, Croatia, Macedonia, Serbia&Montenegro and Slovenia were not reported) (range of difference: 7.3) (Table 3). Between 1994 and 2003, a slight increase in the values of this indicator was globally reported in EU. In all PH-SEE countries major or minor oscillations were noted (in Bosnia&Herzegovina, Bulgaria, Croatia and Macedonia trends were not estimated because of the lack of data). For Kosovo the estimated value for 2000 was 2.5. The ratios of PH-SEE countries values to the EU-15 average in 1994 (or the nearest year available) and in 2002 (or the nearest year available), and the differences in ratios in the 9-year period, are demonstrated in Table 4. The estimated ratio for Kosovo was 0.27. The greatest change in ratio (-0.33) occurred in Moldova.

Gross domestic product, US\$ per capita. In 1994 the values ranged from 327 in Moldova to 9632 in Greece (values for Albania, Bosnia&Herzegovina, Bulgaria, Romania and Serbia&Montenegro were not reported) (range of difference: 9305), and in 2002 from 382 in Moldova to 12494 in Greece (but data for Serbia&Montenegro were not reported available) (range of difference: 12112) (Table 3). Between 1994 and 2003 more or less stable values of this indicator were globally noted in EU. Generally, an increase occurred in most PH-SEE countries (in Albania, Bosnia&Herzegovina, Bulgaria, and Romania the estimation of trends was impeded by the missing data, and in Serbia&Montenegro estimation was impossible because of lack of data). For Kosovo no data were available. The ratios of PH-SEE countries values to the EU-15 average in 1994 (or the nearest year available) and in 2002 (or the nearest year available), and the differences in ratios in the 9-year period, are indicated in Table 4. The greatest change in ratio (+0.13) occurred in Slovenia.

Table 1. Selected indicators on health care resources for countries collaborating in the field of public health in South Eastern Europe (PH-SEE), 1994-2003, compared to the European Union average.

Tabela 1. Izbrani kazalci virov zdravstvene oskrbe v državah, ki sodelujejo v mreži "Javno zdravje v Jugovzhodni Evropi (PH-SEE)" za obdobje 1994-2003, primerjava s povprečjem EU (EU before May 2004).

Country/Država	Year/Leto									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Hospital beds per 100,000 population										
Število bolniških postelj na 100.000 prebivalcev										
Albania	302	319	314	305	305	303	326	326	314	307
Bosnia&Herzegovina					382	380	324	322	310	314
Bulgaria	1020	1037	1047	1028	841	749	741	720	649	629
Croatia	591	575	619	601	606	593	615	600	567	561
Greece	491	491	491	487	485	472	472			
Macedonia (FYR*)	555	542	520	516	515	510	506	494		
Moldova	1222	1221	1213	1162	1123	819	759	589	577	667
Romania	769	764	756	738	731	731	744	749	746	656
Serbia&Montenegro	543	531	551	553	548	541			599	
Slovenia	578	575	566	567	562	555	543	516	508	496
EU before May 2004	687	672	663	647	637	626	615	608	600	
Physicians per 100,000 population										
Število zdravnikov na 100.000 prebivalcev										
Albania	132	131	130	129	129	128	139	134	133	
Bosnia&Herzegovina					143	144	142	145	144	146
Bulgaria	333	346	354	345	345	344	337	344	352	360
Croatia	201	204	225	226	229	229	238	238	238	244
Greece	384	386	388	399	413	424	433	438		
Macedonia (FYR*)	232	230	225	225	225	221	220	219		
Moldova	356	351	356	358	363	325	318	271	270	311
Romania	176	177	181	179	184	191	189	189	191	196
Serbia&Montenegro	199	202	205	212	214	213			268	
Slovenia	219	212	213	215	218	215	218	219	224	
EU before May 2004	319	322	329	334	337	343	350	353	356	
General practitioners per 100,000 population										
Število splošnih zdravnikov na 100.000 prebivalcev										
Albania	54	60	49		46	46	50	51	50	
Bosnia&Herzegovina					29	25	25	23	23	21
Bulgaria	76	80	80				67	65	67	68
Croatia	76	73	68	68	68	68	71	69	68	68
Greece										
Macedonia (FYR*)	99	100	93	93	92	92	91	85		
Moldova	35	33	34	35	40	53	59	54	57	68
Romania	75	74	74		81		44†			
Serbia&Montenegro									55	
Slovenia	37	44	41	39	47	45	46	46	47	
EU before May 2004	102	105	103	103	102	102	102	102	102	
Dentists per 100,000 population										
Število zobozdravnikov na 100.000 prebivalcev										
Albania	40	35	31	41	41					
Bosnia&Herzegovina					19	20	19	18	18	18
Bulgaria	66	65	66	63	59	57	83	82	78	83
Croatia	54	56	62	62	66	64	68	68	68	69
Greece	103	100	107	108	110	112	113	113		
Macedonia (FYR*)	56	55	54	55	57	56	56	55		
Moldova	44	44	43	43	43	42	37	31	33	39
Romania	26	27	26	24	24	23	22	23	22	23
Serbia&Montenegro	39	39	39	40	39	39			47	
Slovenia	53	64	57	59	61	60	59	59	60	
EU before May 2004	58	59	60	61	62	63	64	65	66	

Sources: WHO Health for All database (9), European Observatory on Health Care Systems (10-18)

Legend: * - Former Yugoslav Republic; † - European Observatory on Health Care Systems data (10-18)

Viri: SZO podatkovna baza "Health for All" (9), European Observatory on Health Systems (10-18)

Legenda: * - bivša jugoslovanska republika; † - European Observatory on Health Care Systems (10-18)

Table 2. *The ratios of indicators values on health care resources of the Minimum Health Indicator Set of countries collaborating in the field of public health in the South Eastern Europe (PH-SEE) to the values of European Union average (EU-15 average = EU average before May 2004) in 1994 (or the nearest year available) and 2002 (or the nearest year available), and the differences in ratios in the 9-year period.*

Tabela 2. *Razmerje med vrednostmi kazalcev o virih zdravstvene oskrbe v državah, ki sodelujejo v mreži "Javno zdravje v Jugovzhodni Evropi (PH-SEE)", in med povprečno vrednostjo v EU (EU-15 average = povprečje EU pred majem 2004) l.1994 (ali v najbližjem letu, ki je na voljo) in l.2002 (ali v najbližjem letu, ki je na voljo), in razlike med temi razmerji v obdobju 9 let.*

Year*/ Leto*	EU-15 average	PH-SEE Network country Države članice mreže PH-SEE									
		Albania	Bosnia & Herzegovina	Bulgaria	Croatia	Greece	Macedonia (FYR) †	Moldova	Romania	Serbia & Montenegro	Slovenia
Hospital beds per 100,000 population Število bolniških postelj na 100.000 prebivalcev											
1994	1	0.44	0.56	1.48	0.86	0.71	0.81	1.78	1.12	0.79	0.84
2002	1	0.52	0.52	1.08	0.95	0.79	0.82	0.96	1.24	1.00	0.85
Difference/Razlika		0.08	-0.04	-0.40	0.09	0.08	0.01	-0.82	0.12	0.21	0.01
Physicians per 100,000 population Število zdravnikov na 100.000 prebivalcev											
1994	1	0.41	0.45	1.04	0.63	1.20	0.73	1.12	0.55	0.62	0.69
2002	1	0.37	0.40	0.99	0.67	1.23	0.61	0.76	0.53	0.75	0.63
Difference/Razlika		-0.04	-0.05	-0.05	0.04	0.03	-0.12	-0.36	-0.02	0.13	-0.06
General practitioners per 100,000 population Število splošnih zdravnikov na 100.000 prebivalcev											
1994	1	0.53	0.29	0.75	0.74		0.97	0.34	0.73		0.36
2002	1	0.49	0.23	0.66	0.67		0.83	0.56	0.79	0.54	0.46
Difference/Razlika		-0.04	-0.06	-0.09	-0.07		-0.14	0.22	0.06		0.10
Dentists per 100,000 population Število zobozdravnikov na 100.000 prebivalcev											
1994	1	0.69	0.33	1.13	0.93	1.77	0.96	0.76	0.45	0.67	0.91
2002	1	0.63	0.28	1.19	1.04	1.72	0.84	0.50	0.34	0.71	0.92
Difference/Razlika		-0.06	-0.05	0.06	0.11	-0.05	-0.12	-0.26	-0.11	0.04	0.01

Legend: * - the stated year or the nearest year available; † - Former Yougoslav Republic

Legenda: * - označeno leto ali najbližje razpoložljivo leto; bivša jugoslovanska republika

Table 3. Selected indicators on health care utilization and costs for countries collaborating in the field of public health in South Eastern Europe (PH-SEE), 1994-2003, compared to the European Union average.

Tabela 3. Izbrani kazalci uporabe in stroškov zdravstvenega varstva v državah, ki sodelujejo v mreži "Javno zdravje v Jugovzhodni Evropi (PH-SEE)" za obdobje 1994-2003, primerjava s povprečjem EU (EU before May 2004).

Country/Država	Year/Leto									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Average length of stay, all hospitals										
Povprečno trajanje hospitalizacije, vse bolnišnice										
Albania	9.0	8.2	8.1	7.9	7.6	7.5	6.9	6.7	6.8	6.6
Bosnia&Herzegovina					11.5	11.0	11.1	10.5	10.7	10.3
Bulgaria	13.6	13.6	13.2	12.9	12.5	11.9	11.5	10.7	9.2	8.8
Croatia	13.8	13.2	13.4	12.9	12.6	12.3	11.9	11.8	11.2	11.0
Greece	9.0	8.5	8.6	8.7	8.3					
Macedonia (FYR*)	14.0	14.3	14.0	13.4	12.7	12.6	12.2	11.8		
Moldova	17.3	17.5	18.1	18.0	17.6	16.3	14.2	12.5	11.5	10.8
Romania	10.3	11.0	10.0	10.0	10.0	9.5	8.9	8.7	8.2	8.0
Serbia&Montenegro	13.0	12.0	12.0	12.0	12.0	11.0			12.1	
Slovenia	10.6	10.4	10.5	10.0	9.5	9.0	8.6	8.3	8.1	7.4
EU before May 2004	12.1	11.5	11.3	10.9	10.5	9.9	9.6	9.2	8.8	8.7
Total health expenditure as % of gross domestic product (GDP)										
Vsi stroški zdravstvenega varstva kot % BDP										
Albania	2.8	2.4	2.2	2.1	1.9	2.3	2.0	2.1	2.2	2.3
Bosnia&Herzegovina				7.2†	7.7†					
Bulgaria	4.7		3.2†	3.5†	3.4†					
Croatia	9.0		7.3†	7.2†						
Greece	9.7	9.6	9.6	9.4	9.4	9.6	9.7	9.4	9.5	
Macedonia (FYR*)						5.6	4.5			
Moldova	6.2	5.8	6.9	6.0	4.3	2.9	3.0	2.9	3.6	4.0
Romania	3.0	3.2	3.4	3.1	4.1	3.9	4.1	4.1	4.2	4.1
Serbia&Montenegro	9.5	8.7	8.0	9.1	7.6	6.9	7.6			
Slovenia	7.9	7.8	7.8	7.7	7.8	7.7	8.0	8.2		
EU before May 2004	8.5	8.6	8.7	8.6	8.6	8.6	8.7	8.9	9.1	
Gross domestic product, US\$ per capita										
BDP, US\$ na prebivalca										
Albania						906		1,300	1,535	
Bosnia&Herzegovina								1,175	1,362	
Bulgaria							1,474	1,690	1,944	
Croatia	3,139	4,029	4,422	4,362	4,663	4,777		4,625	5,025	
Greece	9,632	11,244	11,811	11,577	11,561	11,902	10,782	11,063	12,494	
Macedonia (FYR*)	1,616	1,583	1,581	1,593					1,860	
Moldova	327	392	442		449	255		346	382	
Romania				1,545		1,503		1,728	2,052	
Serbia&Montenegro										
Slovenia	7,233	9,431	9,481	9,163	9,847	10,450			1,1181	
EU before May 2004	20,310	23,275	23,593	22,124	22,868	22,795	20,908	20,863	2,2745	

Sources: WHO Health for All database (9), European Observatory on Health Care Systems (10-18)

Legend: * - Former Yugoslav Republic; † - European Observatory on Health Care Systems data (10-18)

Viri: SZO podatkovna baza "Health for All" (9), European Observatory on Health Systems (10-18)

Legenda: * - bivša jugoslovanska republika; † - European Observatory on Health Care Systems (10-18)

Table 4. *The ratios of values of indicators on health care utilization and costs of the Minimum Health Indicator Set of countries collaborating in the field of public health in the South Eastern Europe (PH-SEE) to the values of European Union average (EU-15 average = EU average before May 2004) in 1994 (or the nearest year available) and 2002 (or the nearest year available), and the differences in ratios in the 9-year period.*

Tabela 4. *Razmerje med vrednostmi kazalcev uporabe in stroškov zdravstvene oskrbe v državah, ki sodelujejo v mreži "Javno zdravje v Jugovzhodni Evropi (PH-SEE)", in med povprečno vrednostjo v EU (povprečje EU-15 = povprečje EU pred majem 2004) v 1994 (ali v najbližjem letu, ki je na voljo) in v 2002 (ali v najbližjem razpoložljivem letu) in razlike med temi razmerji v obdobju 9 let.*

Year*/ Leto*	EU-15 average	PH-SEE Network country									
		Albania	Bosnia & Herzegovina	Bulgaria	Croatia	Greece	Macedonia (FYR) †	Moldova	Romania	Serbia & Montenegro	Slovenia
Average length of stay, all hospitals											
Povprečno trajanje hospitalizacije, vse bolnišnice											
1994	1	0.74	0.95	1.12	1.14	0.74	1.15	1.43	0.85	1.07	0.87
2002	1	0.77	1.21	1.04	1.27	0.94	1.34	1.31	0.93	1.37	0.92
Difference/Razlika		0.03	0.26	-0.08	0.13	0.20	0.19	-0.12	0.08	0.30	0.05
Total health expenditure as % of gross domestic product (GDP)											
Vsi stroški zdravstvenega varstva kot % BDP											
1994	1	0.33	0.85	0.56	1.06	1.14	0.66	0.73	0.35	1.12	0.93
2002	1	0.24	0.85	0.38	0.80	1.05	0.50	0.40	0.46	0.84	0.91
Difference/Razlika		-0.09	0.00	-0.18	-0.26	-0.09	-0.16	-0.33	0.11	-0.28	-0.02
Gross domestic product/US\$ per capita											
BDP, US\$ na prebivalca											
1994	1	0.04	0.06	0.07	0.15	0.47	0.08	0.02	0.08		0.36
2002	1	0.07	0.06	0.09	0.22	0.55	0.08	0.02	0.09		0.49
Difference/Razlika		0.03	0.00	0.02	0.07	0.08	0.00	0.00	0.01		0.13

Legend: * - the stated year or the nearest year available; † - Former Yougoslav Republic

Legenda: * - označeno leto ali najbližje razpoložljivo leto; bivša jugoslovanska republika

3.3 Profiles of the PH-SEE network countries in the field of HCR and HCUC

According to the data available for the period 1994 - 2003 the greatest changes were reported in Moldova, where during the 9-year period the ratio of hospital beds per 100,000 population to EU decreased globally from 1.78 to 0.96 and the ratio of physicians per 100,000 population from 1.12 to 0.36; for GPs per 100,000 population it increased from 0.34 to 0.56, and for dentists per 100,000 population it decreased from 0.76 to 0.50. Furthermore, the greatest decrease in total health expenditure as a percent of GDP was reported in this country (from 0.73 to 0.40) (Tables 2 and 4). The average rank on the scale of changes for the countries was as follows (lower values indicate higher changes): Moldova 2.7, Serbia&Montenegro 3.6, Bulgaria 4.3, Croatia 4.3, Greece 5.3, Romania 5.4, Macedonia 5.8, Albania 7.0, Bosnia&Herzegovina 7.1, and Slovenia 7.2). The most stable country was Slovenia where only slight to moderate changes were recorded for all values except for the GDP value which was considerably increased. The global profiles of PH-SEE countries which followed all seven indicators for 1994 (or the nearest available year) and 2002 (or the nearest available year) are indicated in Figures 1 and 2.

4 Discussion

4.1 Selection of the indicators

In the selection process of MHIS PH-SEE, specific needs of the PH-SEE countries were assessed. Priorities, measurability in quantitative and qualitative terms, sensitivity to changes and differences, inter-territorial comparability, affordability in terms of relative costs, and usefulness for intervention were considered. A detailed description of selection methods is given in the paper by Bardehle (2) and in the final report on the piloting phase (3).

4.2 Results of the study

Hospital beds per 100,000 population. There was a notable difference in this indicator among the PH-SEE countries, but it seems to be diminishing. In many PH-SEE countries, a decrease in hospital bed figures was recorded during the period 1994 - 2003. The change was particularly remarkable in Moldova and Bulgaria (Table 2, Figures 1 and 2). In 1994 these two countries had much higher values of this indicator

compared to the average EU value (the ratios were 1.78 and 1.48, respectively). The situation may be a result of hospital treatment expansion, which took place all over Europe between 1960 and the beginning of 1980 (20). In Western Europe the process of reducing hospital bed capacity began in 1980s, while in Eastern Europe the expansion persisted and led to a severe crisis in 1990s (20). The reason for the decrease in the number of hospital beds in Moldova and Bulgaria between 1994 and 2003 is not the object of this analysis, but lack of financial resources has been identified as one possible explanation. In many PH-SEE countries, the total health expenditure as a percent of GDP spent on health care decreased during this period (Table 3). Another reason seems to be the process of integration of some PH-SEE countries in EU (Greece joined EU several years previously, Slovenia in May 2004, Bulgaria and Romania are supposed to become full members in 2007, Croatia entered the negotiation process in October 2005), which requires adapting to EU standards. In Albania, on the contrary, the value of this indicator was low throughout this period (in 1994 and in 2002 the indicator value was about half the EU-15 average. This observation, together with the data on hospital stay, indicate that Albania is facing serious problems of inadequate health care provision within the hospital sector.

Physicians per 100,000 population. The total number of physicians is one of the most important indicators of health care manpower resources (20). To ensure appropriate access to outpatient and inpatient health care services, optimally high figures, as well as continuous slight increases are required (20). Great differences were found between the PH-SEE countries during the period 1994 - 2003. Considerably lower values of this indicator compared to the EU-15 average (with the ratio to the EU-15 of less than 0.50) were recorded at the beginning of the observation period in Albania and Bosnia&Herzegovina (Table 2, Figures 1 and 2). In Croatia, Macedonia, Romania, Serbia & Montenegro and Slovenia the values were somewhat lower, while in Bulgaria, Greece and Moldova they were slightly increased (Table 2, Figures 1 and 2). In 2002 (or the nearest year available) the situation grew worse in Albania and Bosnia & Herzegovina (Table 2, Figures 1 and 2). The most logical explanation for this phenomenon seems to be inadequate health care financing, since the GDP is much below the EU-15 average in most of the PH-SEE countries. Together with low total health expenditure as a percent of GDP, this means extremely low budget for health care.

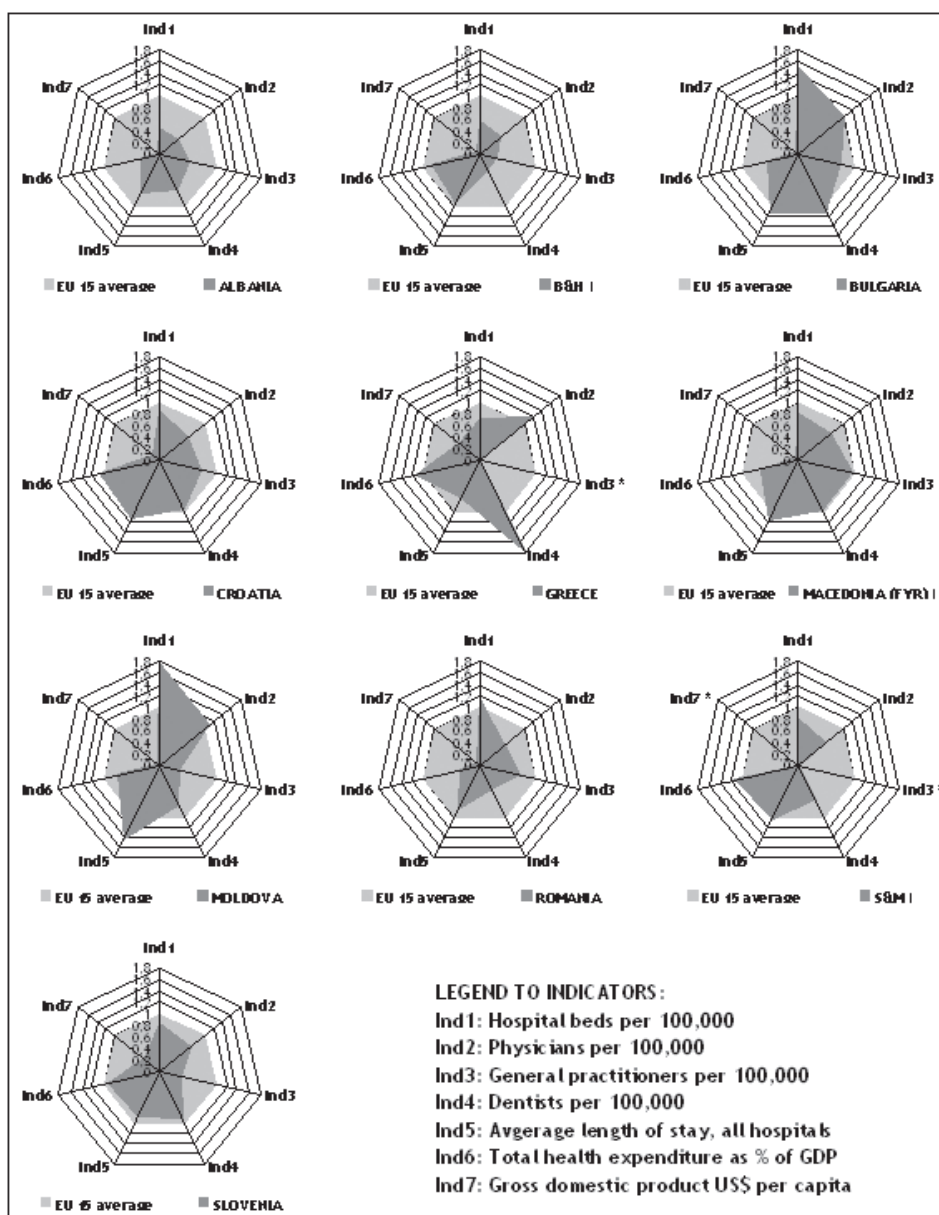


Figure 1. Global situation of ratios of selected indicators on health care resources and health care utilization and costs values in the PH-SEE countries to the values of European Union average (EU-15 average, before May 2004) in 1994 or the nearest year available. Comments and abbreviations: * no data available for the total period; †: B&H = Bosnia&Herzegovina, FYR = Former Yougoslav Republic, S&M = Serbia&Montenegro.

Slika 1. Razmerje med izbranimi kazalci virov zdravstvene oskrbe ter uporabe in stroškov zdravstvenega varstva v državah mreže PH-SEE in med povprečno vrednostjo za EU (povprečje EU-15 pred majem 2004) l. 1994 (ali najbližje razpoložljivo leto). Komentarji in okrajšave: * za vse obdobje ni podatkov; †: B&H = Bosna in Hercegovina, FYR = bivša jugoslovanska republika, S&M = Srbija in Črna gora. LEGENDA: Ind1 = Število bolniških postelj na 100.000 prebivalcev, Ind2 = Število zdravnikov na 100.000 prebivalcev, Ind3 = Število splošnih zdravnikov na 100.000 prebivalcev, Ind4 = Število zobozdravnikov na 100.000 prebivalcev, Ind5 = Povprečno trajanje hospitalizacije, vse bolnišnice, Ind6 = Vsi stroški zdravstvenega varstva kot % BDP, Ind7 = BDP, US\$ na prebivalca.

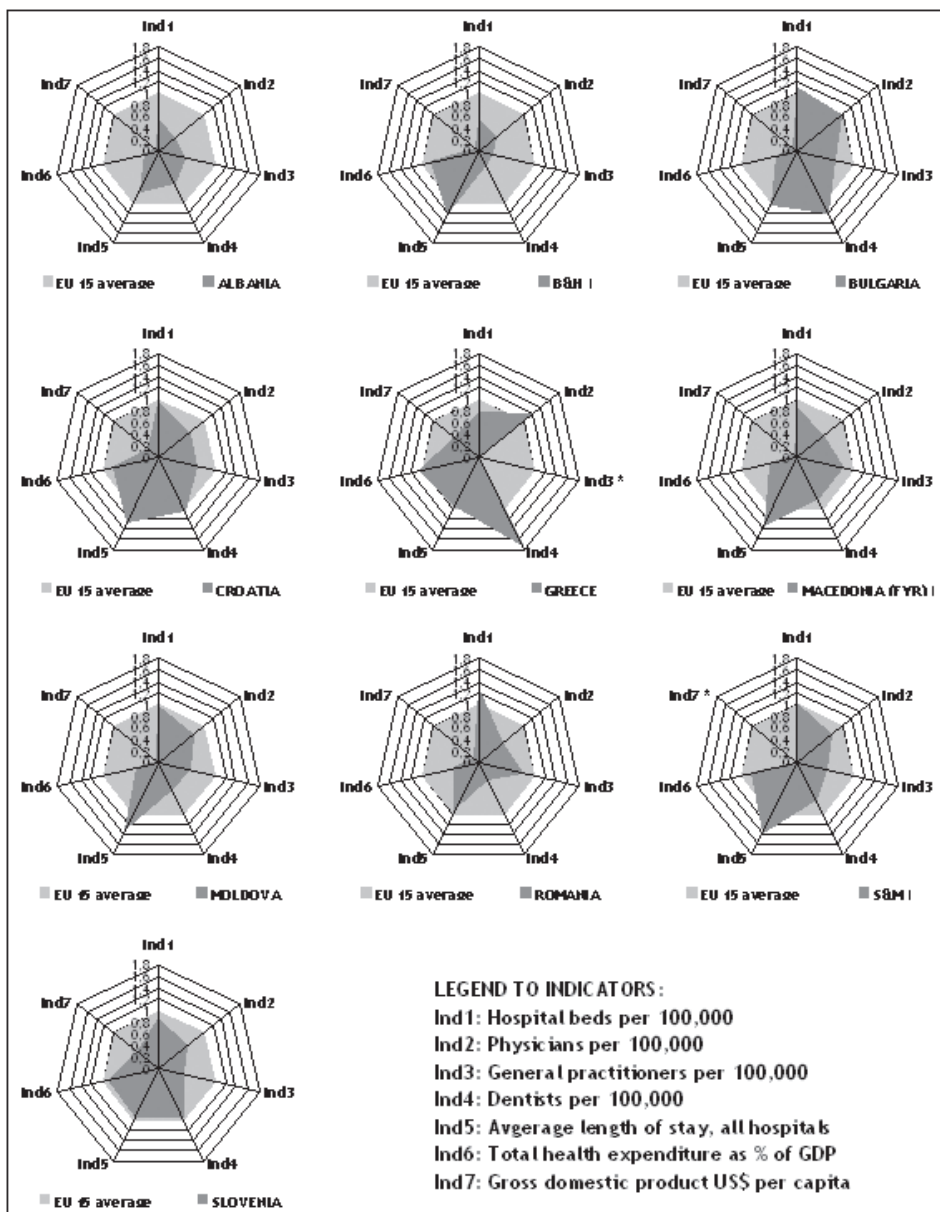


Figure 1. Global situation of ratios of selected indicators on health care resources and health care utilization and costs values in the PH-SEE countries to the values of European Union average (EU-15 average, before May 2004) in 2002 or the nearest year available. Comments and abbreviations: * no data available for the total period; †: B&H = Bosnia&Herzegovina, FYR = Former Yougoslav Republic, S&M = Serbia&Montenegro.

Slika 1. Razmerje med izbranimi kazalci virov zdravstvene oskrbe ter uporabe in stroškov zdravstvenega varstva v državah mreže PH-SEE in med povprečno vrednostjo za EU (povprečje EU-15 pred majem 2004) l.2002 (ali najbližje razpoložljivo leto). Komentarji in okrajšave: * za vse obdobje ni podatkov; †: B&H = Bosna in Hercegovina, FYR = bivša jugoslovanska republika, S&M = Srbija in Črna gora. LEGENDA: Ind1 = Število bolniških postelj na 100.000 prebivalcev, Ind2 = Število zdravnikov na 100.000 prebivalcev, Ind3 = Število splošnih zdravnikov na 100.000 prebivalcev, Ind4 = Število zobozdravnikov na 100.000 prebivalcev, Ind5 = Povprečno trajanje hospitalizacije, vse bolnišnice, Ind6 = Vsi stroški zdravstvenega varstva kot % BDP, Ind7 = BDP, US\$ na prebivalca.

Another reason may be the escape of young people from health professions to more remunerative professions in economy business, but this theory needs to be verified.

General practitioners per 100,000 population. This indicator reflects the provision with primary health care (PHC) resources in a country. Great differences in this indicator were found between the network countries. In comparison to the EU-15 average, at the beginning of the observation period the situation was considerably unfavourable in Bosnia&Herzegovina, Moldova, and Slovenia (with the ratio to the EU-15 of less than 0.50) (Table 2, Figures 1 and 2). It improved in Moldova and was slightly better in Slovenia, but slightly deteriorated in Bosnia&Herzegovina. It seems that health care systems in many of the PH-SEE countries are faced with a relative surplus of highly specialized physicians and shortage of properly trained GPs and family doctors. This is a matter of concern since GPs and nurses represent professions which are the hub of the PHC services network (20). Such situation is likely to create serious problems: highly specialized physicians are primarily interested in the curative approach rather than in combining it with the preventive one. In order to ensure that the supply of health care personnel will meet their needs, most countries have to provide capacities for planning their future human resource requirements more properly.

Dentists per 100,000 population. The number of dentists is also of great importance for the PHC, as dental medicine represents an important part of the community-oriented PHC sector (20). As compared to the EU-15 average this values in the PH-SEE countries at the beginning of the observation period showed a considerably unfavourable situation in Bosnia & Herzegovina and Romania (with the ratio to the EU-15 less than 0.50) (Table 2, Figures 1 and 2), which became even worse at the end of the study. The values for Bulgaria exceeded slightly the EU-15 average, but this finding may be due to different definition of a dentist (3). Much higher values were reported in Greece.

Average length of hospital stay, all hospitals. During the period 1994 - 2003, the average length of hospital stay was decreasing in most PH-SEE countries, indicating that they followed the average EU trend (Table 3, Figures 1 and 2), The only exception was Serbia&Montenegro where this indicator increased. Reduced hospital bed capacities coupled with shorter hospital stay represent another mechanism for rationalizing the use of secondary and tertiary health care. During the past decades the

number of overnight hospital stays in Europe has been reduced, and other settings, such as day-care hospitals, short-stay hospitals, and hospitals providing outpatient care have been established. Nevertheless, the average hospital stay in Eastern European countries is much longer than in the Western Europe (20). This indicator can also be used for assessing cost-effectiveness of the use of available HCR, and therefore shows that health care systems in the Eastern Europe, which is less economically developed , are also less efficient. On the other hand, this situation seem to reflect an arising problem. In 2000, Albania reported the lowest value for this indicator, which suggests absolute lack of hospital beds rather than only the process of general rationalization of health care use. This hypothesis has not yet been verified, but is indirectly supported by the total number of hospital beds for this country (Table 1). Different morbidity structure plays an important role in the assessment of this indicator, but this was not the object of our study.

Total health expenditure as a percent of gross domestic product (GDP). This indicator shows what proportion of the GDP can be spent on health care in a country, and largely depends on its economic status. The availability of financial resources required to operate health care services cannot be specified in absolute terms. The amount should be affordable by the country and high enough to meet the needs of health promotion, disease prevention and provision of effective and high-quality curative health care. HEALTH 21 states that 7 - 10% of the GDP population might provide a reasonable amount for a reasonable development of the capacity and performance of a health system if the overall GDP level is adequate (20). Unfortunately, during the period 1994 - 2003 the absolute level of public spending on health care in some of PH-SEE countries was too low to meet even the minimal requirements of the population,; the GDP was extremely low and so was the total health expenditure as a percent of GDP (Table 3, Figures 1 and 2). At the end of observation period, in five PH-SEE countries (Albania, Bulgaria, Macedonia, Moldova and Romania, Kosovo) the value of this indicator was below the suggested minimum. The situation was especially unfavourable in Albania and Kosovo. In addition, an alarming decrease was recorded in Moldova, where the value was halved. The solution is not easy to foresee because of the low economic power of these countries (Table 3).

The profiles of the PH-SEE countries. The results of our study globally indicate that Slovenia was the most

stable PH-SEE country during the observed period, while Moldova experienced the most rapid changes. When comparing the results of the PH-SEE countries to the EU-15 average in 2002, it is hard to say which country has come closest to that value. Croatia, Greece and Slovenia has similar values for several indicators (Figure 2).

4.3 Comparison with other studies

Comparison with other studies was not possible because the study is currently unique in this part of Europe.

4.4 Strengths and limitations of the study

The strength of this study is that it provides a valuable assessment of the availability of indicators from the MHIS PH-SEE list. The results of the study may serve as an incentive for a more regular reporting in some countries. It is also a very first attempt to investigate indicators of HCR and HCUC in the PH-SEE network countries. These indicators may prove useful in the future development of this underprivileged part of Europe, especially in the field of PH and policies, which should be addressed in the light of EU enlargement in the near future.

However, our study has some limitations. The main drawback is the lack of data on some indicators, which impeded the comparison of some indicators, such as "total health expenditure as a percent of GDP" and "GDP in US\$ per capita". This first description of country profiles, however, is of great value to the future process of the SEE countries approaching to each other. Another drawback, although only a temporary one, is that not all indicators required for monitoring HCR and HCUC are currently included in the MHIS PH-SEE. For monitoring health care services two indicators were selected during the selection process (2): "the number of PHC units" and "the number of hospital beds", both per 100,000 population. The rationale was that health care services, especially those supplied by the PHC units, are extremely important for the health of the population. In many situations they represent a cost-effective alternative to expensive hospital facilities (the running costs for hospitals are much higher than those for PHC units because of high costs of infrastructure and staff maintenance). Unfortunately, the feasibility study (3) showed that the indicator of the number of PHC units failed to meet the data quality standard (the PH-SEE countries do not use the same definition of PHC unit)

and was temporarily removed from the MHIS PH-SEE list. The indicator "nurses graduated per 100,000 population" in the set of HCUC indicators was agreed to be included. The rationale behind this decision was that human resources are one of the most important factors in quality health care services. The key health professionals are those working in PHC units, primarily physicians, especially specialists of family medicine, and nurses (20). The feasibility study (3) showed that the indicator "number of nurses graduated" failed to meet the standard of at least acceptable data availability, and was therefore temporarily removed from the MHIS PH-SEE list.

4.5 Necessary steps in the near future

In the near future, different aspects of the definition of several indicators presented in this study should be reassessed. Some of them are not clear enough; e.g. the indicator "number of hospital beds", does not specify whether private hospital beds are included, and the indicator "number of physicians and GPs" does not make it clear whether private sector physicians/GPs are included. The indicator of dentists poses problems related to the changed definition. The newest WHO definition requires university degree for dentists, but in some countries this definition has been used only for the past few years.

5 Conclusions

The results of the present study revealed great differences between individual PH-SEE countries in the field of HCR and HCUC, and showed that these discrepancies have been increasing in many respects. Countries on one side of the spectrum, such as Croatia, Greece and Slovenia, are in many respects close to the EU-15 average, while other countries, e.g. Albania, are confronted with all consequences of low economic power. Yet, the situation seems to be improving in these countries too. Between the two poles there is a pallet of different situations. The results stress the need for enhancing mutual help between countries within the PH-SEE network, and for encouraging member countries to share their experience.

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ATTITUDES OF SLOVENE GENERAL PRACTICE TRAINERS TO THE IMPLEMENTATION OF PREVENTIVE ACTIVITIES

ODNOS MENTORJEV SPLOŠNE MEDICINE DO IZVAJANJA PREVENTIVNIH DEJAVNOSTI

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Prispelo: 17. 2. 2005 - Sprejeto: 30. 1. 2006

Original scientific article
UDC 616-084

Abstract

Aim: To determine the knowledge of and the attitudes of Slovene general practitioners (GPs) to evidence-based health promotion and disease prevention, to identify perceived barriers to the implementation of recommendations, and to assess how GPs' own health behaviors affect their work.

Methods: This study was a part of the multinational EUROPREV (European Network for Prevention and Health Promotion in Family Medicine and General Practice) survey. In 2000/2001 a postal survey was conducted in a sample of GPs from national colleges of each EUROPREV member country. In summer 2000, 100 Slovene general practice/family medicine (GP/FM) tutors were sent EUROPREV questionnaires assessing their attitudes towards preventive services in general practice and towards their own lifestyles.

Results: The response rate was 55%. Slovene GPs are well aware of the need to provide preventive and health promotion services, but in practice, they are less likely to do so. A total of 62% of respondents found it difficult to implement disease prevention and health promotion programmes. Heavy workload and lack of time (93%), as well as lack of incentive (35%) were the two most important barriers reported.

Conclusions: A significant discrepancy between GPs' knowledge and practice was found as concerns the use of evidence-based recommendations for health promotion and disease prevention in Slovene primary care.

Key words: attitudes, prevention, health promotion, general practice, Slovenia

Izvorni znanstveni članek
UDK 616-084

Izvelek

Cilji: Ugotoviti, kakšno je poznavanje in odnos slovenskih splošnih zdravnikov do preventivnih dejavnosti in dejavnosti za krepitev zdravja, podprtih z dokazi; opredeliti ovire, ki jih doživljajo pri izvajanju priporočenih dejavnosti in ugotoviti, kako njihove lastne zdravstvene navade vplivajo na njihovo delo.

Metode: Raziskava je del mednarodnega projekta EUROPREV (Evropska mreža za preprečevanje bolezni in krepitev zdravja v družinski medicini in splošni praksi). V letih 2000/2001 je potekala anketa, ki je zajela vzorec družinskih zdravnikov nacionalnih univerz vseh držav članic mreže EUROPREV. Poleti leta 2000 je sto slovenskih tutorjev splošne/družinske medicine prejelo vprašalnik EUROPREV o odnosu do preventivnih dejavnosti v splošni praksi in do lastnih zdravstvenih navad.

Rezultati: Odgovorilo je 55 % vprašanih. Slovenski splošni zdravniki se dobro zavedajo nujnosti preprečevanja bolezni in krepitev zdravja, vendar je ta slika v praksi drugačna. Dvainšestdeset odstotkov anketiranih je menilo, da je delo na področju preprečevanja bolezni in krepitev zdravja zahtevno. Največkrat navedene ovire v anketi so bile delovna obremenitev in pomanjkanje časa (93%) ter pomanjkanje pobud (35%).

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Zaključki: Pri uresničevanju z dokazi podprtih priporočil za krepitev zdravja in preprečevanje bolezni v osnovnem zdravstvu se je pokazala velika neskladnost med znanjem splošnih zdravnikov in njihovim praktičnim delom.

Ključne besede: odnos, preventiva, promocija zdravja, splošna praksa, Slovenija

Introduction

Cardiovascular diseases are the major cause of early death in developed countries; they are an important cause of morbidity and invalidity, and of increased health care costs (1). Guidelines and recommendations on prevention, identification and control of arterial hypertension focus on lifestyle risk factors and patients' health behaviour (2 - 3). Elimination of lifestyle-related risk factors is extremely important not only in patients but also in "healthy" individuals at high cardiovascular risk (4). As it is not possible to influence biological risk factors (gender, age and family history), primary health care physicians are supposed to focus on lifestyle risk factors, including unhealthy diet, physical inactivity, smoking, risky alcohol consumption and overweight (5). These are the most important issues that should be addressed through public health policy and medical interventions (1).

Cardiovascular diseases are the major cause of early death in developed countries; they are an important cause of morbidity and invalidity, and of increased health care costs (1). Guidelines and recommendations on prevention, identification and control of arterial hypertension focus on lifestyle risk factors and patients' health behaviour (2 - 3). Elimination of lifestyle-related risk factors is extremely important not only in patients but also in "healthy" individuals at high cardiovascular risk (4). As it is not possible to influence biological risk factors (gender, age and family history), primary health care physicians are supposed to focus on lifestyle risk factors, including unhealthy diet, physical inactivity, smoking, risky alcohol consumption and overweight (5). These are the most important issues that should be addressed through public health policy and medical interventions (1).

Nowadays general practitioners (GPs) and family physicians provide services to autonomous individuals across the fields of prevention, diagnosis, cure, care and palliation, using and integrating the sciences of biomedicine, medical psychology and medical sociology. Two-thirds of the population in most European countries visit their GP at least once a year, and 90%

at least once in five years. GPs are therefore in an excellent position to administer age- and sex-specific preventive and health promotion packages. These services are provided either in an opportunistic manner, i.e. when patients attend for any reason, or as planned services, i.e. as a part of scheduled, evidence-based preventive programmes (4).

However, there are differences in the structure and organization of practice in European countries, which vary largely in the degree of involvement of general practitioners in preventive activities. In Slovenia the Countrywide Integrated Non-communicable Disease Intervention (CINDI) programme has been adopted as one of the strategies targeted at lifestyle modification (5-9). It was developed by the World Health Organization (WHO) with the aim of preventing chronic diseases. It focuses on risk factors that contribute to the development of chronic non-communicable diseases. By assessing risk factors in the targeted population using standardized methodology the global cardiovascular risk is being modified. Each member country has to determine the prevalence of risk factors in the population of a given geographical area, assess the cardiovascular risk and intervene according to the risk (4). Public health authorities participated in the intervention by launching national information campaigns, by supporting healthy lifestyle modifications, using political interventions, such as strict legislation against smoking in public places and smoking advertising, along with campaign guidance to achieve and maintain smoking cessation in the population (4).

Significant changes have occurred in Slovenia in the field of prevention and health promotion over the past ten years. A group of enthusiastic general practitioners in the Ljubljana Health Centre joined the WHO-CINDI programme 15 years ago (5-7). Three survey studies on a random sample of adult Ljubljana inhabitants were performed to determine the prevalence of risk factors and assess the global cardiovascular risk. As the global risk levels were high, interventions had to be introduced following the WHO-CINDI directive (10). Health education programmes for physicians and nurses were designed

and implemented. Interventions against unhealthy behavior patterns were initiated in 1992; they were targeted both at the entire country's population (nearly 2 million), and at individual high-risk patients (8).

In recent years health promotion has emerged as an increasingly important segment of primary health care in Slovenia (6 - 9). This trend is part of a movement towards the integration of public health responsibilities into general practice. Primary health care teams had to assume new strategic responsibilities. Responsibility for maintaining and promoting the health of patients on the practice list was entrusted to GPs by the 2001 GPs' contract (9). It incorporates the following elements:

- population monitoring through health surveillance;
- regular health checks for adults; and
- setting up of health promotion centres.

In spite of all these facts, the provision of disease prevention and health promotion services posed considerable difficulties to the practicing physicians in Slovenia. The results of the study clearly confirm considerable disparity between the GP tutors' knowledge and practice of preventive services.

The objective of this cross-sectional epidemiological study was to explore the knowledge of and attitudes of Slovene GPs towards the implementation of evidence-based health promotion and disease prevention recommendations in primary care, to describe GPs' perceived barriers to implementing these recommendations, and to assess the participants' self-reported health behavior.

Methods

Participants

The data were collected by a postal survey as part of the 2000/2001 EUROPREV (European Network for Prevention and Health Promotion in Family Medicine and General Practice) survey (11). The required sample size per country was calculated by EUROPREV. The survey instrument and an addressed stamped return envelope were mailed to 100 Slovene GPs, tutors in general practice/family medicine from June to August 2000.

GPs for the survey were recruited by the Department of Family Medicine of the Faculty of Medicine, University of Ljubljana. To become GP/FM tutors in Slovenia, physicians are required to be specialists in GP/FM and must have participated at least once in two years in the annual workshop organized by the Department of Family Medicine and European Academy of Teachers in GP/FM (EURACT).

Method

The EUROPREV network developed and pre-tested a questionnaire, which was piloted with ten GPs, using a pre-paid addressed envelope. For the Slovene survey, the original EUROPREV questionnaire was translated from English to Slovene, and adapted for use in Slovenia. It consisted of four sections. The first section had questions designed to collect demographic and professional data on participants (11).

The second part of the questionnaire contained two clinical scenarios: one presenting a 52-year-old male, and another a 57-year-old female, who visited their GP with a trivial health problem and had had no previous check-ups or tests. GPs were asked to mark:

- a) preventive activities that should be performed, and
- b) preventive activities that they actually perform in their clinical practice.

The third section of the questionnaire asked GPs' about their perception of the delivery of preventive and health promotion services, and about barriers to the implementation of these programmes.

The fourth section had questions on the participants' health behaviours.

Statistical analysis

All the returned questionnaires were sent back to the co-coordinating and data management centre of the EUROPREV headquarters in Barcelona, Spain, to assure centralised data entry and analysis. The mean and standard deviations for continuous variables and percentages for categorical variables were computed. All analyses were done using the STATA programme (version 5.0).

Results

The response rate in Slovenia survey was 55.0%. Sex distribution of respondents (Table 1) did not differ considerably from that in the total population in Slovenia (12). The mean age of participating physicians was 46 to 59 years (SD \pm 6.43). Their professional characteristics are shown in Table 2.

Responses to both scenarios disclosed a disparity between GPs' knowledge of and practice towards risk factors, with the exception of blood pressure control (Table 3), as well as a difference in their attitudes towards male and female patients. Nearly all participants checked blood pressure in the male scenario, but only two-thirds did so in the female case vignette. The same proportion of respondents checked serum cholesterol and blood glucose in both case

Table 1. *Gender characteristics of the Slovene population and tutors-respondents (N=55).*
 Tabela 1. *Prebivalci Slovenije in anketirani tutorji po spolu (N=55).*

<i>Population of Slovenia / Prebivalci Slovenije 31.12.1999</i>	<i>%</i>	<i>Respondents / Anketiranci 1. 9. 2000</i>	<i>%</i>
Men / Moški	49	Men / Moški	43,6
Women / Ženske	51	Women / Ženske	56,4

Table 2. *Professional characteristics (in %) of Slovene tutors-respondents (N=55).*
 Tabela 2. *Poklicne značilnosti anketiranih slovenskih tutorjev (v %) (N=55).*

<i>Characteristics / Značilnosti</i>	<i>%</i>
Urban practice / Delo v mestu	40,7
Rural practice / Delo na podeželju	25,9
Mixed / Mešano	33,3
Employed / Zaposleni	65,5
Private («solo» practice) / Zasebniki	25,5
Other / Drugo	9,0
Public health care institution / Javnozdravstvena ustanova	67,3
Private health care institution / Zasebna zdravstvena ustanova	32,7
Postgraduate teaching activities / Podiplomski pouk	94,4

vignettes. In the male scenario, screening for colon cancer was reported by half of the participants, and in the female scenario by 11%. The use of chest X-ray as a screening test in male patients was reported by 29% of GPs. Only one third of GPs inquired about their patients' immunisation status, but more of them were interested in their patients' health behaviour: nearly all checked smoking, and three-thirds advised smokers to quit. Alcohol intake in men was not strictly checked; two-thirds of GPs advised risky drinkers to reduce alcohol consumption or stop drinking. In male patients, body weight and height were measured by less than one half of the participants, and in females by more than one half; overweight patients were advised to lose weight. Physical activity was inquired after by three-fourths of GPs; two thirds of them also

advised physically inactive patients to change their lifestyle. Screening for cervical cancer was recommended by one half of GPs.

Table 4 shows the perceived causes of poor prevention and health promotion, focusing on the differences in the perceived barriers. The EUROPREV study showed that more than half of Slovene GP tutors found it difficult to perform preventive check-ups and cardiovascular risk assessment in their patients, and the reportedly felt minimally effective, or ineffective in helping patients change unhealthy lifestyles, especially in advising them to take up regular physical activity. The main barrier reported was heavy workload and lack of time (Table 5).

GPs' self-reported state of health and health-related habits are shown in Table 6.

Table 3. Responses of Slovene tutors-respondents (N=55) to the male and female clinical scenario.

Tabela 3. Odgovori sodelujočih slovenskih tutorjev na vprašanja v ženskem in moškem kliničnem scenariju (N=55).

Risk factor assessment / Ocena dejavnikov tveganja	Male patient / Bolnik		Female patient / Bolnica	
	Should it be done (yes as %) / Je to treba storiti? (da v %)	Do I do it? (yes as %) / Ali to storim? (da v %)	Should it be done (yes as %) / Je to treba storiti? (da v %)	Do I do it? (yes as %) / Ali to storim? (da v %)
Measure cholesterol level / Določanje ravni holesterola	87,3	74,6	87,3	72,7
Measure blood pressure / Merjenje krvnega tlaka	96,4	94,6	98,2	89,1
Measure glucose level / Določanje ravni sladkorja	90,9	76,4	96,4	74,6
Inquire on smoking Advise smokers to quit / Vprašanja o kajenju Nasvet bolniku naj opusti kajenje	100,0 100,0	95,4 72,7	100,0 96,4	86,7 74,6
Inquire on alcohol consumption Vprašanja o pitju alkohola Advice risky drinkers to reduce consumption	98,2 96,4	74,4 63,6	100,0 96,4	68,2 63,6
Svetovanje tveganim pivcem, naj omejijo pitje alkohola				
BMI measurement / Izračun indeksa telesne mase	89,1	58,2	94,6	61,8
Diet advice / Prehransko svetovanje	96,4	70,9	98,2	72,7
Inquire on physical activity / Vprašanja o telesni dejavnosti	96,3	74,4	96,3	71,1
Advice sedentary patients to Increase activity / Svetovanje bolnikom, ki pretežno sedijo, naj bodo bolj telesno dejavni	94,6	61,8	94,6	63,6
Tetanus immunization / Cepljenje proti tetanusu	54,6	32,7	65,5	38,2
Screening for colon cancer - occult blood test colonoscopy	47,2 13,2	18,8 6,4	42,3 9,8	11,1 6,7
Presejanje za raka debelega črevesa - pregled blata na okultno krvavitev Koloskopija				
Screening for breast cancer - mammography / Presejalni test za raka dojk - mamografija			78,2	54,6
Screening for cervical cancer with Pap smear / Presejalni test za raka materničnega vratu- odvzem brisa Pap			78,2	50,9
Prostate cancer screening (RDE /PSA) / Presejalni test za raka prostate (RDE /PSA)	78,2	56,4		
Lung cancer screening (X ray) / Presejalni test za pljučnega raka - rentgensko slikanje	38,2	29,1		

BMI: body mass index / indeks telesne mase

RDE: rectal digital examination / digitalna rektalna preiskava

PSA: prostate specific antigen / specifični prostatični antigen

Table 4. *Perceptions of Slovene tutors-respondents (N=55) of their implementation of disease prevention and health promotion.*

Tabela 4. *Kaj menijo anketirani tutorji (N=55) o svojem izvajanju dejavnosti za preprečevanje bolezni in promocijo zdravja.*

<i>Activity / Dejavnost</i>	<i>Yes as % / Da v %</i>
Carrying-out prevention and health promotion is difficult / Preventivne dejavnosti in dejavnosti za krepitev zdravja so zahtevna naloga	61,8 %
Minimally effective or ineffective in helping patients reduce tobacco use / Minimalna učinkovitost oz. neučinkovitost pri prizadevanjih za omejevanje kajenja pri bolnikih	41,8%
Minimally effective or ineffective in helping patients reduce alcohol consumption / Minimalna učinkovitost oz. neučinkovitost pri prizadevanjih za zmanjševanje pitja alkohola pri bolnikih	56,4%
Minimally effective or ineffective in helping patients achieve or maintain normal weigh / Minimalna učinkovitost oz. neučinkovitost pri prizadevanjih za pridobitev oz.vzdrževanje normalne telesne teže pri bolnikih	54,6%
Minimally effective or ineffective in helping patients practice regular physical exercise / Minimalna učinkovitost oz.neučinkovitost pri prizadevanjih za povečanje telesne dejavnosti pri bolnikih	25,9%

Table 5. *Slovene tutors-respondents' (N=55) perceptions of barriers to implementing health promotion and preventive activities (non-exclusive answers).*

Tabela 5. *Kaj menijo anketirani slovenski tutorji o ovirah pri izvajanju preventivnih dejavnosti in dejavnosti za krepitev zdravja (N=55).*

<i>Barrier / Ovira</i>	<i>Yes as % / Da v %</i>
Heavy work load and lack of time / Velike delovne obremenitve in pomanjkanje časa	92,7
No reimbursement / Neustrezno nagrajevanje	34,6
Patients' accessibility / Dostopnost bolnikov	20,0
Lack of consensus (discrepancies in the recommendations) / Neenotnost in neuskklajenost priporočil	20,0
Patients' doubts about effectiveness / Bolnikovi dvomi o učinkovitosti	14,6
Lack of clarity on which professional in primary care is responsible / Nejasnost pri opredelitvi odgovornosti v primarnem zdravstvu	25,5
Insufficient personal training in prevention and health promotion / Nezadostna usposobljenost za preventivno dejavnost in krepitev zdravja	10,1

Table 6. Slovene tutors'-respondents' (N=55) state of health and health behaviour.

Tabela 6. Zdravstveno stanje in zdravstvene navade anketiranih slovenskih tutorjev (N=55).

Risk factor / Dejavnik tveganja	Yes as % / Da v %
Elevated serum cholesterol / Povišana raven holesterola	40,0%
High blood pressure (BP) / Povišan krvni tlak	21,8%
Smoking cigarettes / Kajenje - cigarete	9,1%
Cigars / Cigare	1,8%
Risky alcohol use / Tvegano pitje alkohola	3,7 %
Regular physical activity in leisure time / Redna telesna dejavnost v prostem času	60,0%
Immunised	
Influenza / Cepljenje proti gripi	49,1%
Hepatitis B / proti hepatitisu B	69,1%
Tetanus / proti tetanusu	80,0%
High risk of colon cancer / Povečano tveganje za raka debelega črevesa	9,1%
Screened for colon cancer / Opravljen presejalni test za raka debelega črevesa	10,7%
MALES / MOŠKI	
Prostate symptoms / Težave s prostato	3,5%
Screened for prostate cancer-/ Opravljen pregled za raka prostate	
digital rectal examination PSA / digitalni rektalni pregled	25,0%
PSA	41,7%
FEMALES / ŽENSKE	
Breast cancer risk / Tveganje za raka dojke	16,1%
Mammography performed / Opravljena mamografija	34,6%
Cervical cancer risk / Tveganje za raka materničnega vratu	0,0%
Screened (PAP smear) / Odvzet bris po Papanicolauiu	8,1%

Legend: / Legenda

Risky alcohol drinking: > 2 units/day for male and > 1 unit for female participants / Tvegano pitje alkohola > 2 merici na dan za moške in > 1 merica za ženske

Regular physical activity: activity daily or two to three times a week. / Redna telesna dejavnost: dejavnost vsak dan ali dva - do trikrat na teden

Immunised: every year or only some years / Cepljeni: vsako leto ali le v nekaterih letih

Risk of colorectal cancer was considered to be increased in persons with tubular adenomas of >1 cm, villous or tubulovillous adenomas of any size, hereditary gastrointestinal polyposis syndromes, personal or familial history (first degree) of colorectal cancer, endometrial cancer, ovarian cancer, ulcerative colitis of more than 8-10 years of evolution for extensive forms (pancolitis) or more than 15 years of evolution in ulcerative colitis of the left colon /

Povečano tveganje za kolorektalnega raka: tubulni adenoma, večji kot 1 cm, vilozni ali tubulno-vilozni adenomi, ne glede na velikost, familiarna polipoza črevesa, osebna ali družinska anamneza kolorektalnega raka (1. stopnja), rak endometrija, rak jajčnikov, ulcerozni kolitis, ki se je razvijal več kot 8-10 let (pankolitis), ali več kot 15 let (ulcerozni kolitis levega dela debelega črevesa)

Prostate cancer screening: at least one screening test carried out / Presejanje za raka prostate: opravljen vsaj en presejalni test

Breast cancer risk: increased in persons with personal or familial (first degree) history of breast cancer (higher risk if it was bilateral or occurred before menopause), precocious menarchy (<12 years old), nulliparity, first pregnancy in advanced age (>30 years), late menopause (>55 years old), hormone replacement therapy, hormonal contraception, obesity, breast ionizing radiations, high alcohol consumption / Povečano tveganje za raka dojke: osebna ali družinska (po ženski liniji) anamneza raka dojke (tveganje je še večje pri raku na obeh dojkah in pri raku, ki se je razvil pred menopavzo; zgodnja menarha (pred 12. letom starosti), nuliparnost, prva nosečnost po 30. letu starosti, pozna menopavza (po 55. letu starosti), nadomestno hormonsko zdravljenje, hormonska kontracepcija, debelost, ionizirajoče sevanje, čezmerno pitje alkohola

Cervical cancer risk: increased with the following factors: tobacco use, low socioeconomic level, precocious sexuality, high number of sexual partners, human papilloma virus infection / Povečano tveganje za raka materničnega vratu: kajenje, slabe socialne in družbene razmere, zgodnja spolnost, veliko število spolnih partnerjev, okužba s papilloma virusom

Discussion

The extent to which people follow healthy lifestyles varies largely from one country to another (2, 13). EUROPREV is one of the networks, established to obtain and disseminate useful information provided by national associations and institutions to compare not only national health services, but also protocols and guidelines on the issue, and to run research projects, such as the survey described in this paper (11). The European network of GP colleges initiated specific research projects, such as the one involving more than 2000 GPs. As only 55 of the 100 invited Slovene GP tutors participated in our study, the results are not representative of the whole GPs population. The authors would therefore welcome information provided for this survey by other colleagues.

The survey respondents are likely to have a more favourable attitude to health promotion than the general GPs population, and as a result the results may have been overestimated because of bias.

It is difficult to compare our results with those obtained in other surveys because of different methods used.

The answers to the two clinical scenarios show that tutors are well aware of the importance of disease prevention and health promotion services, but that, in practice, they are less likely to provide them to patients presenting with most of the risk factors. One exception seems to be blood pressure measurement, most probably because it has become a routine procedure.

Answers to the female and male scenarios indicated that risk factors, except body mass index, were more frequently assessed in men than in women. The participating tutors obviously regarded risk factors in women as minor ones. Spanish authors (13), who evaluated preventive services in general practices, found similar results for counselling, but poorer results for cardiovascular risk assessment. Determining BMI in men was the most rarely reported procedure. This observation suggests that the

participating Slovene tutors consider weight, height and BMI measurements in men a waste of time, and regarded testing the success of dietary counselling on overweight and obese patients as a most ungratifying task. The measurements, however, were practised in female patients.

Questions about preventive activities that are either ineffective, such as screening for lung cancer, or not evidence-based, such as screening for prostate cancer, were purposefully included in the questionnaire. Surprisingly, nearly 40% of the survey

participants answered they performed these tests in male patients, although no current guideline recommends routine screening for lung cancer (with either chest x-rays or sputum cytology) of either the general population or of smokers (14). As concerns prostate cancer screening, there is no clear evidence that survival can be improved by early detection and treatment of the disease. Routine screening for prostate cancer remains a controversial issue, with arguments against and in favour of the test (11). Slovene medical practice guidelines state that screening programmes should be proven to be beneficial before being implemented (8).

Among the barriers to disease prevention and health promotion implementation, the two leading causes reported by the 55 participating GP tutors included heavy workload/lack of time and no reimbursement. These were also two of the most important barriers identified by 2,300 GPs participating in a EUROPREV survey (11).

More than half of the GPs were sceptical about their ability to help patients reduce risky alcohol drinking, or achieve/maintain normal weight. Other surveys have yielded similar results: Dutch researchers state that counselling in general practice is often targeted at the wrong people, at the wrong time. Improvements can possibly be achieved by making registration of lifestyle parameters in patient records common practice, and by simply asking patients where they stand in respect to lifestyle change (15). Australian GPs compared the efficacy of brief one-minute counseling and counseling lasting ten minutes: in the latter the efficacy increased from 10% to 16% (16). Kreuter realised that successful disease prevention programmes in primary care settings will systematically detect patients who need preventive services, instruct them in the necessity of undertaking preventive activities, and use automated data systems to support and reinforce physician advice and preventive services. Physician advice that primes patients to act on subsequent health information will play an important role in this disease prevention equation (17).

The study revealed that nearly half of the participating tutors were at high cardiovascular risk; 40% of them were not physically active on a regular basis, and 40% had high serum cholesterol levels. The fact is, however, that the study was conducted during a very busy "transition" period, characterised by radical political and social changes accompanying the transition from state socialism to capitalism in 1991. All those perturbances caused immense changes in lifestyles of the population,

and had profound implications for patients' and physicians' attitudes towards health (18).

Possible limitations of the study were that the questionnaire was too long, that it may have been subject to misinterpretation by the participants and was influenced by changing perceptions of disease prevention and health promotion activities. This seems to have been the reason for low response rate, which is also one of the limitations of the study.

On the other hand, the value of the study is that it provided important information about everyday practice of Slovene family medicine tutors. The results of this study stress the need for motivating GP tutors to provide preventive and health promotion activities in line with the adopted guidelines and last evidence. Under the 2002 regulations Slovene general practitioners are required to carry out preventive check-ups in 20% of their adult population, therefore new data are expected to be disclosed by repeat study. Other issues relating to this area should be addressed by the study, such as GPs' workload and possible changes in GPs' attitudes towards their own health behaviour.

Conclusions

1. The participating family medicine tutors feel minimally effective or ineffective in tackling most risk factors: i.e. in helping patients reduce tobacco use, alcohol consumption and achieve or maintain normal weight.
2. They do not give enough attention to their own health, health-related behavior and screening.
3. Slovene GPs should become more motivated to carry out disease prevention and health promotion activities.
4. Repeat study should be conducted in a few years' time.

Acknowledgements

I express my gratitude to all GPs who answered the survey questionnaire and made this study possible in spite of their workload and summer holidays. GP tutors have always been the cornerstone of Slovene family medicine.

I am grateful to IVAN ERŽEN MD, MSc, for his valuable remarks and corrections.

I wish to thank the EUROPREV network for the study protocol and statistical analysis.

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DETECTION AND MANAGEMENT OF DEPRESSION IN SLOVENE FAMILY PRACTICE. A CASE VIGNETTE STUDY

UGOTAVLJANJE IN ZDRAVLJENJE DEPRESIJE V SLOVENSKI DRUŽINSKI MEDICINI. VINJETA S SIMULACIJO PRIMERA

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Prispelo: 30. 3. 2005 - Sprejeto: 15. 1. 2006

Original scientific article
UDC 616.89(497.4)

Abstract

Objective: Slovenia is a country with a very high suicide rate, and depression is one of the predisposing factors leading to it. Many studies have shown that depression tends to go unrecognised and undertreated in family medicine. Little is known about the management of depression in Slovene family practice.

Method: A nation-wide study using a case vignette was undertaken to determine the strategies adopted by family physicians in the management of depression, and the factors that influence appropriate decision making. A total of 173 family physicians from a national list of 778 physicians working in family practice were approached to take part in the study.

Results: A response rate of 75.4% was achieved. Over 90% of Slovene family physicians recognised a mental health problem in the simulated patient. However, only 61% of them chose appropriate treatment in line with the set criteria. Interestingly, the prescribing strategies are more similar to the American than to the British data.

Conclusion: Slovene family physicians are very good at recognising a mental health problem, but less so in selecting the appropriate treatment strategies, which leaves a lot of room for improvement.

Key words: family practice, depression, treatment, questionnaires, Slovenia

Izvirni znanstveni članek
UDK 616.89(497.4)

Izvleček

Namen: Slovenija ima visoko stopnjo umrljivosti zaradi samomorov, pri čemer je depresija lahko eden vzročnih dejavnikov. Številne raziskave ugotavljajo, da depresivne bolnike v splošnih ambulantah pogosto spregledamo in jih ne zdravimo ustrezno.

Metode: Na naključnem vzorcu slovenskih zdravnikov družinske medicine smo preverili ukrepanje ob depresivnem bolniku in odločitve glede zdravljenja. Preverili smo tudi dejavnike, ki vplivajo na razlike. Uporabili smo vinjeto s primerom bolnice. K sodelovanju v raziskavi smo povabili naključen vzorec 173 zdravnikov splošne medicine izmed 778 zdravnikov, kolikor jih je bilo v bazi Zavoda za zdravstveno zavarovanje Slovenije.

Rezultati: Odgovorilo je 75,4% anketiranih zdravnikov. Več kot 90% slovenskih zdravnikov je prepoznalo duševno motnjo pri simuliranem bolniku. Vendar se je pa le 61% zdravnikov odločilo za pravilno ukrepanje. Slog predpisovanja antidepressivov je bolj podoben ameriškim kot britanskim zdravnikom.

Sklepi: Slovenski družinski zdravniki so zelo uspešni pri prepoznavanju duševne motnje, a dosti manj pri izbiri ustreznega zdravljenja, kar daje veliko možnosti za izboljšave v prihodnje.

Ključne besede: družinska medicina, depresija, zdravljenje, ankete, Slovenija

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Introduction

Depression is a common health problem in the population and a considerable burden for the society. The point prevalence of depressive symptoms is estimated at 13-20% and the prevalence of depressive illness at 2-5% (1). The prevalence of depression among people aged over 65 in the general population is 15% (2). Depression is also a frequent cause of office visits. It has been estimated that 5-10% of the population consult family physicians because of underlying depressive illness in one year (1), and up to 25% of people aged over 65 years (2).

Unrecognised and untreated depression is associated with increased suicide rates, and adds to the burden of morbidity associated with physical conditions such as cancer, ischemic heart disease and arthritis (3-5). Thanks to recent advances in therapy, many depressive patients can be effectively managed by their family physicians (6-8). Continuity of care in family practice presents a good opportunity for the detection and effective treatment of depressed patients (9, 10). In spite of that many depressed patients probably still go unrecognised, untreated or inadequately treated (6, 11, 12). Howe found that only 44% of the depressed patients were appropriately diagnosed in general practice (13). Kessler and co-workers reported that only 36% of depressed patients were recognised by the family physicians (14).

The observed variation in the management of depression in family practice poses additional problems (15, 16). Routine mortality statistics show that suicide rates in Slovenia are among the highest in Europe, and that mental health services in general face many difficulties in meeting the challenge posed by the mental health needs of the population (17, 18). These findings and other data suggest that depression is one of the challenging problems, which is inadequately addressed in primary care (19). We undertook a national survey to assess the detection and management of depression by family physicians (20).

Material and Methods

Sample

A cross-sectional study was conducted on a representative sample of Slovene family physicians. A random sample of 198 family physicians from the national list of 778 (25.5%) physicians working in family

practice were asked to participate: 16 were not available because they had changed their careers, six were retired and three were on a maternity leave. The remaining 173 participants were either approached by telephone by one of the researchers (JC) (100 participants), or personally by tutors affiliated to the Department of Family Medicine, University of Ljubljana (73 participants). The purpose of the study was explained to them, and only two refused to participate. The age and gender of the participants, the type of practice (public service versus private practice) and the regional distribution of the 171 practices were matched with the national data. The sample did not differ from the national data.

Questionnaire

The questionnaire had two sections:

- Questions about the characteristics of the physician and his/her practice (demographic characteristics, working hours per week, hours of CME yearly, number of inhabitants served by the office, training, years in the practice, type of practice (solo or group practice), number of patients on the list, number of patients seen daily, number of home visits weekly, number of phone calls daily, use of appointment system, and availability of the psychiatric services)
- A case vignette describing an elderly woman suffering from depression, which was pre-tested in a pilot study and checked by three referee psychiatrists, was included in the questionnaire (see Appendix). The participants were asked to respond to the following yes/no and consecutive open-ended questions on disease management:
 1. Would you refer the patient to a specialist? (y/n) If yes, to which one?
 2. Would you prescribe medicine(s)? If yes, which one(s)?
 3. Would you give the patient any counselling/advice? If yes, what advice?
 4. Would you make an appointment arrangement for a follow-up visit in your office? If yes, in how many days?

Statistical Analysis

The data were entered into the computer and analysed using SPSS for Windows software. Descriptive statistics were calculated. The Student t-test and chi square test were used according to the type of variables (where needed, Fisher's Exact Test was calculated). The following decisions were required for the treatment

to be considered adequate, i.e. appropriate measure:

- Choosing an antidepressant and/or referring the patient to the psychiatrist
- Scheduling a follow-up appointment
- Adding an anxiolytic drug to the antidepressant was regarded as justified but not mandatory

Those, who did not follow these decisions, were regarded as providing inappropriate care or failing to recognise depression.

For group comparisons, the participating family physicians were assigned to categories according to the size of their patient list (cut point 1,500 persons on the list, i.e. the average list size in Slovenia) and part/full time working pattern.

Results

We received 129 (75.4%) out of the 171 completed questionnaires. The analysis of non-respondents (42%) did not show any significant differences in age, gender, regional distribution or training of the participating family physicians. Eighty (46.6%) respondents were males, the mean age was 44.9 years; 55 (42.6%) participants had completed training, the mean time elapsed since training was 11 years. The participants spent on average eight days a year on Continuing Medical Education; the average time in practice was 16 years; the majority, i.e. 109 (63.8%) shared their premises in a group practice. The average working time was 39 hours per week, and an average of 45 patients were seen in the office daily. Doctors reported making an average of nine patient-related phone calls per day, and five home visits per

week. The average list size was 1,866 patients. Participation in out of hours service for an average of 15 hours per week (on-call service included) was reported by 123 (72.1%) respondents; 79 (46.5%) practised an appointment system; 118 (68.8%) claimed that their patients had to wait more than a week for an appointment with a psychiatrist.

Management decisions

Twenty-six (20.2%) family physicians decided to refer their patient to a psychiatrist after the first contact, yet the majority started their own therapy (Table 1). A drug therapy was prescribed by 117 (90.6%) family physicians. A wide variety of therapeutic approaches were used. Thirty (25.9%) physicians prescribed one of the following combinations: 19 (16.4%) prescribed antidepressants and anxiolytics, five (4.3%) a combination of antidepressants and hypnotics, and six (5.2%) a combination of anxiolytics and hypnotics, while 87 (74.1%) gave an antidepressant as a single prescription. Only 12 (9.4%) of the participating physicians did not prescribe any medication at all. All family physicians gave advice to their patients; they most commonly encouraged them to re-establish normal social contacts, and increase leisure-time activity to involve more family visits and country walks. The majority of family physicians (114; 88.4%) scheduled a follow-up visit in two weeks' time on average, at the earliest after three days, and at the latest after two months; the rest of them advised the patient to attend when feeling the necessity to come. A total of 118 (91.5%) participating family physicians seemed to have recognised the nature of the patient's

Table 1. *Drugs prescribed for the depressed woman from the case vignette.*
As a quarter of the doctors prescribed more than one drug *N* is greater than 129.

Tabela 1. *Zdravila, ki so jih zdravniki predpisali depresivni bolnici, predstavljeni v vinjeti.*
Četrtnina zdravnikov je predpisala več zdravil, zato je *N* večji od 129.

Drugs prescribed / Predpisana zdravila	Name (n) / Ime	N
Antidepressants / Antidepresivi	<i>fluoxetine (42), sertraline (8), fluvoxamine (1), tianeptine (4), moclobemide (1), maprotiline (6), amitriptyline (1), doxepin (1), trazodone (1)</i>	65
Anxiolytics / Anksiolitiki	<i>alprazolam (44), bromazepam (17), medazepam (3), diazepam (2), lorazepam (2), prazepam (1), oxazepam (1)</i>	70
Hypnotics / Hipnotiki	<i>zoldipem (14), flurazepam (3), nitrazepam (1),</i>	18
Others / Drugi	<i>sulpiride (2), perazine (1), St. John's wort (1), tramadol (2), diclofenac (1), meloxicam (1), etidronate (1), Ca-C 500 (1), heparin gel (1)</i>	10

mental problem. The right decision was made in 79 (61.2%) of the cases.

Family physicians' characteristics which correlate with their decision-making

The following correlations were found:

- Family physicians working full time prescribed antidepressants more often than family physicians working on a part-time basis ($p=0.01$), and were more likely to make a correct diagnosis ($p=0.02$).
- Family physicians working more out of hours favoured antidepressant treatment ($p=0.03$).
- Family physicians with patient lists exceeding 1,500 persons prescribed a drug therapy more often than family physicians with less than 1,500 persons on the list ($p=0.03$). Family physicians with patient lists exceeding 1,500 persons were also less likely to take inappropriate decisions concerning depression management ($p=0.05$).
- Family physicians in towns with more than 10,000 inhabitants ($p=0.04$) take inappropriate measures less often
- Family physicians who prescribed drug treatment more frequently were on average six years younger than those who did not prescribe it ($p=0.03$).
- Family physicians who did not prescribe drugs recommended a follow-up visit on average four days earlier than those who did prescribe a drug therapy ($p=0.09$).

Discussion

Data on the process of outpatient care are difficult to collect from everyday practice. This is especially true for psychosocial problems, such as depression. Decision-making processes are almost impossible to track down from medical records, and direct observations by videotaping or use of simulated patients have become a gold standard for audit. However, these methods are time-consuming, expensive and cannot be used on a large scale. In nationwide studies case vignettes are the method of choice for a limited insight into the decision-making and for quality assessment (21). Case vignettes offer standardised "patients" for whom the diagnosis and the treatment strategies are known. The method has proven equally effective as that of case simulation (21, 22) and the approach has been applied to research of depression in general practice (15, 23). Even though the vignette scenario may not reflect an everyday

situation encountered by the participating physicians in the primary care setting, the observation of Rethans and Saebu that performance in real practice is consistent with the written case scenarios (24), as well as the results of a comparison of videotaped consultations and written scenarios by Braspenning and Sergeant (25), have reassured us that our results are indeed valid. Nevertheless, the interpretation of the data must be undertaken with caution, since the actual situation might be even worse (e.g. the time pressure factor is excluded).

The main strength of the study is its high response rate and the representativeness of the sample. To our knowledge, this is also the first study using a case vignettes scenario for assessing primary care physicians' performance in mental health in Slovenia, and is one of a very few of that type (25).

In our study the recognition rates for mental health problems (91.5%) and recognition rates for depression (61.2%) in general practice were relatively high compared to the findings of Howe, who found that only 44% of the depressed were diagnosed for depression in general practice (13), or compared to the results of Kessler and co-workers who found only 36% of cases detected (14). Although the physicians were not informed about the kind of patients/diseases involved in the study when invited to participate, the result might suggest a bias in the methodology, since the physicians were aware of the simulated situation.

It is well recognised that the spectrum of depression in primary care may be different from that seen in specialist psychiatry (12), and our case vignette has tried to simulate this difference (14). Nevertheless, the high rates of inappropriate prescribing of anxiolytic drugs as a single therapy might reflect the fact that the patient was recognised as having a mild depression, in which case the relief of symptoms is not so urgent (26). It can be assumed that the intention to treat was based on the severity of the depression evaluated by the physician, as found by (27) Dorwick and Buchan.

One fifth of the physicians decided to refer the patient to the psychiatrist, which is not in line with the recommendations that primary care patients with mild depression should be treated with antidepressants (28-30).

Follow-up instituted in our study by the participating physicians can help them adjust treatment regimes to the assessed severity of the depression, which allows us to believe that at some point in future antidepressants might be prescribed or patient referred

to the psychiatrist (27, 28, 31). A series of follow-up visits indicates a continuing interest in the patient which has a therapeutic value in its own right. Outcomes can be improved by using some of the psychological strategies of family physicians which have proven beneficial in the treatment of depression, either as a single method or in combination with antidepressants (8).

Another important finding of our study is the shift in the prescribing habits of family physicians from classic tricyclic antidepressants to new SSRI antidepressants, providing valuable information about early adoption of new therapeutic strategies. This offers a good opportunity for planning changes in depression management patterns used by family physicians. Nearly 90% of the prescribed antidepressants were from the group of new-generation antidepressant drugs, which are associated with fewer side effects, better tolerability and are less likely to be lethal. It seems that the knowledge of the therapeutic possibilities of the new drugs is very high and that it is closer to the American (32) than to the British prescribing patterns (33).

It is difficult to explain why family physicians in towns reported fewer inappropriate measures, and more detailed research is needed to clarify this finding. Family physicians in urban settings are more often organised in groups, which may influence their decision making. Another explanation may be that doctors practising in rural areas know the families better, and place more emphasis on non-drug therapies, such as the provision of psychological support.

It is difficult to explain why younger family physicians were more likely to prescribe drug treatment. We can hypothesise that older doctors trust more the above mentioned non-drug therapies.

The participating family physicians were relatively good at diagnosing depression in the case vignette. However, the evidence from routine statistical data suggests that depression is underestimated and undertreated in Slovenia. We believe that this is an important area for quality improvement. A causal relationship cannot be proved, yet we believe that these results are important to physicians who seek to improve their decision-making, and wish to promote self-evaluation and decrease the rate of non-optimal treatment decisions. For the same reason, the results provide valuable information to physicians' organisations and insurance companies seeking to offer further professional advice to physicians. Clinical practice guidelines on the management of depression have to be formulated, but

these must be accompanied by effective strategies for implementation.

Acknowledgements

The study was supported through a research grant from the Slovene Government grant No.

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Appendix

A 79-year-old unmarried, retired teacher visits you in your office. She lives alone in her own house, and raises a few hens. Ten years ago she underwent a radical left-side mastectomy for cancer. All follow-up examinations were normal and showed no progression of the disease. She suffers from mild osteoarthritis of the knees. Eight months ago she fell and is now afraid of leaving her house without assistance. The local Caritas association, where she had been very actively involved until this event, helps her with daily activities. She complains about fear, depressed mood and lack of joy because of constant worries. At her last visit, one month ago, she complained of sleeplessness, and was prescribed 5mg diazepam pills to be taken before sleep. She took the drugs only once, because of side-effects of nausea. She asks for some pills for the nerves. Physical examination revealed no abnormalities. Apart from diclofenac pills taken when the pain in her knees gets worse, she takes no other medication.

NAČRTOVANJE ŠTEVILA ZDRAVNIKOV IN ZOBOZDRAVNIKOV V ZDRAVSTVU - METODE, UPORABNOST, OMEJITVE IN ODVISNOSTI PHYSICIAN AND DENTIST WORKFORCE PLANNING METHODS, APPLICABILITY, LIMITATIONS AND DEPENDENCE

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Prispelo: 30. 3. 2005 - Sprejeto: 12. 1. 2006

Pregledni znanstveni članek
UDK 614.2

Izvleček

Izhodišča: Načrtovanje števila zdravnikov in zobozdravnikov je ena najtežjih oziroma najbolj zahtevnih nalog načrtovanja sistema zdravstvenega varstva. Najpogostejše ovire za učinkovito načrtovanje zdravstvenih delavcev so: pomanjkanje znanja o povpraševanju po zdravnikih, nepreverjenimi demografski podatki o zdravnikih, pomanjkanje podatkov o nezapolnjenih delovnih mestih, zastarelost podatkov o številu poklicev, slaba dostopnost zahtevanih podatkov.

Metode: S pomočjo podatkov o številu aktivnih zdravnikov in zobozdravnikov na podlagi zdravstvenostatističnih letopisov, ki jih izdaja Inštitut za varovanje zdravja Republike Slovenije, za leto 1980, 1990 in 2002 in razpisanih mest specializacij v prvem nacionalnem razpisu za leto 2003, smo poskusili napovedati gibanja o potrebah zdravnikov v prihodnjih letih ter ovrednotiti primernost dosedanjega načrtovanja zdravnikov.

Rezultati: Število aktivnih zdravnikov in zobozdravnikov skupaj se je od leta 1980 na 1990 povečalo za 1172 (32,3%) oz. je bil povprečni letni prirastek 3,2%. Od leta 1990 do leta 2002 se je zdravniški stan okreplil le za 655 (12%) novih zdravnikov in zobozdravnikov oz. je bil povprečni letni prirastek le 1%. Število diplomantov medicinske fakultete je od leta 1986 do 2002 zelo nihalo.

Zaključki: Različni izračuni kažejo, da v obstoječi mreži ob sedanjih provizoričnih normativih primanjkuje nekaj sto zdravnikov. Ocenili smo, da se bo vsaj nekaj let še nadaljeval trend zmanjševanja oskrbljenosti z zdravniki. Število aktivnih zdravnikov bodo v glavnem zagotavljali diplomanti Medicinske fakultete v Ljubljani in po nekaj letih tudi Medicinske fakultete v Mariboru, okrog 4-8% tudi z zaposlovanjem zdravnikov iz tujine. Trenutno stanje načrtovanja kadrov v zdravstvu je še daleč od optimalnega.

Ključne besede: zdravstveno varstvo, načrtovanje, zdravniki, zobozdravniki, diplomanti, specializanti, zaposlovanje, primerjalno raziskovanje

Review article
UDC 614.2

Abstract

Background: Doctor and dentist workforce planning is one of the most complex tasks in the health care system planning. Efficient planning of health professionals is most commonly hindered by lack of data regarding the demand for physicians and vacancies, by verified demographic data on physicians, by outdated information on the available number of professionals, and by difficulty to access the needed.

Methods: Using statistics on active physicians and dentists provided by health statistical yearbooks for 1980, 1990 and 2003, issued by the Institute of Public Health of the Republic of Slovenia, as well as data on specialist training posts from the first national tender in 2003 to predict need for physicians over the next years, and to evaluate the adequacy of previous predictions.

Results: Between 1980 and 1990, the total number of active physicians and dentists increased by 1172 (32.3%), the average annual increase being 3.2%. During the period 1990 - 2003, this number increased by 655 (12%), which

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brought the average annual increase down to less than 1%. It needs to be stressed that the annual number of medical graduates in Slovenia varied considerably during the period 1986 - 2003.

Conclusions: Several reliable calculations (using the current provisional workforce standards) showed that there is a net lack of a few hundred physicians in the public network. The trend of physician deficit is estimated to continue for at least several years. The demand will predominantly be met by employing medical and dental graduates from the Faculty of Medicine, University of Ljubljana, in a few years followed by the graduates from the newly opened Faculty of Medicine in Maribor. An estimated 4% - 8% of the total workforce will need to be imported from abroad. Current trained specialist workforce planning is still far from optimal.

Key words: health care, planning, physicians, dentists, graduates, residents, employment, comparative research

Uvod

Osnovna nosilca zdravstvene dejavnosti sta zdravnik in zobozdravnik. Določitev potrebnega števila zdravnikov in zobozdravnikov je ena najtežjih oziroma najbolj zahtevnih nalog načrtovanja sistema zdravstvenega varstva, ki ga opredeljujejo predvsem ekonomska moč države, oblike delovanja in izvajanja zdravstvene dejavnosti ter njena organiziranost. Vzrok za težave pri načrtovanju je predvsem v delno skupnih in delno nasprotujočih si interesih vseh vpletenih. Eno od osnovnih nasprotij je razmerje med povpraševanjem po zdravstvenih storitvah in njihovo ponudbo. V sistemih, kjer so tržni mehanizmi bolj vpeti v sistem zdravstvenega varstva, se je razvila velika ponudba storitev, ki je zahtevala tudi bistveno večje število zdravniškega osebja. Tržno usmerjeni zdravstveni sistemi, ki se na to razmerje največkrat sklicujejo, imajo v glavnem dva cilja - eden je v optimizaciji stroškov, drugi pa v ponudbi čimvečjega števila raznovrstnih storitev (slednje seveda niso nujno povezane z zadovoljevanjem dejanskih zdravstvenih potreb prebivalstva). Ta dva cilja sta si seveda v mnogočem v nasprotju. Trendi v stroških za zdravstveno varstvo v najdražjem sistemu, to je v ZDA, kažejo še vedno nadaljevano rast stroškov. Ta je sicer počasnejša kot v 80. in 90. letih, vendar skupni izdatki dosegajo že več kot 14% BDP. Vpliv števila zdravnikov in zaposlenega kadra na te izdatke je seveda ključnega pomena, saj po podatkih OECD³ njene članice za stroške dela porabijo med 70 in 75% vseh sredstev za zdravstvo. Pri tem je zanimivo, da so se ocene potreb po zdravnikih v ZDA v zadnjih desetih letih bistveno spremenile. Medtem ko je v času Clintonove reforme (1992-1994) še veljalo, da je zdravnikov preveč pri številu 250 zdravnikov na 100.000 prebivalcev⁴, danes ponovno govorijo o pomanjkanju zdravnikov. Tudi v evropskih državah smo priča podobnim procesom, saj se celo države z nekdanj velikimi presežki zdravnikov (npr.

Španija in Nemčija) danes srečujejo z relativno uravnoteženima ponudbo in povpraševanjem. Seveda pa je uveljavitev tržnih mehanizmov v zdravstvenem varstvu lahko le delna.

Vzroka sta predvsem dva. Bolniki kot uporabniki zdravstvenih storitev so samo delno strokovno informirani in ta informiranost ne more preseči neke njim dosegljive meje (t.i. informacijska asimetrija); drugi vzrok pa je v tem, da mora socialna država skrbeti za blažitve socialnih razlik, ki ne smejo vplivati na dostopnost osnovnih in najnujnejših storitev zdravstvenega varstva.

Še več, sistem zdravstvenega varstva naj bi blažil in manjšal razlike, do katerih prihaja zaradi različnega zdravstvenega stanja.

Načrtovanje zdravstvenih delavcev je zahtevna naloga, ki jo lahko ustrezno izpeljemo s pomočjo:

1. jasno postavljenih meril - demografskih, epidemioloških in storilnostnih
2. učinkovitih virov informacij z računalniško podprtimi zbirkami podatkov in;
3. z opredeljenimi normativi in standardi ter ustreznimi merili za vrednotenje storilnosti in kakovosti storitev.

Najpogostejše ovire pri kvantitativnih metodah so: pomanjkanje znanja o povpraševanju po zdravnikih, demografski podatki o zdravnikih niso preverjeni, ni podatkov o nezapolnjenih delovnih mestih, kot so porodniške odsotnosti in odsotnosti zaradi specializacij, časovno odmaknjeni podatki o številu zaposlenih v posameznem poklicu (potrebno je 18 do 20 mesecev za publiciranje), včasih je težko priti do zahtevanih podatkov. Potrebno je vzpostaviti jasna merila na ravni države in posamezne stroke, iz tega pa potem izhajajo usklajeni izračuni in podatki. Podatke je potrebno preverjati, nabor podatkov in način zbiranja pa mora biti natančno opredeljen (1). Pri tem je zelo pomembno tudi povezovanje med različnimi zbirkami podatkov, ki sicer služijo različnim namenom - IVZ, Zdravniška zbornica Slovenije in Zavod za zdravstveno zavarovanje Slovenije.

³OECD Database

⁴Iglehart

Število zdravnikov in njegovo določanje sta bili pomembni vprašanji tudi že v začetku prejšnjega stoletja, ko so primerjave med ZDA in evropskimi državami pokazale 25 do 50% večje relativno število zdravnikov v ZDA (ob že tedaj prisotni regionalno neenakomerni razporejenosti). Razmah zdravstvene dejavnosti je bil povezan tudi v Evropi z izrednim povečanjem števila zdravnikov, še posebej v 60. in v začetku 70. let. V Sloveniji se je število zdravnikov v obdobju med 1965 in 1984 povečalo s 1688 na 3596 oziroma za 113% (2, 3). V Sloveniji je bilo leta 1965 102 zdravnik na 100.000 prebivalcev, v ZDA pa 140 zdravnikov na 100.000 prebivalcev, leta 1984 pa so bile te številke 186 za Slovenijo in 220 za ZDA. Gospodarska kriza druge polovice 70. let in začetka 80. let je privedla do streznitve. V zadnjih letih so krizo financiranja sistemov zdravstvenega varstva spremljale tudi obsežnejše študije o potrebnem številu zdravnikov in zobozdravnikov. Omenjena poklica sta namreč ključna pri odločanju o storitvah in s tem o stroških v sistemu zdravstvenega varstva. Njihovo izobraževanje stane veliko denarja. Kot ugotavlja Fry, bo zdravnik od začetka študija pa do upokojitve povzročil National Health Service (NHS) približno 3 milijone angleških funtov stroškov, poleg tega pa bo s svojim strokovnim delom (zdravila, predpisana na recept, in napotitve bolnikov na specialistično in bolnišnično zdravljenje) sprožil še dodatne stroške, tako, da bo končni znesek že 12 milijonov angleških funtov (6). Vsekakor pa je povečanje stroškov za zdravstveno varstvo rezultanta številnih dejavnikov, kot so: napredek medicine, staranje prebivalstva in rast življenjskega standarda. Slednji povzročata več povpraševanja zaradi bolj storitvene usmeritve tako bolnikov kot zdravnikov, poleg tega pa večjo razvitost spremljajo tudi drugačne epidemiološke značilnosti (več kroničnih bolezni in bolezni zaradi staranja). Ključna determinanta, ki že vnaprej določa število zdravnikov v prihodnje, je število študentov medicine in stomatologije oziroma število diplomantov, saj velja, da vpisani študent tudi postane zdravnik oz. zobozdravnik. Osip pri tem študiju je namreč zelo majhen in navadno ne presega 5% (7). Tudi po dokončanju študija in ob strokovnem usposabljanju bo zdravnik ostal zvest svojemu poklicu, saj je dejanske fluktuacije malo. Zmogljivosti medicinskih fakultet so na primer v ZDA zelo velike, saj je poklic zdravnika in zobozdravnika še vedno finančno izredno privlačen. Te zmogljivosti so večinoma povezane z zmogljivostmi za podiplomsko usposabljanje, predvsem za specializacije. Ameriški model je odsev tržnih mehanizmov, je pa pri svojem delovanju močno odvisen

od dela mlajših zdravnikov (6). V socializiranih sistemih izobraževanja, kakršni so evropski, stanje zrcali drugačne oblike povpraševanja. Tako imata Španija ali Nemčija enega diplomanta na 4.000, medtem ko je Povprečno v Zahodni Evropi en diplomant medicine na 7.500 prebivalcev. To razmerje je v Sloveniji približno eden na 13.000 prebivalcev. Vendar pa hitre spremembe števila zdravnikov (tudi ob izkazanih in dokazanih potrebah) s povečanjem vpisa na fakulteto niso možne: prvič zato, ker hitre spremembe glede na trajanje študija tako ali tako niso možne, saj so učinki spremenjenega števila študentov in s tem števila diplomantov vidni šele 7 do 10 let po vpeljavi sprememb; drugič pa zato, ker je financiranje fakultet povezano s številom vpisanih študentov. V ZDA je v zadnjih letih posebej zanimiva zahteva, da mora načrtovanje ponudbe zdravnikov ostati jasna dejavnost javnega sektorja, saj je le na ta način možno zagotoviti enakomerno preskrbljenost prebivalstva (8). Po drugi strani pa v večini evropskih držav in v Kanadi določajo število zdravnikov s pomočjo državnih odločitev (9). Po podatkih za leto 2002/2003 je v bilo v Evropski uniji (EU) skupaj 1,37 milijona zdravnikov. (10)

Večinoma se razviti zdravstveni sistemi še vedno zatekajo k načrtovanju na podlagi demografskih podatkov o prebivalstvu in populaciji zdravnikov in zobozdravnikov, v bistveno manjši meri pa na podlagi storilnostnih meril. Kot je pokazal tudi Reinhardt (11), je sicer možno razviti kompleksne modele za vključevanje zelo različnih parametrov, ki pa se na koncu omejujejo po eni strani z razpoložljivostjo in dostopnostjo teh podatkov, po drugi strani pa z njihovo kakovostjo.

Namen in cilji

Namen študije je bil pregledno prikazati ključne elemente, ki vplivajo na način načrtovanja zdravniške in zobozdravniške populacije, poiskati zakonske osnove za planiranje kadrov v zdravstveni dejavnosti, strokovne osnove, iz katerih naj bi planiranje izhajalo, ter se seznaniti z metodami planiranja zdravstvene dejavnosti. Ob tem smo poiskali podatke za oceno demografskih gibanj zdravniške populacije in analizo demografska gibanja med zdravniki in zobozdravniki. Na ta način naj bi pomagali presoditi tudi umestnost števila sedanjega vpisa na Medicinsko fakulteto v Ljubljani in Mariboru ter potrebe po enostavnem nadomeščanju teh dveh poklicev zaradi demografskih značilnosti obeh populacij. Nismo pa nameravali upoštevati še vseh drugih elementov, ki seveda sodijo

v integralne izračune potreb po zdravnikih, kot so epidemiološke značilnosti prebivalstva, njegova zbolewnost in umrljivost ter pričakovanja prebivalcev glede dostopnosti in glede obsega storitev zdravstvenega varstva in storilnostni dejavniki za vrednotenje dela pri zdravnikih in zobozdravnikih.

Material in metode

Za študijo smo zbrali vhodne podatke o številu aktivnih zdravnikov in zobozdravnikov ter številu diplomantov medicine in stomatologije na podlagi zdravstvenostatističnih letopisov, ki jih izdaja Inštitut za varovanje zdravja Republike Slovenije (IVZ RS), za leto 1980, 1990 in 2002 (Tabela 1). Pri analizi gibanja števila zdravnikov v zadnjih desetih letih smo uporabili statistične podatke, ki jih je zbiral Inštitut za varovanje zdravja, pred tem pa Univerzitetni zavod za zdravstveno in socialno varstvo (UZZSV). IVZ je od leta 1993 zasnoval evidence na podlagi podatkov iz Baze podatkov izvajalcev zdravstvene dejavnosti, pred tem pa UZZSV na podlagi Evidence zdravstvenih delavcev. Obe bazi sta temeljni nacionalni zbirki za zdravstvene poklice s standardiziranim naborom podatkov in navzkrižno preverljivimi in uskladjivimi osebniimi podatki.

Slovenske izkušnje pri planiranju kadrov v zdravstvu

Sedanje planiranje kadra v zdravstvu temelji še vedno na metodi, ki opredeljuje potrebe po zdravniku v obliki količnika med številom zdravnikov in številom prebivalcev. Osnova pri tem je uporaba nacionalne zdravstvene statistike (11). Zahteve za planiranje opredeljuje Nacionalni program zdravstvenega varstva Republike Slovenije - Zdravje za vse do leta 2004. Program predvideva, da se bo prebivalstvo Slovenije v naslednjih letih rahlo zmanjševalo. Do leta 2020 naj bi se zmanjšalo za približno 5%. Razmerje med upokojenci in delovno aktivnimi prebivalci v obdobju od leta 1995 - 2005 se bo zmanjšalo na 0,5, v letu 2010 pa se bo pričelo to razmerje povečevati in bo do leta 2020 doseglo raven 0,6. Zadnje projekcije, ki jih je pripravil Eurostat (12), sicer nakazujejo možnost prehodnega rahlega povečanja števila prebivalcev, vendar je dejstvo, da se je število stalnega prebivalstva v zadnjih 8 letih v Sloveniji neprestano zmanjševalo. Primerjave glavnih kazalcev zdravstvenega stanja in financiranja Slovenije v primerjavi z EU in s štirimi razvitimi državami Evropske unije (Avstrijo, Nemčijo, Nizozemsko in Veliko Britanijo) potrjujejo, da na področjih

osnovne zdravstvene dejavnosti, bolnišnične dejavnosti in zdravil na recept Slovenija dosega podobno raven kot države članice EU (glej tabelo 3). Te države so bile izbrane, ker imajo tri podobne sisteme zdravstvenega zavarovanja, Velika Britanija pa kot predstavnica državnega sistema zdravstvenega varstva.

Slabost sedanjega planiranja je v tem, da metodologija ni dovolj strukturirana. Upošteva le zdravniško demografijo in splošno populacijo na drugi strani. V obstoječo metodologijo bi bilo potrebno vključiti funkcionalne parametre, kot so čas, potreben za bolnika, za posamezno diagnozo, za postopek, za specialnost in različne kombinacije, poleg tega pa še druge parametre dostopnosti. Sistem financiranja dejavnosti naj bi nadalje stimuliral bolj produktivno naravnano delo.

Od leta 1992 dalje je bila sprejeta zakonodaja, ki ureja različna področja zdravstvenega varstva: Zakon o zdravstvenem varstvu in zdravstvenem zavarovanju, ki med drugim ureja sistem zdravstvenega varstva ter nosilce družbene skrbi za zdravje (13). Republika Slovenija uresničuje svoje naloge na področju zdravstvenega varstva tudi s tem, da načrtuje zdravstveno varstvo in določa strategijo razvoja zdravstvenega varstva. Za uresničevanje te in še drugih nalog (4.člen) deluje pri Vladi Republike Slovenije Svet za zdravje. Predlagatelji predpisov in razvojnih planov zdravstvenega varstva so dolžni obravnavati predloge, pobude in mnenja Sveta za zdravje ter do njih zavzeti stališča, z njimi pa seznaniti Državni zbor Republike Slovenije. Zakon o zdravniški službi opredeljuje zdravnika kot temeljnega odgovornega nosilca opravljanja zdravstvene dejavnosti (14). Zdravniška služba se opravlja na zdravniških delovnih mestih v okviru mreže javne zdravstvene službe in zunaj nje. Zdravniška delovna mesta v okviru mreže javne zdravstvene službe se razporedijo po območjih in po specialističnih področjih tako, da se zagotovi prebivalcem čim bolj enaka dostopnost do kakovostnih zdravstvenih storitev. Zdravniška delovna mesta se v mreži javne zdravstvene službe prerazporedijo po strokovnih področjih: v javnih zavodih, pri drugih pravnih osebah s koncesijo in pri zasebnikih s koncesijo. Razpored zdravniških delovnih mest v mreži javne zdravstvene službe določi minister, pristojen za zdravje. Zdravniška zbornica Slovenije (ZZS) v zvezi z razporedom zdravniških delovnih mest v mreži javne zdravstvene službe spremlja zasedenost zdravniških delovnih mest, nezaposlenim zdravnikom posreduje informacije o prostih zdravniških delovnih mestih, delodajalcem pa informacije o nezaposlenih zdravnikih,

daje mnenje o podeljevanju koncesij zasebnikom, v skladu s potrebami in starostno strukturo zdravnikov posameznih strok načrtuje in odobrava specializacije. Tako je ZZS ključno soudeležena pri načrtovanju zdravniških delovnih mest, predvsem ob opredelitvi razvojnih vprašanj, kot so mreža specializantskih delovnih mest.

Dejansko stanje. V Sloveniji sorazmerno dobra razpršenost zdravstvene službe po terenu omogoča lahko fizično dostopnost storitev osnovnega zdravstvenega varstva kot tudi ambulantne specialistične in bolnišnične dejavnosti. Seveda dober vtis poslabšujejo problemi pri zagotavljanju ustreznega obremenjevanja kadrov in celo pokrivanje obstoječih delovnih mest v nekaterih predelih Slovenije. Pri pregledu zdravstveno statističnih podatkov, kot tudi v stališčnih javnomnenjskih raziskav, lahko ugotovimo, da se povpraševanje po zdravstvenih storitvah v Sloveniji povečuje. K temu je poleg lahke dostopnosti izvajalcev zdravstvene dejavnosti prispeval tudi način financiranja zdravstvene dejavnosti, kakršen je v veljavi od leta 1993. Za zavarovalniške sisteme, kakršnega smo uvedli tudi v Sloveniji z Zakonom o zdravstvenem varstvu in zdravstvenem zavarovanju, je namreč značilno večje povpraševanje po zdravstvenih storitvah kot v državah s sistemom nacionalnega zdravstvenega varstva (15). Tako stanje zrcali povpraševanje po kurativnih storitvah. Preventivni pregledi pri osebnem zdravniku kažejo pri odrasli populaciji še nadalje trend zniževanja. Za preventivni obisk se odloči komaj vsak deseti (16). V zunajbolnišnični dejavnosti smo leta 2000 ugotavljali povprečno 7,4 obiska na prebivalca, kar je bilo skoraj 25% več kot leta 1990. Ta številka vključuje vse obiske na vseh ravneh dejavnosti. Od tega jih približno polovica odpade na primarno raven, približno ena tretjina pa na specialistično. V zadnjih desetih letih se je število obiskov nenehoma povečevalo. Stanje pri otrocih je nekoliko boljše glede preventivnih pregledov. Upoštevati je seveda potrebno, da je pri tej populaciji v veljavi aktiven pristop z vabilom in rednimi preventivnimi pregledi. Po drugi strani pa se je število kurativnih pregledov otrok od 1. do 6. leta starosti v zadnjem desetletju povečalo kar za 14% (17). Pri šolajočih je v istem času prišlo do upada števila preventivnih pregledov, in sicer kar za četrtno. Pri odraslih prebivalcih ugotavljamo postopno umirjanje rasti števila pregledov v dejavnosti splošne medicine in ustalitev na približno 3,75 pregleda na prebivalca. Med vzroki za tako veliko število obiskov velja omeniti predvsem dobro dostopnost storitev primarnega zdravstvenega varstva, večjo zahtevnost bolnikov, predvsem za specialistične storitve, postopno večje zavedanje o pomenu lastne

skrbi za zdravje, kot tudi ukinitvev kakršnih koli doplačil v osnovni zdravstveni dejavnosti leta 1993. Seveda ima tako veliko število obiskov pomembne negativne učinke. Najbolj očitna posledica je krajšanje časa na posamezen stik med zdravnikom in bolnikom. Ena od posledic, ki jo kaže posebej poudariti, je hitro naraščanje števila napotitev k specialistom po kurativnih obiskih pri zdravnikih splošne oziroma družinske medicine (16). Do 90. let je bil delež napotitev sorazmerno stabilen in se je gibal do 5%. Po hitri rasti v drugi polovici 90. let smo dosegli raven 15%. V istem času se število neposrednih napotitev v bolnišnico ni značilno povečalo. Osnovna zdravstvena dejavnost se je v zadnjem desetletju kljub kadrovskim težavam v zdravstvu vseeno nekoliko okrepila, kar se kaže v zmanjšanju števila prebivalcev na zdravnika v posamezni dejavnosti. Tako je v dejavnosti zdravstvenega varstva otrok število otrok na zdravnika v dejavnosti v 90. letih upadlo za 10% in je leta 1999 znašalo 906 otrok na zdravnika (17). Žal so prisotne velike razlike po območjih celo v razmerju do 1:2. Podoben je bil tudi razvoj na področju zdravstvenega varstva šolskih otrok in mladine, kjer se je število otrok na zdravnika zmanjšalo od skoraj 2700 v začetku 90. let na približno 2200 leta 1999. Na področju splošne medicine se je pomembno izboljšala tako splošna kadrovska zasedenost dejavnosti, saj se je število zdravnikov v zadnjem desetletju povečalo za tretjino. Poleg tega se je povečala tudi strokovna usposobljenost zaradi intenzivnega izvajanja programa specializacije splošne oziroma družinske medicine. Zanimivo je, da so se na področju splošne medicine zmanjšale razlike med območji (11). Uporaba zdravstvene službe in primerjave z drugimi državami za zunajbolnišnično dejavnost po številu obiskov Slovenijo uvršča na povprečno raven med srednje- in vzhodnoevropskimi državami (povprečje letih je 7,6). Primerjava z državami članicami EU pokaže, da je več obiskov le v Belgiji (7,7) (18). To pomeni, da so se za Slovenijo uvrstile tako države brez omejitev pri dostopu do specialističnih storitev, kot sta npr. Francija ali Nemčija, kot tudi, in še bolj izrazito, druge države, ki imajo uveljavljen žvratarski sistem' na ravni zdravnika splošne medicine oziroma družinskega zdravnika. Pri vratarškem sistemu je za vse nadaljnje napotitve k specialistom potrebna odobritev s strani zdravnika splošne ali družinske medicine. Slednje je pomembno zato, ker je ravno vratarški sistem včasih tarča kritik kot vzrok za veliko število obiskov. Sicer pa so v prej omenjeni anketi vratarški sistem bolniki v Sloveniji podprli. Podobno pa je pokazala tudi analiza istega vprašanja s pomočjo ciljnih skupin v letu 2001 (19). Bolnišnično dejavnost v zadnjem obdobju

zaznamuje povečevanje intenzivnosti dela, in sicer predvsem večji obrat bolnikov. Če pogledamo fizične kazalce o delu bolnišnic, potem lahko vidimo postopno povečevanje stopnje hospitalizacije (8% v desetih letih) do konca 90. let. Od tedaj dalje se ne povečuje več in je še vedno nižja kot v številnih državah članicah EU. Hkrati s tema dvema kazalcema se je skrajšalo tudi povprečno trajanje hospitalizacije, in sicer od približno 12 dni leta 1990 na dobrih 9 v letu 1999. Še vedno pa je to trajanje daljše kot v primerljivih državah. Zanimivo je tudi gibanje stopnje hospitalizacije po spolu. Medtem ko sta bila spola na začetku 90. let še praktično izenačena, se je v zadnjih letih ta kazalec mnogo izraziteje povečal pri ženskah (11).

V Sloveniji je bil globalni nadzor nad številom zdravnikov in zobozdravnikov že več kot 40 let precej natančen. Nadzor se je izvajal z vpisno politiko na Medicinsko fakulteto v Ljubljani, kar je tudi edini racionalni način za nadzorovanje števila zdravnikov. To je imelo za posledico precej zmerno povečevanje števila zdravnikov, saj smo podvojitev števila iz leta 1965 dosegli šele 1980. Ponudba zdravnikov v nekaterih intenzivnih področjih zdravstvene mreže ni bila zadostna in se je zato pokrivala z diplomanti drugih fakultet nekdanje Jugoslavije. Leta 1999 smo imeli 220 zdravnikov na 100.000 prebivalcev, kar je primerljivo s cilji racionalnih držav, kot so Velika Britanija, Kanada, ZDA in Avstralija (20). V Evropi se številne države (Italija, Nemčija, Španija, Avstrija), ki so podpirale velike zmogljivosti svojih medicinskih fakultet, danes soočajo s skorajda neobvladljivim problemom zaposlovanja zdravnikov. Taki trendi so na področju javne porabe popolnoma nesprejemljivi. Zato so v vseh štirih državah morali sprejeti bolj restriktivne ukrepe glede vpisne politike na medicinske fakultete.

Učinek večjih povojnih generacij na demografske značilnosti zdravnikov in zobozdravnikov je tak, da se zdravniška populacija v Sloveniji postopno stara. Povprečna starost zdravnikov se je v obdobju 1986 do 1995 povečala od 42 na 43,7 leta, pri čemer so ženske 7 let mlajše, saj je njihov delež v mlajših starostnih skupinah bistveno večji in dosega 60%. Zobozdravniki se starajo še intenzivneje, saj se je v obdobju 1986 do 1995 povprečna starost povečala od 41,4 na 47,8 leta (21). V Sloveniji je bilo v 70. in 80. letih izdelanih več analiz. Leta 1973 je Ivan Kastelic opozoril na nujnost načrtnega proučevanja gibanja števila zdravstvenih delavcev (22). Tedaj so ugotavljali pomanjkanje števila zdravnikov, posebno v osnovni zdravstveni službi. Skupno je na začetku leta 1973 glede na minimalne kadrovske normative primanjkovalo 226 zdravnikov

različnih specialnosti in 113 zobozdravnikov. Kar zadeva bolnišnične dejavnosti so tedaj ugotavljali presežek 186 zdravnikov, vendar pa jih je v specialistični službi primanjkovalo kar 260. Tako je v zdravstvu v Sloveniji leta 1973 primanjkovalo skupaj kar 300 zdravnikov. Naslednja analiza, ki je ocenjevala možnosti naraščanja števila zdravstvenih delavcev za naslednje 5-letno obdobje, je bila pripravljena leta 1976, njen nosilec pa je bil prav tako Ivan Kastelic (23). Njen osnovni namen je bil pripraviti ocene povečanja števila zdravstvenih delavcev za potrebe načrtovanja.

Iz podatkov o številu zdravnikov in zobozdravnikov lahko vidimo, da se je število zdravnikov od leta 1980 do leta 1990 povečalo za 1172 (32,3%) oz. je bil povprečni letni prirast 3,2%. Od leta 1990 do leta 2002 se je zdravniški stan okrepil le za 655 (12%) novih zdravnikov in zobozdravnikov oz. je bil povprečni letni prirast le 1%.

Sredi 80. let prejšnjega stoletja sta bili na Univerzitetnem zavodu zdravstveno in socialno varstvo (UZZSV) pripravljene še dve analizi. Nosilec prve je bila Božena Ravnikar, ki je prvič natančneje primerjala številčno rast zdravstvenih delavcev s sistemom izobraževanja za zdravstvene poklice na vseh ravneh (24). Predstavljena je bila podrobna analiza za vse zdravstvene poklice, tudi s primerjavo z drugimi državami. V obdobju 1973 do 1983 so ugotavljali hitro rast števila zdravnikov praktično na vseh področjih zdravstvene dejavnosti (od 3,3 do 6,3%), razen na zavodih za socialno medicino in higieno (pri slednjih upad za 0,5%). Druga analiza iz istega obdobja, katere nosilec je bila prav tako Ravnikarjeva, je pravzaprav povzetek ugotovitev iz prejšnje analize z umestitvijo rezultatov v demografske razmere in tedanje projekcije prebivalstva Slovenije. Gradivo je pripravljeno v taki obliki, da omogoča ravni, ki v zdravstvu in zdravstveni politiki odloča presojo o potrebah po vseh profilih zdravstvenih delavcev. Primerjavo med evropskimi razmerami in razmerami v Severni Ameriki dobro prikazujejo kazalci Svetovne zdravstvene organizacije "Zdravje za vse do leta 2000", ki se nanašajo na preskrbljenost z zdravniki in zobozdravniki v nekaterih izbranih evropskih državah. (Tabeli 2 in 3). Slovenija ima pomemben geopolitični položaj v Evropi (25). Leta 1992 smo sprejeli novo zdravstveno zakonodajo. Z odprtjem meja lahko pričakujemo, da se bodo zdravstvenim izvajalcem pokazale nove priložnosti. Po mednarodnih izkušnjah bodo največje priložnosti v plastični, žilni kirurgiji, ortopediji, ginekologiji, rehabilitaciji, zdraviliškem zdravljenju in zobozdravstvu. Za tujce je posebej atraktivno naše zobozdravstvo zaradi nižjih cen storitev.

Tabela 1. Primerjalna predstavitev podatkov iz analize (24) in dejanskega stanja števila zdravnikov in zobozdravnikov.

Table 1. Comparison of active doctor and dentist workforce statistics (24).

Poklic / Profession	Analiza (24) / Analysis	Dejansko stanje / Situation on 31.12.1980	Dejansko stanje / Situation on 31.12.1990	Dejansko stanje / Situation 31.12.2002
Zdravniki v osnovnem zdravstvenem varstvu / physicians in primary health care	1165	1272	1707 (ZD)	1520 (javni / public sphere - 1242 zasebniki / private sector - 278)
Zobozdravniki v osnov. zdravstvenem varstvu / dentists in primary health care	896	816	1052 (ZD)	1122 javni / public -552 zasebniki / private - 570)
Zdravniki v bolnišnični in special. dejavnosti / physicians employed in hospitals and specialist	1566	1471	1935	2720
Zdravniki na zavodih za soc. med. in higieno / dentists employed in centres of social medicine and hygiene	81	71	108	95
Zdravniki SKUPAJ / TOTAL doctors	3708	3630	4802	5457

Vir: Zdravstveni statistični letopis Slovenija 1990 in 2002, IVZ RS / Source: Health Statistical Yearbook of the Republic of Slovenia for 1990 and 2002, Institute of Public Health of the Republic of Slovenia

Načrtovalci zdravstvene politike morajo te priložnosti vzeti v zakup in ponovno ovrednotiti zdravstvene strategije na osnovah poslovne odličnosti in mednarodnih standardov. Mobilnost delovne sile lahko Sloveniji koristi. V Sloveniji bo v prihodnjih letih primanjkovalo 700 zdravnikov (17% vseh zdravstvenih delavcev). Zdravniške plače so v zadnjih letih močno narasle, tako da stroški celotne delovne sile predstavljajo 60% stroškov bolnišničnega zdravljenja, leta 1993 pa so znašale le 40% (26). Stroški delovne sile so na zgornji meji. Ti stroški lahko dvignejo cene zdravstvenih storitev do ravni, ko za sosede ne bomo več konkurenčni. Po podatkih iz leta 2000 je v Sloveniji primanjkovalo 0,65 do 1,2% zdravnikov od vseh aktivnih zdravnikov. 3% zaposlenih zdravnikov je bilo tujcev. Skupaj je primanjkovalo 4% zdravnikov, kar ustreza eni generaciji diplomantov medicinske fakultete v Ljubljani (11). V času prvega nacionalnega razpisa specializacij zdravnikov v letu 2003 so izvajalci zdravstvene dejavnosti za obdobje 2007 do 2010 izrazili potrebe po skupni zaposlitvi 880 novih specialistov. Zdravniška zbornica je v okvirih realne ponudbe zdravniške delovne sile pri oblikovanju dokončnega razpisa upoštevala še podatke o potrebnem nadomeščanju zdravnikov za obnavljanje obstoječe mreže zdravniških delovnih mest

glede na register zdravnikov, korekcije na osnovi podatkov o povprečni preskrbljenosti prebivalstva s specialisti v različnih slovenskih regijah in cilje plana zdravstvenega varstva, a tudi omejitve zaradi premajhnega števila specializacijskih delovnih mest. Tako je bilo končno skupno število specializacij v 1. nacionalnem razpisu 254, izkazala pa se je tudi usklajenost med Zbornico in Ministrstvom za zdravje tako glede novih pravil igre na področju specializacij kot glede načrtovanega števila razpisnih specializacij (27, 28).

Razpravljanje

Splošne ugotovitve

V preteklosti narejena študija je kot temeljna rezultata poudarila dvoje: prvič, nadaljevanje naraščanja števila zdravnikov v praktično vseh obravnavanih državah, vendar z že opaznimi učinki za zmanjševanje števila vpisanih študentov v nekaterih med njimi; drugič pa, da bo t.i. "baby-boom" generacija zdravnikov, ki so vstopili v velikem številu v dejavno poklicno življenje, odhajala v pokoj kmalu po letu 2000 (30). Prva ugotovitev za Slovenijo praktično ne velja, saj je vpis

na Medicinsko fakulteto v Ljubljani nadzorovan (omejen) že več kot 30 let, zato tudi ni bilo potrebe po kakršnih koli dodatnih ukrepih na tem področju. Kar zadeva učinek številčnejših povojnih generacij tudi na demografske značilnosti zdravnikov in zobozdravnikov, pa velja ugotoviti naslednje: pri retrogradnem pregledu podatkov ugotovimo, da se zdravniška populacija v Sloveniji postopoma, vendar zanesljivo, stara. To nam pokažejo analize starostnih skupin in povprečna starost slovenskih zdravnikov.

V Sloveniji je globalni nadzor nad številom zdravnikov in zobozdravnikov že več kot 30 let precej natančen. Pri tem so kazalci števila zdravstvenega osebja v primerjavi z državami Srednje in Vzhodne Evrope bistveno bolj ugodni. V glavnem se je nadzor izvajal z vpisno politiko Medicinske fakultete v Ljubljani, kar je tudi edini racionalni način nadzora nad številom zdravnikov. To je imelo za posledico precej zmerno povečevanje števila zdravnikov, saj smo podvojitve števila iz leta 1965 dosegli šele leta 1980 (Tabela 2). Ponudba zdravnikov je bila v nekaterih intenzivnih fazah širjenja zdravstvene mreže nezadostna in se je zato

pokrivala z diplomanti drugih fakultet nekdanje skupne države. V vsakem primeru smo v Sloveniji ohranili tak nadzor nad številom zdravnikov, ki nas uvršča med države z zelo urejenim sistemom. Tako smo leta 1997 imeli 224 zdravnikov na 100.000 prebivalcev, kar je primerljivo s cilji, ki si jih postavljajo države z racionalnim pristopom k zdravstvenemu varstvu, kot so Velika Britanija, Kanada, ZDA in Avstralija (31). V Evropi se številne države, ki so podpirale velike zmogljivosti svojih medicinskih fakultet, danes soočajo s problemom zaposlovanja zdravnikov. Med temi velja omeniti predvsem štiri države: Italijo, Nemčijo, Španijo in Avstrijo. Vse štiri so imele veliko število diplomantov, ki je temeljilo na razmahu zdravstvenega varstva v teh državah v 60. in 70. letih, danes pa so te številke bistveno prevelike. V pogojih gospodarske recesije in neogibne racionalizacije so takšni trendi nesprejemljivi. Tako je znašal prirast zdravniške delovne sile leta 1999 v Nemčiji kar 5,5%, kar je več od gospodarske rasti v tej državi. Zato so v vseh štirih državah morali sprejeti bolj restriktivne ukrepe glede vpisne politike na medicinske fakultete.

Tabela 2. *Diplomanti medicinske fakultete - zdravniki in zobozdravniki.*

Table 2. *Graduates from the Faculty of Medicine - doctors and dentists.*

Leto / Year	Diplomanti-zdravniki / Medical graduates	Diplomanti-zobozdravniki / Dental graduates
1986	91	33
1987	138	17
1988	124	31
1989	114	27
1990	127	33
1991	112	29
1992	105	31
1993	125	27
1994	108	38
1995	157	41
1996	140	25
1997	119	41
1998	125	38
1999	136	16
2000	105	43
2001	122	43
2002	151	30

Analize, ki so bile opravljene v pripravah planskih gradiv za Državni zbor, predvidevajo mnogo bolj umirjeno rast števila zdravnikov in zobozdravnikov, kot pa smo ji bili priča v preteklih treh desetletjih. Predvidena rast povpraševanja po zdravnikih je na ravni 0,5% letno. To je minimalna rast, zasnovana na trendih zadnjih let, ob upoštevanju rasti povpraševanja glede na demografske značilnosti prebivalstva Slovenije - bistveno zmanjšanje števila rojstev in staranje prebivalstva. Kot je razvidno iz predvidevanj, ki jih uporabljamo, bodo ključni dejavniki v definiranju potreb po zdravnikih demografski kazalci zdravniške populacije same (21).

V zadnjih letih se v Sloveniji ob nadaljnji veljavi statičnega modela rasti zaposlovanja in obsega

zdravstvene dejavnosti že kaže pomanjkanje zdravnikov. Vzroki za to so: spremenjena zakonodaja s strani EU glede dovoljenega dela zunaj rednega delovnega časa, ki dovoljuje manjše število dežurnih ur, čeprav je treba zagotavljati 24-urno urgentno službo. Približno dve tretjini zdravnikov je žensk, zato so v reproduktivni dobi več let odsotne. Trajanje specializacij se je v zadnjih letih podaljšalo s 4 let na 6 let. Specializacija lahko zajame tudi del sekundarijata, zato gre trenutno za enoletni primanjkljaj specialistov različnih specialnosti. Zdravniki, starejši od 50 let, so po delovni zakonodaji opravičeni od nočnega dela in stanja pripravljenosti. Sedanja specializacija splošne oz. družinske medicine je pridobila novo obliko, ki

Tabela 3. Ključni kazalci slovenskega zdravstvenega sistema v primerjavi z nekaterimi drugimi evropskimi državami (Avstrija, Nemčija, Nizozemska, Velika Britanija in državami EU).

Table 3. Key health care indicators for Slovenia and several other European countries (Austria, Germany, the Netherlands, Great Britain and EU member countries).

	Enota / Unit	SI / SI	A / A	ZRN / GER	NL / NL	VB / GB	EU / EU
Zmogljivosti in izraba / Supply and utilization		1997	1997	1997	1997	1997	1996
Zdravniki na 1.000 preb. / Physicians per 1000 population	Število	2.24	3.60	3.45	1.80	1.53	3.46
Sp. zdravniki na 1.000 preb. / GPs per 1000 population	Število	0.7	0.5	0.7	0.8	0.6	1.00
Obiski na prebivalca / Visits per inhabitant	Število	6.4	6.3	13.0	5.9	5.9	7.3
Zobozdravniki na 1.000 preb. / Dentists per 1000 population	Število	0.64	0.48	0.76	0.52	0.32	0.68
Farmacevti na 1.000 preb. / Pharmacists per 1000 population	Število	0.34	0.55	0.57	0.17	0.36	0.78
Predpisani zavitki zdravil na prebivalca / Drugs prescribed per inhabitant	Število	15.60	17.20	11.60		9.80	
Bolnišnične postelje na 1.000 preb. / Hospital beds per 1000 population	Število	5.8	8.9	9.4	5.5	4.9	7.3
Bolnišnično zdravljenje na 1.000 preb. / Hospital admissions per 1000 population	Število	16.9	24.6	20.8	10.5	17.1	19.0
Povpr. trajanje boln. zdravljenja / Average hospital stay	Dnevi	10.0	10.8	12.5	14.3	9.0	11.0
Stopnja zasedenosti / Bed occupancy	%	80.2	81.3	76.2	74.7	84.9	77.1A
Boln. osebje na posteljo / Hospital staff per bed	Število	1.7	1.8	1.5	2.1	2.9	
Boln. postelje za akut. primere na 1.000 preb. / Acute hospital beds per 1000 population	Število	4.8	5.6	6.6	3.6	2.2	4.5

zahteva več kroženja in odsotnosti z dela. V obdobju prehoda je na število tistih kolegov, ki delajo z bolniki, vplivalo še nekaj drugih dejavnikov. Povečalo se je število zdravnikov, zaposlenih zunaj javne zdravstvene mreže, povečale so se možnosti za zasebno delo v zdravstvu, pomembno število zdravnikov je zaradi boljših pogojev poiskalo zaposlitev v novoustanovljenih predstavništvih mednarodnih farmacevtskih podjetij. V primerjavi z drugimi evropskimi državami imamo praktično najmanjše število zdravnikov na enoto prebivalstva. Zaradi spremenjene zakonodaje o delovnem času bo potrebno delo zdravnikov prek rednega časa dejansko zmanjšati. Nujno bo potrebno povečati tudi obseg programa določenih dejavnosti. Ob nadaljevanju sedanjih trendov povpraševanja po zdravniških in zobozdravniških storitvah in ob vpisu na obe fakulteti lahko ocenimo, da se bo vsaj še nekaj let nadaljeval trend zmanjševanja preskrbe z zdravniki.

V sodobnem planiranju kadrov je neobhodna računalniška tehnologija. V razvoju računalniškega sistema izvajalcev zdravstvenega varstva Slovenije so uporabili metodo informacijskega inženiringa, to je zbirko orodij in tehnik za planiranje, analize, oblikovanje in sestavo informacijskih sistemov (32). Mreža izvajalcev zdravstvenega varstva je arhitektonsko povezana v Zavodu za zdravstveno zavarovanje in Inštitutom za varovanje zdravja, tako da je uporaba baze dvotirna. V ZZZS služi kot referenčna baza za operativno delo, v IVZ RS pa kot skladišče podatkov. Z združitvijo mreže ZZZS in IVZRS smo sposobni pripraviti hitre analize v kratkem času in tudi obnavljati podatke, kar je vsekakor prednost.

Zaključki

V zadnjih 20 letih je bilo povpraševanje po zdravnikih v Sloveniji neustrezno glede na poklicno demografske podatke zdravnikov in zobozdravnikov, splošno populacijsko demografsko dinamiko in razvoj novih zdravstvenih tehnologij.

V prihodnjih letih bodo število aktivnih zdravnikov v glavnem zagotavljali diplomanti Medicinske fakultete v Ljubljani in po nekaj letih tudi Medicinske fakultete v Mariboru, okrog 4-8% zdravniki iz tujine, ki se bodo zaposlili v Sloveniji.

Trenutno stanje načrtovanja kadrov v zdravstvu še vedno ni optimalno. Ministrstvo za zdravje RS, Zdravniška zbornica RS, Zavod za zdravstveno zavarovanje RS soglašajo z ustanovitvijo nacionalne komisije, ki bo pregledovala in koordinirala delo na tem

področju. Konflikti med vpletenimi nastajajo predvsem zaradi nejasnih pristojnosti. Potrebno bo jasneje opredeliti vloge vseh vpletenih, to so Ministrstvo za zdravje RS, Zdravniška zbornica RS in Zavod za zdravstveno zavarovanje RS.

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BIOTERRORISM AND PUBLIC HEALTH - PREPAREDNESS FOR IMMEDIATE ACTION

BIOTERORIZEM IN JAVNO ZDRAVJE - PRIPRAVA NA HITRI ODGOVOR

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Prispelo: 29. 3. 2005 - Sprejeto: 11. 12. 2005

Review article
UDC 614.8:340.62

Abstract

Work plans of the Council of EU for 2003-2008, and work plan 2005 of EU and Ministry of Health of the Republic of Slovenia stress the need for preparedness for health threats. Different kinds of microorganisms and their natural toxins have been recognised as potential threats in event of bioterroristic attack. Most of them are rarely reported because of their nonspecific clinical features and complex laboratory confirmation. Some diseases are easily propagated from person to person, or from animals to humans, and some are not highly contagious. The degree of public health threat they represent depends on the level of awareness, knowledge and preparedness for a rapid response in different institutions, including health care settings.

Key words: bioterrorism, public health, microbiology, bacterial toxins, disease notification

Pregledni znanstveni članek
UDK 614.8:340.62

Izvelek

Usmeritve Delovnega načrta Evropske skupnosti za obdobje 2003-2008 ter Delovnega načrta EU in Ministrstva za zdravje Republike Slovenije za leto 2005 narekujejo izboljšavo pripravljenosti na nenadne dogodke, ki lahko vplivajo na zdravje prebivalstva. Različne mikroorganizme ter njihove naravne toksine uvrščamo med morebitne agense napada. Večji del teh povzročiteljev redko zaznamo oz. o njih poročamo zaradi velikokrat nespecifične bolezenske slike ali zahtevne mikrobiološke laboratorijske diagnostike. Nekatere bolezni se hitro prenašajo od človeka na človeka ali z živali na človeka, druge pa ne sodijo med visoko nalezljive bolezni. Nevarnost za javno zdravje je odvisna od zavesti, znanja in pripravljenosti različnih služb, vključno z zdravstvom, za hitri odgovor na različno ogrožanje javnega zdravja.

Gljučne besede: bioterorizem, javno zdravje, mikrobiologija, bakterijski toksini, prijave bolezni

Introduction

The European Parliament and the Council adopted a Decision establishing a programme of Community action in the field of public health, 2003-2008 (1). European Union (2) and Ministry of Health of the Republic of Slovenia (3) adopted working programmes for 2005. All the above mentioned documents give priority to rapid action-oriented response to public health threats.

One of the achievements of health care in the past century is easy access to preventive medicine, i.e. to immunisation, screening, health education and preventive treatment. At the same time, rapid progress in the development of biological weapons was notified (4). Last years, a large number of publications have been published all over the world dealing with health protection against bioterrorism.

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All the decisions taken should be professional and based upon proper medical evaluation and training of all services engaged in reducing the harm of biological attack. Prompt decisions and actions should be based on carefully prepared plans. Preventing general fear and panic is part of a rapid response to a potential attack. The response should be well coordinated between the government and various public health institutions.

Definition of biological weapon

World Health Organisation (WHO) defines biological weapons as ones whose intended target effects are due to the infectivity of disease-causing microorganisms (5).

Predictions

Nearly any infectious disease can occur as a result of biological attack. Some of them are transmitted via respiratory or alimentary route, or through contacts with contaminated environment or animals (6). Infections as a result of ingestion of contaminated food or water can be expected as well (7, 8). The onset of the disease can be abrupt, or progressive over several days or weeks, depending on the incubation time. Some diseases are propagated from person to person. Clinical presentation of infectious diseases varies largely, and depends on the kind of microorganisms used in biological terrorism attack (9, 10, 11).

Bioterrorist attacks usually create general panic in the affected region. As a result, victims of panic and those in need of medical care seek immediate medical attention in the nearest health care institutions. They mostly arrange for their own transport to the hospital rather than wait for the arrival of rescuers.

Measures should be taken to prevent the dissemination of infectious disease at the site of attack, in the nearby primary health care institutions and in the closest hospitals. Decontamination of casualties should be planned for all these settings. Security workers and medical personnel should be available to combat panic, solve traffic and telecommunication problems and meet needs for medical care. Safeguards and health care personnel should be protected against vaccine-preventable infectious diseases by immunization. If there is a high risk of some uncommon diseases, additional vaccination against emerging infectious diseases is required. Prophylactic medication is recommended for protection against diseases preventable by prophylactic treatment (12).

Emergency personnel should immediately locate and identify the contaminated area. They may have to act within minutes if lives are to be saved. A covert release of a biological agent may not be noticed for days or even weeks, depending on the incubation period. The disease may spread to other parts of the country or world because of movement of victims during the symptom-free incubation period after the exposure.

Assessing the threats to public health

Many pathogens have been investigated for their potential use as biological weapons, but few have been found satisfactory candidates, and even fewer have actually been used. Biological agents listed as possible weapons for use against human beings by WHO (5), United Nations (13), NATO (4) and Australia group (14) include:

- *Bacillus anthracis*,
- *Brucella species*,
- *Burkholderia psuedomallei*,
- *Franciscella tularensis*,
- *Yersinia pestis*,
- *Coxiella burnetii*,
- *Rickettsia prowazeki*,
- *Rickettsia rickettsii*,
- *Tick-borne encephalitis*,
- *Dengue*,
- *Yellow fever*,
- *Eastern equine encephalitis*,
- *Chikungunya*,
- *Venezuelan equine encephalitis*,
- *Variola major (smallpox)*,
- *Others*

The United Nations define bioterrorism as the unlawful use, or threatened use, of microorganisms or toxins derived from living organisms to produce death or disease in humans, animals, or plants.

Medical aspects

Various methods of disseminating biological agents are available. The most likely route of transmission, which poses the highest risk, is inhalation of microorganisms. Only few bioagents penetrate the skin, but many can enter the digestive system with contaminated food or drinking water. Infection may also be transmitted by a hand-mouth contact after touching contaminated surfaces.

Clinical presentation of diseases caused by biological attack is usually delayed, with exception of some toxins. A considerable interval may elapse between a biological attack and identification of the first cases of disease. The patients may present with atypical early clinical findings. Epidemiological investigation is required to determine symptoms of the disease, mode of microorganism transmission and source of infection¹⁰. Mixed infections or intoxications with two or more different pathogens are possible, and they are likely to complicate or delay the diagnosis.

Attack indicators are as follows:

- a disease pattern may differ from a naturally-occurring epidemics in a known geographic area;
- severe respiratory involvement;
- resistance of microorganisms to usually used antibiotics;
- occurrence of "old" or newly identified infectious diseases in regions where they occur very rarely or had been eradicated;
- increased numbers of sick or dead animals, witness to an attack, or discovery of an appropriate delivery system.

Incubation period

The interval between infection of an individual and the onset of symptoms depends on (15):

- the infecting microorganism;
- virulence of the particular strain of the causative agent;
- infecting dose and route of infection;
- host susceptibility.

The incubation period of pathogens ranges from several hours (food poisoning), to several days (plague) weeks (smallpox, Q-fever) or even months (anthrax) (16,17). The incubation period after the use of a toxin is usually shorter, i.e. from a few minutes to several hours for T-toxin, Staphylococcal toxin or castor oil.

During the incubation period, except just before the disease onset, the infected person is usually not able to transmit the disease to another person. Immediately upon the identification of a bioterrorist attack, decontamination of the contaminated environment should be started.

Notifiable diseases

Many infectious diseases (18) are notifiable under the public health regulations (Table 1).

Many diseases are likely to be caused by a biological attack. Local health care institutions and the Institute of Public Health of the Republic of Slovenia are responsible for infectious disease control in Slovenia. Doctors have to send reports on infectious diseases to the regional Institute of Public Health. Epidemiological investigations and control measures are required to limit the spread of infection. Data should be collected from a variety of sources with the aim provide effective disease surveillance, including the following activities:

- facilitating early identification of changes in disease patterns;
- identifying changes in environmental and host factors that may lead to an increase in the frequency of disease;
- monitoring the safety and effectiveness of preventive and control measures.

Epidemics

An epidemic is characterised by a temporary increase in the incidence of infectious disease. Most epidemics are public health emergencies and require prompt identification of infectious agent and effective control measures.

The course of an epidemic depends on the biological properties of the agent, on whether the environment is favourable to its survival and transmission, and on the immunity of the host population. Epidemics are most commonly caused by microbials, but may also be due to bacterial toxins or chemical poisoning.

There are two main types of epidemics:

- common source,
- propagated.

Both of them can occur as a result of a biological attack.

International assistance

According to the WHO most countries can make a major contribution to the preparedness for deliberate release of biological agents by strengthening public health infrastructure, particularly public health surveillance and response. International assistance is of primary importance and falls into the following categories:

- application of international law;
- medical and other assistance;
- practical protection (provision of equipment, and of material, scientific and technical information).

Table 1. *Notifiable infectious diseases in Slovenia.*Tabela 1. *Infekcijske bolezni, ki jih je treba v Sloveniji obvezno prijaviti.*

AIDS/HIV	Lambliasis / Lamblijoza	Paratyphoid fever / Paratifus
Anthrax / Vranični prisad	Legionellosis / Legioneloza	Poliomyelitis / Poliomielititis
Botulismus / Botulizem	Leptospirosis / Leptospiroza	Psittacosis / Psitakoza
Brucellosis / Bruceloza	Lyme disease / borelioza Lymska	Rabies / Steklina
Cholera / Kolera	Malaria / Malaria	Relapsing fever / Povratna mrzlica
Diphtheria / Davica	Malleus / Smrkavost	Rubella / Rdečke
Dysentery (amebic and bacillary) / Griža (povzročitelj: ameba ali bakterije)	Measles / Ošpice	Scarlat fever / Škrlatinka
Echinococcosis / Ehinokokoza	Meningitis / Meningitis	Tetanus / Tetanus
Encephalitis / Encefalitis	Meningococcal septicaemia / Meningokokna sepsa	Tuberculosis / Tuberkuloza
Enterobiasis / Enterbioza	Microsporiosis / Mikrosporija	Tularemia / Tularemija
Enterocolitis / Enterokolitis	Mononucleosis infectiosa / Infekcijska mononukleozna	Typhus abdominalis / Trebušni tifus
Febris haemorrhagica virosa / Hemoragična mrzlica	Mumps / Mumps	Viral haemorrhagic fever / Hemoragična mrzlica
Febris Q / Vročica Q	Morbilli / Ošpice	Viral hepatitis / virusni hepatitis
Gonorrhoea / Gonoreja	Morbus Brill-Zinsser / Brill- Zinsserjeva bolezen	Whooping cough / Oslovski kašelj
Influenza / Influenca	Pertussis / Oslovski kašelj	Yellow fever / Rumena mrzlica
	Plague / Kuga	Some others / nekatere druge bolezni

The United Nations with various agencies or related organizations will advise and assist national governments in developing and maintaining global defense against biological weapons (13).

Preventive measures

A rapid and coordinated action will be necessary to identify the cause and to institute effective control measures (19).

First responders to an attack with toxic substances or biological weapons with *prompt effects* will most likely be police and fire department personnel, while first responders to an initially undetected attack with an infective agent, or with a toxic agent with *delayed effects*, will more likely be health care personnel.

Protection measures for first responders include:

- impermeable surgical gowns;
- oral-nasal masks;
- face shields or goggles;
- vaccination;
- preventive medication.

Separation of contaminated victims of bioattack and implementation of barrier nursing procedures should be initiated immediately.

Preventive treatment and vaccination should follow laboratory confirmation of causative agent.

Conclusion

There is a need for intensified activities in the field of protection and defence against bioterrorism on the

national level. Slovenia can participate with the knowledge and experience of civil defence experts, Red Cross, microbiological laboratories, and public health workers from government ministries and public health institutions. National action plan will be designed in accordance with the WHO, EU and the United Nations directions.

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EUROPEAN ACADEMIC FAMILY MEDICINE: PROSPECTS FOR THE FUTURE

DRUŽINSKA MEDICINA KOT EVROPSKA AKADEMSKA STROKA: OBETI ZA PRIHODNOST

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Prispelo: 2. 11. 2005 - Sprejeto: 5. 1. 2006

Letter to the editor

Teaching and research developments all over Europe have contributed to the recognition of general practice/family medicine as an academic discipline. Yet, as it has not been fully recognized in all European countries, better support is needed (1).

The countries involved in EURACT (European Academy of Teachers in GP) drew up a Europe's New Definition, signed by the main European Societies, and ratified at the 2002 WONCA Congress. It outlines the principles of the profession, and defines its own role and specialist specificity. It describes its core competencies, and opens roads for the elaboration of a specific research method, and of a teaching method based on the adopted principles and objectives (2).

EURACT originally started with 15 member countries. With the publication of the Definition, this number rose to 27 and has now reached 31. It is expected to increase to 34 by the next EURACT meeting.

This enlargement should increasingly strengthen the GPs' position on the European scene, and encourage all GPs in Europe to strive for a strong and homogenous structure of general practice teaching and research.

This process will definitely keep up with the political expansion of the European Union. A greater number of member countries, as well as improved integration and greater homogeneity will lead to a free professional exchange and to mutual recognition of professional qualifications in many domains, including general practice. For general practice in Italy to become a recognized specialty in Europe, the general practice training course should be expanded from two to three years. If not, European GPs will be allowed to work in Italy, while the professional qualification of their Italian colleagues will not be recognized in other European countries.

This process was first promoted by some northern European countries, the so-called "first class" GP countries, which boast a long-standing and consolidated academic and departmental structure, but whose supremacy and domination, almost a monopoly, in publishing, teaching and research is not looked upon with favour.

This promotion of high-level general practice in Europe enhanced the development of this discipline in the ex-Warsaw Pact countries, in line with the established model and almost at the same level. This birth of general practice "out of nothing" has been made possible thanks to local governments' foresight and Central Bank intervention, as well as with help from experts from northern European countries.

Furthermore, it fostered debate in the intermediately developed countries where there is a great number of GPs, but where family medicine is not recognized as an independent specialist discipline. National debates, often incited by the EURACT, EGPRN, EQuIP (WONCA networks) reports, opened many possibilities. National development levels varied largely, and many members submitting periodic reports to the EURACT Council reported varying degrees of progress, sometimes very small, and sometimes significant or even impressive. Even in Italy, where family medicine has not yet been fully recognized as an independent academic specialty, the first undergraduate courses have been developed; training at a national level has been consolidated and became visible, as shown by my reports for the past four years. Relevant European documents on family medicine have been placed on the agendas of political and educational debates (3).

As concerns the countries that have recently joined the EU, they have reached an enviably high level of family medicine development and could therefore share their views and experience with other member countries, thereby enhancing the development and recognition of pan-European family medicine specialty.

There are still considerable differences between European countries as concerns the recognition of family medicine as an academic discipline. The situation is particularly unfavourable in the Mediterranean setting (4), mostly because of political reasons and reluctance to recognize family medicine as an independent specialty: there is a delay in discussing and adopting

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the documents related to this issue, and shortage of funding of primary care.

The position of family medicine in some countries is unfavourable, as characterized by underfunding, finance cutting, and attempts to assign to GPs tasks and competencies outside their scope of practice, as, for example, in Italy (one should only read EURACT core competencies to get the true picture). Career flexibility, participation in scientific congresses and international projects, obtaining sponsorships and refunds of expenses are forbidden by laws and contracts, but just for GPs!

This policy constitutes an overt violation of the European law on free movement of doctors and mutual recognition of professional qualifications, and of the law on flexible work patterns considering one's needs, age, work progression and competencies. Neither is it in line with the European directive stating that every medical university should have a family medicine department headed by a GP (5). GPs are prevented from engaging in real research and serene teaching in protected time. In fact, many Italian studies are conducted by a few enthusiastic "night and weekend" researchers.

In Europe, there is still a strong dichotomy between groups of countries performing quality analyses and rewarding quality in practice, i.e. by work contracts (6), and between groups of countries where contracts are based on quantity, e.g. on the number of patients on lists, number of patients or procedures per time unit, which is the case in Spain, Italy, Romania and Bulgaria. It is not by coincidence that in a European research project on burn-out effects in GPs, Bulgaria performed the worst, and that many lawsuits in the country involve medical errors caused by excessive workload, lack of motivation, and depression (7).

The domain of family medicine, however, is apparently making a rapid progress in some European countries. These include: Malta, a country with a small group of GPs with a homogenous, European mentality; Turkey which boasts 23 university family medicine departments, and Slovenia, a small country with national representatives at the highest levels in European GP organizations.

In order to promote the academic development of general practice, and to achieve and maintain high quality standards in this discipline, it is necessary to put pressure on governments and to insist on the application of the published directives in practice. It is also necessary to make the discipline more attractive for medical students and young physicians, to develop and spread teaching and research methods, and to put forward new ideas and proposals to increase the effectiveness of clinical care and specific services in general practice (8).

The most important recent contribution of academic general practice has been the definition of an educational

agenda, meeting the needs of physicians, future GPs, health services, patients and other specialists (9).

General practice as an independent academic discipline should also strive for equity in health and health care, an important topic for a general practice/family medicine research agenda. Increasing the available research capacities, and developing practice-based research networks should become a key priority for any country (10). At the same time, cooperation processes should be proposed within the European networks, aiming to further enhance and integrate their productivity.

Various and more senior GP posts are required to fulfill the tasks and aims of academic leadership in the countries where it is still lacking. Appointments to these posts should always be made according to real objectives and transparent criteria of professional quality. In those countries where GPs still perceive themselves as being at the bottom of the academic scale, measures should be taken towards the establishment of a national career structure for academic general practice (11, 12). These activities, together with the implementation of the educational and research agendas, will really promote a wider and more homogeneous development of general practice/family medicine as a specific academic discipline in Europe.

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SEMINAR KATASTROFNE MEDICINE

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Poročilo

Seminar o t.i. katastrofni medicini, poimenovan *Pripravljenost zdravstvenih zavodov za velike nesreče - pandemija gripe in kemijske nesreče*, je potekal 15. in 16. februarja 2006 v Ljubljani. Seminar je organiziralo Ministrstvo za zdravje RS. Na srečanje so bili povabljeni tisti, ki se v zavodih ukvarjajo z načrtovanjem in izvajanjem dejavnosti na področju katastrofne medicine ter izvajalci nujne medicinske pomoči. Povabljeni so bili vsi zdravstveni zavodi in zasebniki.

Obravnavali smo pripravljenost zdravstvenih zavodov za velike nesreče. Srečanje se je začelo z informacijo o vaji EU, ki se je nanašala na pandemijo gripe, pregledali smo vzorčni primer načrtov posameznih zdravstvenih zavodov in se dogovorili za nadaljnje dejavnosti v zvezi z organizacijo in ukrepanjem na področju zdravstva.

V sodelovanju z Uradom za kemikalije, Kliničnim centrom - Centrom za zastupitve in v okviru programa PHARE - Chemical safety II je bil pripravljen uvodni del usposabljanja za področje kemijskih nesreč, predstavljene so bile tudi izkušnje kolegov iz Avstrije. Na podlagi seznama potencialno nevarnih kemikalij in njihove porazdelitve po Sloveniji so kolegi iz Centra za zastupitve pri Kliničnem centru v Ljubljani, predstavili toksindrome in ukrepe za zmanjšanje škode.

Gripa

Usklajevanje načrtov posameznih zdravstvenih zavodov za skupno delovanje v primeru pandemije gripe na regionalni ravni ponekod že poteka. Zdravstveni dom Ljubljana sodeluje v Delovni skupini za pripravo načrta (operativnega plana) za delovanje v izrednih razmerah epidemija ptičje gripe Kliničnega centra v Ljubljani. Usklajujemo skupno delovanje primarnega in bolnišničnega zdravstvenega varstva ob morebitnem izbruhu pandemije. Podobna prizadevanja potekajo v Ptuj, Mariboru in nekaterih drugih krajih po Sloveniji. Do konca leta 2006 pričakujemo v Sloveniji dokončno izdelavo in sprejem Nacionalnega programa za primer pandemije gripe. Načrtujemo nadaljnja usposabljanja zdravstvenih delavcev, vaje, ustanavljanje regijskih koordinativnih skupin, določitev odgovornih oseb za sodelovanje v koordinacijski skupini. V načrtih bo vključeno tudi delovanje zasebnikov ter lekarn.

Dopolnjevanje načrtov je povsod nujno.

Pričakujejo nezadostne kadrovske zmogljivosti zaradi bolniških odsotnosti v zdravstvu in velikih potreb prebivalstva. Finančne potrebe za delovanje zdravstva v kriznih razmerah po Sloveniji praviloma niso vrednotene, kar daje vtis pomanjkljivosti oz. nepopolnosti načrtov in otežkoča opremljanje z zaščitnimi sredstvi.

Ministrstvo za zdravje ocenjuje, da pojav ptičje gripe med divjimi pticami v Sloveniji ne pomeni dodatne ogroženosti zdravja našega prebivalstva, kajti ni znan prenos z divje ptice na človeka. Kemoprofilaktična zdravila so v Sloveniji indicirana za tiste, ki so bili v stiku z okuženimi pticami in za osebje, ki dela v laboratorijih za diagnostiko ptičje gripe. Tamiflu izdaja na podlagi epidemioloških anketiranj Inštitut za varovanje zdravja R Slovenije.

Kemična varnost

V drugem delu seminarja smo poslušali referate o kemijski varnosti v Sloveniji in po svetu. V Sloveniji deluje medresorska komisija za kemijsko varnost, v kateri so zastopani predstavniki številnih Ministrstev in tudi Gospodarske zbornice Slovenije, policije, gasilstva. Deluje tudi stalni odbor za področje kemičnih nesreč. V izdelavi je Nacionalni program za kemično varnost 2006-2010. Mednarodna strategija ravnanja s kemikalijami, ki je bila sprejeta februarja 2006 v Dubaju, postavlja za cilj varno uporabo kemikalij v svetovnem merilu do leta 2020.

Načrti zaščite in reševanja ob kemičnih nesrečah se ustvarjajo v Sloveniji na ravni države, občin, gospodarskih družb, zavodov in drugih organizacij. Nosilci načrtovanja določijo skrbnika načrta. Na ravni države so razvili računalniški geografski sistem, ki pokriva oz. spremlja kemično varnost v državi. Za strokovno področje oz. kemikalije je odgovoren Urad za kemikalije pri Ministrstvu za zdravje, za promet pa Ministrstvo za notranje zadeve in Ministrstvo za promet. Poglavitni predpisi, ki urejajo prevoz nevarnih kemikalij, sta Zakon o prevozu nevarnega blaga in Evropski sporazum o mednarodnem cestnem prevozu. Predpisi, ki so pomembni za delovanje zaščite pred kemičnimi

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nesrečami, so tudi: Zakon o kemikalijah, Pravilnik o razvrščanju, pakiranju in označevanju nevarnih pripravkov idr. Med nevarno blago uvrščajo strupene substance in tudi blago, ki predstavlja nevarnost za okužbo.

O zaščitni opremi in dekontaminaciji pri morebitni uporabi kemičnega orožja smo poslušali zanimivo predavanje zastopnika Ministrstva za obrambo. Predstavljene so bile lastnosti lahke zaščitne obleke in tudi zaščitnih oblek, ki imajo lastnost vsrkavanja kemičnih strupov, ne spuščajo strupa v telo. Nujna je tudi uporaba maske, rokavic in ustreznih škornjev. Pri dekontaminaciji ločijo:

- takojšnjo (osebna),
- operativno (delna),
- popolno,
- čistilno (clearance).

Predstavljena so dekontaminacijska sredstva za dekontaminacijo vozil in terena ter ločeno za dekontaminacijo ljudi ter tudi radiološko-kemično-biološko (RKB) zaščitni zabojnik in RKB zaščitno zaklonišče. Na voljo je tudi razpršilec z antidotom za dražeče pline.

Številne kemične snovi iz industrije tudi vdirajo oz. poškodujejo kožo, lahko pa povzročajo tudi sistemske učinke. Pred postopkom dekontaminacije sprostimo dihalne poti. Dekontaminacija očesnih veznic traja vsaj 20 minut - izpiranje pod pipo in v času prevoza. Kontaminirana oblačila morajo biti odstranjena, bolnik ne sme kaditi, uživati tekočine ali živila. Po izpiranju škodljive snovi bolnika prekrijemo s plastiko ali alufolijo in se povežemo s Centrom za zastrupitve Kliničnega centra v Ljubljani, ki je nenehno dosegljiv za nasvete (mobitel: 041 635 500). Koristne nasvete ponujajo tudi

na spletni strani www.zastrupitve.net. Poudarjeno je bilo, da je strupov veliko, antidotov pa malo. Pospeševala za eliminacijo strupa znajo biti tudi učinkovita v nekaterih primerih. Pri dušljivcih je na nek način antidot 100 odstotni kisik (ni pravi antidot), enako tudi pri zastrupitvi z ogljikovim monoksidom. Pri povzročiteljih methemoglobinemije metilensko modrilo, pri cianidih amilnitrat, hidrokobalamin, dikobalov edetat. Pri zastrupitvi s sulfidi amilnitrit/natrijev nitrit, pospešena eliminacija in hiperbarična komora. Pri zaviralcih holinesteraze je antidot atropin v odmerku 2 do 4 mg i.v. (za otroke 0,02 mg/kg telesne teže i.v., ne manj kot 0,1 mg). Uporabljajo tudi obidoksim v odmerku 250 do 500 mg i.v. (otroci 4 - 8 mg na kg telesne teže i.v.). Dajanje atropina ponavljamo na 5 do 15 minut, obidoksima pa na 2 do 4 ure.

Potreba je skrbna higiena, da se izognemo kontaktne zastrupitve zdravstvenih delavcev (koža-koža). Pri zastrupitvi s sarinom, ki je po terorističnem napadu v podzemni železnici v Tokiu pred nekaj leti zahteval sočasni transport več sto bolnikov, so tudi nekateri zdravstveni delavci kazali znake mioze in glavobola. Prezračevanje prostorov v bolnišnici je deloma bilo učinkovito pri zmanjševanju toksičnih znakov pri bolnikih in zdravstvenem osebju. Kontaminirana oblačila je potrebno 24 ur prezračevati in potem ločeno oprati v pralnem stroju.

Ugotovili so potrebo po boljši opremljenosti zdravstvenih ustanov v Sloveniji in tudi reševalnih vozil s sredstvi za zaščito pred biološkimi in kemičnimi agensi. Ugotavljajo nujnost nadaljnega razvoja komunikacijskih sistemov in potrebo po ustanavljanje centralne baze podatkov o dostopnosti posameznih antidotov po Sloveniji.

NAVODILA SODELAVCEM REVIEJE ZDRAVSTVENO VARSTVO

Navodila so v skladu z **Uniform Requirements for Manuscripts Submitted to Biomedical Journals**. Popolna navodila so objavljena v N Engl J Med 1997; 336: 309-15 in v Ann Intern Med 1997; 126: 36-47.

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Če delo obravnava poskuse na živalih, mora biti iz besedila razvidno, da so bili opravljeni v skladu z etičnimi načeli.

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Obsega naj slovenski in angleški naslov članka. Naslov naj bo kratek in natančen, opisen in ne trdilen (povedi v naslovih niso dopustne). Navedena naj bodo imena piscev z natančnimi akademskimi in strokovnimi naslovi ter popoln naslov ustanove, inštituta ali klinike, kjer je delo nastalo. Avtorji morajo izpolnjevati pogoje za avtorstvo. Prispevati morajo k zasnovi in oblikovanju oz. analizi in interpretaciji podatkov, članek morajo intelektualno zasnovati oz. ga kritično pregledati, strinjati se morajo s končno različico članka. Samo zbiranje podatkov ne zadostuje za avtorstvo.

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primer za članek iz revije, kjer je avtor organizacija:

7. Women's Concerns Study Group. Raising concerns about family history of breast cancer in primary care consultations: prospective, population based study. *BMJ* 2001; 322: 27-8.

primer za članek iz suplementa revije z volumnom, s številko:

8. Shen HM, Zhang QF. Risk assessment of nickel carcinogenicity and occupational lung cancer. *Environ Health Perspect* 1994; 102 Suppl 2: 275-82.

9. Payne DK, Sullivan MD, Massie MJ. Women's psychological reactions to breast cancer. *Semin Oncol* 1996; 23 (1 Suppl 2): 89-97.

primer za članek iz zbornika referatov:

10. Sugden K. et al. Suicides and non-suicidal deaths in Slovenia: Molecular genetic investigation. In: 9th European Symposium on Suicide and Suicidal Behaviour. Warwick : University of Oxford, 2002: 76.

primer za magistrske naloge, doktorske disertacije in Prešernove nagrade:

11. Bartol T. Vrednotenje biotehniških informacij o rastlinskih drogah v dostopnih virih v Sloveniji. Doktorska disertacija. Ljubljana, Biotehniška fakulteta, 1998.

primer za elektronske vire:

12. Mendels P. Textbook publishers extend lessons online. Pridobljeno 23.9.1999 s spletne strani: <http://www.nytimes.com/library/tech/99/09>.

Tabele

Naj bodo natipkane v besedilu prispevka na mestu, kamor sodijo. Tabele naj sestavljajo vrstice in stolpci, ki se sekajo v poljih. Tabele oštevilčite po vrstnem redu, vsaka tabela mora biti citirana v besedilu. Tabela naj bo opremljena s kratkim naslovom. Pojasnjene naj bodo vse kratice, okrajšave in nestandardne enote, ki se pojavljajo v tabeli.

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Morajo biti profesionalno izdelane. Pri pripravi slik upoštevajte, da gre za črno-beli tisk. Slikovno gradivo naj bo pripravljeno:

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- brez polnih površin, namesto tega je treba izbrati šrafure (če gre za stolpce, t. i. tortice ali zemljevide);
- v linijskih grafih naj se posamezne linije prav tako ločijo med seboj z različnim črtkanjem ali različnim označevanjem (s trikotniki, z zvezdicami...), ne pa z barvo;
- v grafih naj bo ozadje belo (tj. brez ozadja).

Črke, številke ali simboli na sliki morajo biti jasni, enotni in dovolj veliki, da so berljivi tudi na pomanjšani sliki. Ročno ali na pisalni stroj izpisano besedilo v sliki je nedopustno. Oddajte originale slik oz. fotografije. Prosimo, da slik ne skenirate sami. Na zadnji strani fotografije naj bo napisana zaporedna številka fotografije, ime pisca in naslov članka, v dvomljivih primerih naj bo označeno, kaj na sliki je zgoraj oz. spodaj. Slike, narisane v računalniških programih, naj bodo posnete v originalnem programu na disketi. Fotografije iz rentgenogramov in diapozitivov naj priskrbi avtor sam. Vsaka slika mora biti navedena v besedilu. Besedilo k sliki naj vsebuje naslov slike in potrebno razlago vsebine. Slika naj bo razumljiva tudi brez branja ostalega besedila. Pojasniti morate vse okrajšave s slike. Uporaba okrajšav v besedilu k sliki je nedopustna. Besedila k slikam naj bodo napisana na mestu pojavljanja v besedilu.

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Merske enote

naj bodo v skladu z mednarodnim sistemom enot (SI).

Kraticam in okrajšavam

se izogibajte, izjema so mednarodno veljavne oznake merskih enot. V naslovih in izvlečku naj ne bo kratic. Na mestu, kjer se kratica prvič pojavi v besedilu, naj bo izraz, ki ga nadomešča, polno izpisan, v nadaljnjem besedilu uporabljano kratico navajajte v oklepaju.

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Prispelo gradivo daje uredništvo v strokovno recenzijo in jezikovno lekturo. Po končanem uredniškem delu vrnemo prispevek avtorju, da popravke odobri in upošteva. Popravljeni čistopis vrne v uredništvo. Med redakcijskim postopkom je zagotovljena tajnost vsebine prispevka. Avtor dobi v pogled tudi prve, t. i. krtačne odtise, vendar na tej stopnji upoštevamo samo še popravke tiskovnih napak. Krtačne odtise je treba vrniti v treh dneh, sicer menimo, da avtor nima pripomb.

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Manuscripts should be written in Word for Windows word processor.

Contribution should be typed or printed on white bond paper and double-spaced with margins of at least 25 mm. Scientific articles should be divided into following headings: Introduction, Methods, Results, Discussion and Conclusions. Other types of articles and review articles can be designed differently, but the division in headings and subheadings should be clearly evident from the size of characters in the titles. Headings and subheadings should be numbered decadally by standard SIST ISO 2145 and SIST ISO 690 (e. g. 1, 1.1, 1.1.1 etc.). Manuscript should be accompanied by an accompanying letter signed by all authors. It should include the statement that the article has not yet been published or sent for publication to some other journal (this is not required for abstracts and reports from professional meetings), and that the manuscript has been read and approved by all the authors. Name, address, telephone number and e-mail address of the responsible author, who will be responsible for communication with the editors and other authors should be cited.

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The second page should carry the abstract in Slovene and English. The abstract of the scientific article should be structured and of no more than 250 words, the abstracts of other articles should be unstructured and of no more than 150 words. The abstract should summarize the content and not only enumerate the essential parts of the work. Avoid abbreviations. Abstract should be written in third person. When the paper is written in English language, the abstract will be published in Slovene. The abstract of a scientific article should state the purpose of the investigation, basic procedures, main findings together with their statistical significance, and principal conclusions. 3 - 10 key words should be cited for the purpose of indexing. Terms from the *MeSH - Medical Subject Headings* listed in *Index Medicus* should be used. The abstract should normally be written in one paragraph, only exceptionally in several. The author should propose the category of the article, but the final decision is adopted by the editor on the base of the suggestion of the professional reviewer.

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4. Goldberg BW. Population-based health care. In: Taylor RB, editor. Family medicine. 5th ed. New York: Springer, 1999: 32-6.

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5. Barry HC, Hickner J, Ebell MH, Ettenhofer T. A randomized controlled trial of telephone management of suspected urinary tract infections in women. *J Fam Pract* 2001; 50: 589-94.

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6. Anon. Early drinking said to increase alcoholism risk. *Globe* 1998; 2: 8-10.

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8. Shen HM, Zhang QF. Risk assessment of nickel carcinogenicity and occupational lung cancer. *Environ Health Perspect* 1994; 102 Suppl 2: 275-82.

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11. Bartol T. Vrednotenje biotehniških informacij o rastlinskih drogah v dostopnih virih v Sloveniji. Doktorska disertacija. Ljubljana, Biotehniška fakulteta, 1998.

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