FUTURE TRENDS IN MORBIDITY IN GENERAL PRACTICE: THE LIMITATIONS OF BIOMEDICAL FACTORS

PRIHODNJI TRENDI OBOLEVNOSTI V SPLOŠNI PRAKSI: OMEJITVE BIO-MEDICINSKIH DEJAVNIKOV

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Received: 2.4.2003 - Accepted: 13.5.2003

Original scientific article
UDC 616-084

Abstract

This presentation explores the future challenges and limitations of general practice. This exploration is essential for general practice to (continue to) make the best possible contribution to healthcare in the community.
First, the domain of common morbidity will be explored, which represents the clinical experience in general practice. Some of the changes in morbidity in the population will be reviewed, and examples given of conditions with a substantial increase or decrease in the coming decades. But these changes take nothing away from the key feature of general practice: providing medical care in an environment of low probability of severe disease.
Therefore general practitioners in the coming years will use strategies and techniques as in the past to deal with the consequent clinical uncertainty and increase their clinical acumen: the personal relation with patients and their families over time, emphasis on a good understanding of the individual, and the building of a working relationship in dealing with illness and disease (empowerment).
Of particular importance is the rapid development of a range of new diagnostics. This development can strengthen as much as threaten the function of the general practitioner and it re-enforces the need to protect patients against undue testing. Routine scientific evaluation of new tests in the general practice setting is essential to do this. This way the general practitioner of the future will be able to provide evidence based medicine, but even more important, continue to present care that fulfils the moral obligations for all individuals in the community.

Key words: general practice, morbidity, future

Izvirni znanstveni članek
UDK 616-084

Izvleček

Ta predstavitev raziskuje prihodnje izzive in omejitve v splošni praksi. Raziskovanje je bistvenega pomena za splošno prakso, da bo še naprej naredila vse, kar je le mogoče, da bo prispevala k zdravstvenemu varstvu v skupnosti.
Prvič: raziskali bomo področje splošne obolevnosti, ki predstavlja klinično izkušnjo v splošni praksi. Nekatere spremembe v obolevnosti prebivalstva bomo ponovno pregledali in dali primere stanj, katerih število se bo v prihodnjih desetletjih bodisi pomembno povečalo, bodisi pomembno zmanjšalo. Vendar ta stanja ne odvzamejo ključnih značilnosti splošne prakse: zagotavljanju zdravstvene nege v okolju, kjer je majhna verjetnost hude bolezni. Zato bodo splošni zdravniki v prihodnjih letih uporabljali strategije in tehnike kot v preteklosti, ko se bodo ukvarjali s posledično klinično negotovostjo in povečali svoj klinično prodorni um: oseben odnos z bolniki in sčasoma z njihovimi družinami, poudarek na dobrem razumevanju posameznika in izoblikovanje delovnega odnosa pri ukvarjanju z boleznijo (pooblastilo).
Še posebno pomemben je hiter razvoj niza novih diagnostik. Ta razvoj lahko tako okrepi kot ogrozi funkcijo splošnega zdravnika, hkrati pa okrepi tudi potrebo po zaščiti bolnikov in bolnic pred nepotrebnimi preiskavami. Rutinska znanstvena evolucija in novi pregledi v okolju splošne prakse so bistvenega pomena, da se to doseže. Na ta način bo splošni zdravnik prihodnosti lahko zagotovil medicino, ki temelji na dokazih, in, kar je še pomembneje, še naprej zagotavljal zdravstveno varstvo, ki izpolnjuje moralne obveznosti vseh posameznikov v skupnosti.

Ključne besede: splošna praksa, obolevnost, prihodnost

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This presentation explores the trends and developments in clinical medicine and general practice in order to identify future challenges and the limitations of general practice. A responsible discipline prepares itself for the challenges of tomorrow, and it is a sign of leadership to explore what the future may bring. At the same time, this title brings with it the notion of time - a topic which in general practice, with its emphasis on continuity of care and longitudinal observations of patients' health and wellness, has a special affinity with. This paper will analyse time and the future of general practice with respect to bio-medical trends. The žfuture', however, is part of real life - taken for granted and by and large unquestioned. Reading the trends of time is a popular exercise in medicine, highlighting the needs and demands new groups of patients with new technology and rallying public support - from HIV/AIDS to men's health and from malaria to genetics. There are good reasons for general practice to work together and make its case. Essentially, in the case for general practice is the virtues of having a horizontal, integrated approach to health in the population, as opposed to the vertical perspective of intervention-driven health care or at distinctive groups in population targeted initiatives. Even more important for the leadership of the discipline is whether the predicted future can be accepted as a template to modify the best possible contribution of general practice to health and health care. Or are there serious writings on the wall of the future and would it be better advised to influence that future before it catches-up with us? This paper will subsequently analyse:

- trends in health problems encountered in general practice;
- the dissemination of innovations in medical care, based on the example of genomics;
- time and the general practitioner: the use of 'future' in daily practice;
- the future: friend or foe.

In analysing the content of general practice it is important to acknowledge the direct relation of clinical content with the place and function of general practitioners (GP) in health care. However, as the latter may vary from health care system to health care system, it is helpful to find a generic common ground.

Domain of general practice

The 'ecology of medical care' as described by White (1) and more recently by Green et al (2) present the most succinct empirical way to define the content of general practice in relation to the position and function of GPs. In the community, individuals regularly experience health problems, of which the large majority are managed without any interference by the medical profession. Interestingly, the finding of Green et al (2) show that individuals quite often consider contacting a physician, without actually doing so. This may underline the possibilities of patients to cope with their health problems themselves. In about 10% of the episodes of experienced health problems, medical opinion is actually sought after and this is the domain of general practice. Hospital care or referral to a non-primary care specialist is the case in less than 10% of presented morbidity.

The ecology of medical care points to three distinct aspects of general practice that will be returned to in this paper:

1. There is a specific spectrum of presented morbidity. This constitutes the large majority of health problems and relates directly to the community it serves. Different communities, however, may vary with respect to their morbidity pattern.
2. There is a transition of signs, symptoms and diseases from the community into health care. With the presented health problem there enter the patients' expectations, needs and demands in the surgery (3).
3. Patients and their episodes of health problems that end-up in the hospital and/or specialist sector, form a distinct selection compared to the morbidity pattern in general practice. This points to a task distribution within the health care system that makes the system work efficiently. One of the consequences is that GPs work in an environment with specific possibilities of common and severe illnesses, usually summarised as 'low probability of severe disease'. This has substantial consequences for the application of diagnostic procedures as the predicted value of tests will differ from the hospital setting.

Integrating patients' needs and expectations in the management of the most important morbidity in the population, while dealing with the inherent uncertainty of low probabilities is the clinical domain of general practice. This is where research, quality assessment and training are directed. In comparing the studies from 1961 (1) and 2001 (2) the similarity over time is striking. In this it should be taken into account that in the 40 years that separate the two studies, general practice (family medicine) has been under a great strain to maintain its position in the US health care system. It

suggests that despite substantial changes, the template of the ecology of medical care has remained valid, and can serve for the coming years. In this template the current problems of recruitment and containment in the services should be considered. This is beyond the brief of this paper, therefore it may suffice to stress that unconventional measures to solve manpower problems should acknowledge the need of highly qualified family doctors to deal with the above listed three elements of the complexity of general practice.

Trends in the health problems encountered in general practice

Sentinel systems are recommended as a generic method to initiate and focus general practice research (4) and there are increasing numbers of data bases reporting health problems encountered in general practice, allowing analysis of its clinical content. In Table 1 the example is given of the top ten most common acute and chronic diseases of the Continuous Morbidity Reg-

Table 1A. Age specific incidence of most common primary care morbidity. Incidence: number of new cases/ 1,000 patients practice list/year. /
Tabela 1A. *Starostno standardizirana incidenca najpogostejše obolevnosti v osnovni zdravstveni. dejavnosti.* Incidenca: število novih primerov/1.000 bolnikov na leto s seznama splošne prakse.

Illness / Bolezen	75+ y. / 75 let+	65-74 y. / 65-74 let	45-65 y. / 45-65 let
Common Cold / Navaden prehlad	210	194	153
Urinary Tract Infection / Infekcija sečnega trakta	149	99	40
Ear Wax / Ušesni vosek	126	106	59
Bruse, Contusion / Zmečkanina, obtolčenina	102	41	32
Dermatitis / Dermatitis	86	78	61
Psychosomatic Complaints / Psihosomatske težave	53	52	86
Constipation / Konstipacija	53	19	10
Myalgia / Mialagia	48	53	66
Acute Bronchitis / Akutni bronhitis	47	30	18
Low Back Pain / Bolečina v spodnjem delu hrbtenice	35	39	47

Source: Nijmegen Continuous Morbidity Registration 1991-1995 (5, 6, 7) / Vir: Nijmegen Continuous Morbidity Registration 1991-1995

Table 1B. *Age specific prevalence of most common primary care chronic diseases.* Prevalence: number of cases/1,000 patients practice list/year. /
Tabela 1B. *Starostno standardizirana prevalenca najpogostejšig kroničnih boleznih v osnovni zdravstveni dejavnosti.* Prevalenca: število primerov/ 1.000 bolnikov na leto s seznama splošne prakse.

Disease / Bolezen	75+ y. / 75 let+	65-74 y. / 65-74 let	45-64 y. / 45-64 let
Osteoarthritis hip/knee / Osteoartritis kolka/kolena	326	163	35
Deafness / Gluhost	254	127	30
Obesity / Debelost	218	204	150
Hypertension / Visok krvni tlak	207	233	114
Cataract / Siva mrena	196	60	6
Heart Failure / Odpoved srca	149	44	5
Chronic Ischemic Heart Disease / Kronična ishemična bolezen srca	148	110	27
COPD / COPB	111	105	36
Diabetes Mellitus / Diabetes melitus	109	84	27
Stroke / Kap	100	44	9

Source: Nijmegen Continuous Morbidity Registration, 1991-1995 (5, 6, 7) / Vir: Nijmegen Continuous Morbidity Registration, 1991-1995 (5, 6, 7)

istration Nijmegen the academic research network of the Nijmegen Department CMR/NMP (5, 6, 7). The specific objective of this database is to study the longitudinal dimension of morbidity (6). Based on the recordings of this network a number of explorations have been made of future trends of general practice morbidity.

Methods. The network consists of four general practices in the Nijmegen region (12 general practitioners) recording all presented new health problems, including diagnoses made after referral. Recording started in the four practices in 1971 and has been ongoing ever since in a stable population of about 12,000 patients. Health problems are recorded in reference to the definitions of the International Classification of Health Problems in Primary Care (8), with a high consistency over time (9, 10). The strength and limitations of the registration are directly related to the Dutch health care structure, and in particular to the fact that the general practitioner (i) serves as the point of entry into the health care system ('gate keeper'); and (ii) has a 'defined' list of patients ('the practice population'). As a consequence, the network collects all morbidity for which professional medical care is sought in a defined population.
Two analyses from the database are considered: an extrapolation of disease frequency 1996 - 2050 based on the predicted ageing of the (Dutch) population (11, 12), and a study of trends over the time 1971-2001 of the age of the first myocardial infarction and sudden cardiac death (13).
Results. The steady increase in chronic diseases over the past decade should be maintained in the coming years, among the currently common morbidity, such as a stroke, heart failure, cataract (Figure 1) and among the currently less common diseases (Parkinson's disease, prostate hypertrophia and glaucoma - Figure 2). The general pattern is that of a clear increase during the period 1996 - 2030, with a levelling-off after that time. On the other hand, impetigo, otitis media, neonatal conditions, pregnancy-related care and asthma are among the diseases that gradually lose some of their prominence. An increased demand for primary care services of up to 16% by the year 2050 can be anticipated - mainly due to increased demands for home visits in the elderly. Increases of referrals (Table 2) are expected for physicians, geriatricians, radio-therapists and cardiologists, while referrals to paediatricians, gynaecologists and ENT surgeons decline. Since 1981 the age of the first myocardial infarction has been increasing, in particular in male patients, while the prevalence of sudden cardiac death is declining.

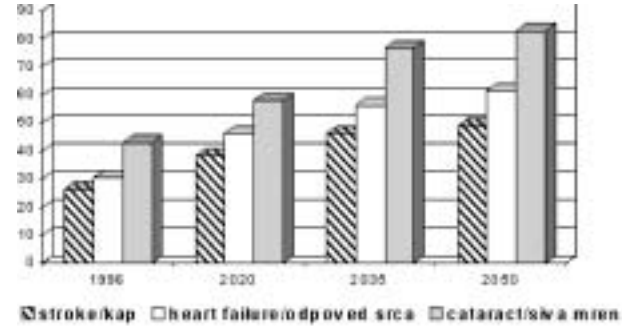

Figure 1. *Morbidity General Practice 1996 - 2050 (CMR)*
Slika 1. *Obolevnost v splošni praksi 1996 - 2050 (GSO)*

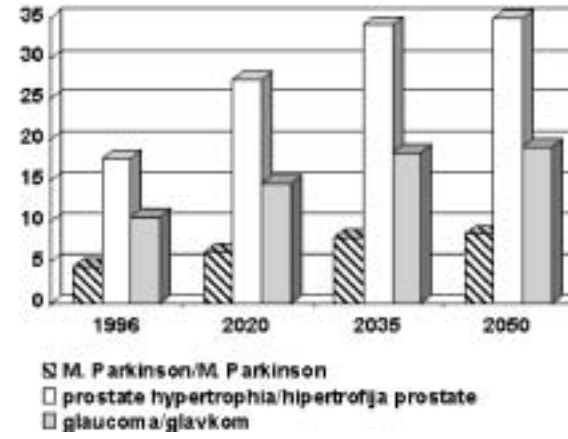

Figure 2. *Morbidity General Practice 1996 - 2050 (CMR)*
Slika 2. *Obolevnost v splošni praksi 1996 - 2050 (GSO)*

In conclusion, general practice data enable the monitoring of trends in morbidity. The overall pattern of health problems in general practice appears to remain quite stable, with few changes expected in the current low probability of serious morbidity of its practice setting. But within this stable pattern 'new' health problems make themselves present in the community. The decline in acute ischaemic cardiac events is in all probability due to prevention as much as better interventionist cardiology care (12), and apparently is accompanied by the increase of heart failure. These observations allows general practice to direct its performance towards these 'new' problems.

The dissemination of innovations in medical care: a case study of genomics

Genetics is presenting medicine with new perspectives and possibilities and no analysis of the future of medicine can escape going into genetics. Medicine is at the

Table 2. *Expected number of referrals in a standard general practice: percentual increase from 1996 (12).*
Tabela 2. *Pričakovano število napotitev v splošni praksi: povečanje v odstotkih od 1996 (12).*

	1996	2020	% increase / % povečanja	2035	% increase / % povečanja	2050	% increase / % povečanja
General physician / Zdravnik splošne medicine	18	21	19	23	32	24	37
Chest physician / Pulmolog	7	8.2	21	9	28	9	28
Cardiologist / Kardiolog	17	21	27	23	39	24	42
Rheumatologist / Revmatolog	2	3	9	3	17	3	17
Paediatrician / Pediater	8	7	-18	7	-17	7	-18
Surgeon general / Splošni kirurg	39	43	10	46	17	47	19
Surgeon cardio-vasc. / Kirurg za srce in ožilje	2	2	27	2	40	2	33
Surgeon plastic / Plastični kirurg	7	7	1	7	-1	7	0
Surgeon oropharyng. / Kirurg za usta in žrelo	2	2	0	2	-6	2	-6
Urologist / Urolog	14	15	7	16	14	16	15
Surgeon orthopaedic / Kirurg ortoped	26	28	6	28	8	28	9
Surgeon paediatric / Pediatrični kirurg	2	1	-18	2	-12	1	-18
Radiotherapist / Radiolog	0	1	50	1	75	1	75
Surgeon eye / Kirurg za oči	35	42	19	46	31	46	33
ENT-surgeon / Kirurg za oči, nos in grlo	27	28	4	30	8	30	8
Dermatologist / Dermatolog	20	20	3	20	3	20	4
Gynaecologist / Ginekolog	25	22	-12	22	-14	21	-15
Rehabilitation physician / Rehabilitacijski zdravnik	3	3	12	3	24	3	28
Geriatrician / Geriater	1	1	50	1	83	1	100
Psychiatrist / Psihiater	4	4	3	4	-3	4	-3
Neurologist / Nevrolog	17	20	13	21	20	21	21
Total / Skupaj	**566**	**589**	**4**	**604**	**7**	**608**	**7**

CMR based data / Podatki temeljijo na grobi stopnji obolevnosti (GSO)

brink of a genetic break-through that will revolutionalise its potential. Following the concept of the genetic paradigm most diseases as they are known today will be redefined in a causal, pathophysiological way with possibilities of intervention and prevention on a scale unheard of before. A Dutch committee recently reviewed the contribution 'genetics' was going to make on medical care in the coming decade (14). Its report highlights three relevant implications for general practice. Firstly, a number of health problems were identified where genomics would contribute - in each case adding innovative perspectives to medical care, with at the same time substantial effects for the health care budget: the identification of micro-organisms and their sensitivity to antibiotics, cytology in cancer screening (cervical cancer and HPV), pharmacogenetics and (orphan) drugs production, genetic screening (breast cancer, haemochromatosis, hyperlipidemia, familial Mediterranean fever. Secondly, general practice will be involved, and the important health problems in the community will benefit from it (see the diagnostic testing in microbiology) but the transfusion will be step by step, rather than a storming take-over. For general practice, causal testing of infectious episodes is particularly interesting and here is the third observation. Genetic techniques will make it possible to identify pathogens within a few hours, including the assessment of antibiotics sensitivity, making it possible to prescribe rational treatment directly after the first presentation of infection at the patient's bedside. No longer has there to be a delay to initiate causal treatment. This is a world apart from current general practice, where opportunistic considerations dictate a restrained use of diagnostic facilities - the large majority of patients are better before the diagnostic tests become available.

Yet, the application of (costly) genetics-based testing would not change that bottom line: the majority of patients would still have got better without any medical treatment, thus limiting the value of a diagnostic procedure. Genomics-driven microbiological testing in general practice is in fact not so much a question of the smooth implementation of a technique, but must be

based on the evidence of the benefits for patients with infectious diseases in the general practice setting. This is the core of evidence-based medicine: exploration of its added value for clinical decision making in general practice before deciding on its place. The genetic 'revolution' will bring with it the need of a fundamental reassessment of the diagnostic values of many tests. It offers a golden opportunity for general practice to lead this time from the front and arrange a programme of systematic testing of new tests and introduce them into regular general practice only on the basis of established evidence.

Time and the general practitioner

The future of the evolution of our past and present, and general practice in its concepts is closely related with time and the use of time. Continuity of care, patients' family background, the patients' medical life history, the professional relationship with patients over time, follow-up and the masterly inactivity to 'watch and wait' for the natural course of the illness, 'prognostic allocations', all deal in one way or another with time, past, present and future, as an ally in the GPs' professional equipment.

The Nijmegen philosopher Paul van Tongeren (15) recently published an essay on 'time' that opens an interesting perspective. 'Time' in his view is our experience of time: slow and without movement when we are bored, flying away when we are involved and challenged. To cope constructively with time it is important to have a grip on time, to be aware of the possibilities of the present as this bridges the past to the future. General practice has a strong commitment to the present: the patient here and now with the presented symptoms - on what medicine today has on offer. The first step in addressing the patients' problem is in exploring the patients' expectations. As these expectations are often grounded in the experience of a previous episode of illness and treatment, this means bridging the past to the present. 'Continuity of care' in this perspective should be seen as an ongoing proactive re-alignment, of the patients' current condition in the perspective of his or her medical life history and experiences with health care, in the light of today's state-of-the-art medicine: a regular re-defining of the GP's objectives of care for this patient in the ever forward movement in the time of the here and now. In part, the expectations of patients are based on the ever optimistic perspectives of new innovative interventions. Often the bridging of the future back to the present is the bringing of bad news: exciting as these perspectives might be for today's treatment of this patient, the far reaching implications of the genome or the stem cell are null and void in the current ailment.

Conclusion. The future, friend or foe.

This paper has extrapolated down-to-earth trends of morbidity in general practice for the first part of the 21st century and analysed the case of high brow genomics for the coming decade. How does this fit together and what are the implications of the review of time in general practice?

General practice performs medicine in the context of the community. Biomedical developments present new perspectives for the treatment and care of important diseases in that community. It is an interesting observation how quickly the important developments of yesterday are forgotten for their innovative perspective - be it immunisations, antibiotics or preventive cardiology- and how much their contribution is taken for granted. Medicine will continue to unravel the secrets of a disease, and from the discovery of mechanisms and pathways of diseases it will be possible to make further giant steps in the treatment and prevention of disease. Given the emphasis of treatment of patients in primary care, co-operation of the discipline of general practice will be ever more important to sustain clinical research. Much more than now, general practice should realise that every medical innovation comes with side effects and limitations of new diagnostic and therapeutic interventions. The paradox of medical progress is that in general practice the limitations and side effects of these innovations take centre stage - much more than the newly conquered problems themselves. That is why there is the need to gain better insight and better tools to cope with the use and demands of medical care, somatisation and medicalisation. Exploration of this is grounded in the theory of general practice. Strengthening of this will contribute to a more effective and safer medical care. That is leading to a truly 'evidence-based medicine.

Though there is little wrong with medicine there is a lot wrong with its PR and marketing, and that is where the individual time line of the patient gets blurred. In the display of innovations, important health problems in the community and the urgency of addressing them here and now, are overshadowed by technical navel contemplating. For roughly a decade, mankind is at the dawn of an entirely new medicine but its implications for the patient in general practice are limited for at least some time to come. Not the potential fruits of

its maturing, but the way medicine is attempting a quick cashing-in on it, gives reasons for deep concern. This mixes up realistic expectations of today's care with the spectacular panorama of tomorrow's care and misleads patients in what to expect from their doctors. This has a devastating effect on medical care and there lies the big problems of tomorrow. Privatisation instead of solidarity, individual demands that overshadow societal needs, health and medical care as a marketing product rather than a basic human right, threaten the perspective of health and wellness for all. Solidarity and equity are more than just two concepts to be exchanged for other as one wishes. Solidarity and equity are an integral part of the European history, and they form the very roots of general practice.

For general practice there remains little choice than to stay put and remain faithful to these principles. That is what general practice has done with a lot of success over the past decades. It is helpful to seek partners and the positive aspect of the current developments in the discipline is the support universities and medical teaching may give. The reform of medical education focuses amongst others on these core issues - health problems in the community, patient-centeredness and evidence-based medicine. With general practice back in the academic mainstream of medicine (16), the discipline may be quite capable of mastering the challenges.

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