

## Seeing a general practitioner in Latvia and Norway – a comparative study

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### **Summary**

*Context:* Since independence in 1991, the health care system in Latvia has changed from a specialist oriented system to a general practitioner based first line medical service. Information about the contents of the services in the new Latvian general practice is scarce.

*Objective:* To describe reasons for encountering Latvian general practice, registered as diagnoses, compared to Norwegian general practice, with a particular focus on infectious diseases.

*Design and setting:* Adult (18 years or older) patients' reasons for encounter were recorded in ten general practices in Latvia (October 2001), and in 60 general practices in Norway (winter and autumn 2001).

*Subjects:* 948 Latvian and 1037 Norwegian patients.

*Results:* The male:female ratio was equal in the two patient populations. The Latvian patients were significantly younger than the Norwegians (mean age 41.4 years versus 51.0 years,  $p < 0.001$ ). The distribution of ICPC diagnoses in the two patient populations was significantly different ( $p < 0.001$ ) with a higher proportion of respiratory and digestive illnesses in the Latvian population, and a higher proportion of skin-problems and routine controls of pregnant women in the Norwegian population. Twenty-seven percent of the Latvian patients were diagnosed as having an infection, most commonly respiratory tract infections. Of those who had an infection, 48% were prescribed antibiotics, mainly penicillins. 14% of Latvian GP's were highly or very highly influenced by their sense that patients would attend another physician if they did not prescribe antibiotics.

*Conclusion:* In this study we found significant differences in distribution of diagnoses in general practice in Latvia and Norway. Among patients with a diagnosis of infection in Latvia, 48 % received antibiotics, which is considered as

*a high proportion. One fourth of Latvian GP's felt influenced by their patients' expectations for prescriptions of antibiotics.*

*Key words: general practice, infections, antibiotics, prescription, Latvia, Norway*

## Introduction

Since independence in 1991, the health care system in Latvia has changed from a specialist oriented health care system to a general practice (GP) based first line medical service. However, preconditions for offering and taking advantage of general practice have been under constant change and have not been settled yet (2005). While all health care services used to be free of charge in the Soviet times, there is now a fee to pay, but the reimbursement principles from sickness funds are varying and have been subjected to recurring changes. Profound shifts in the economy have generated new socioeconomic class differences that affect the possibilities to pay for health care. This is of particular importance for the retired and the elderly who generally have greater needs when it comes to health care.

In the year 2001, an average Latvian encountered any medical outpatient service 4,8 times (1). However, this figure also includes e.g. seeing a specialist, as the new system remains to be fully introduced. The income level among Latvian people has recently been shown to be an important determinant for the availability of health services, and also for the level of trusting the health care system (2). This implies that other factors than medical needs affect the doctor seeking habits. Statistics specifying kind of and reasons for doctor encounters are not available for 2001.

## Demography and health

At the beginning of 2001, the Latvian population of about 2.4 millions were distributed in urban (68%) and rural (32%) areas and consisted of only 46% (1,2). The gender distribution is skewed with a surplus of females in all age groups from 30 years of age. This sex difference is especially pronounced for the over 60 group. Thus, a typical patient seeing a Latvian GP could be expected to be an elderly woman living in a town. Furthermore, the number of deaths in 2001 outnumbered births, so the population growth was negative by 5.7 per thousand inhabitants. Among male deaths, 23% were caused by neoplasms as compared to 19% among females. There were 57% circulatory system deaths among males (females 75%); 20% accident deaths among males and 7% among females, for the time being a pattern which Latvia share with the two other Baltic states, Estonia and Lithuania.



*The health care system in Latvia used to be specialist and hospital based. The picture shows Hospital Number 1 in Riga. (Photo: Ø. Larsen 2004)*



*Future primary health care in Latvia will be based on general practitioners and a list patient system like in Norway. Here: A general practitioner in Riga (dr. Kilkuts) making a house call to a twelve year old patient with a sore throat. (Photo: Ø. Larsen 2004, taken with the consent of the patient and her family.)*

In all societies experiencing profound social and economic transitions, infectious diseases commonly prove to be a special threat. An appropriate use of antibiotics is one important factor in the efforts to counteract this risk. From independence up to May 1, 2002, antibiotics could be bought over the counter in pharmacies without a physician's prescription.

In order to shed some light into the new Latvian general practice system, a comparative study was set up in a selection of practices in Latvia and in Norway. The purpose of the study was to describe reasons for seeing a general practitioner (GP) in Latvia as compared to Norwegian general practice, although accepting that the very different social contexts would make precise conclusions hard to draw. The study also included a closer investigation into the use of antibiotics in Latvia as related to Norway (3).

## Material and methods

### Latvia

In ten Latvian general practices (five in urban and five in rural areas) the GPs recorded all office encounters with adult patients (more than 18 years of age) during a two weeks' period in October 2001. Medical personnel consecutively filled in pre-tested forms at the patient encounter. The following data were recorded: patients' year of birth, gender, reason for seeing the doctor (registered as the diagnosis), and description of further actions taking place, including prescriptions for antibacterial drugs. The physicians were requested to indicate if they thought that the patient had an infection, and to what extent factors such as patient's demands and time constraints had influenced their decision to prescribe antibacterial drugs. Every fifth patient was invited to participate in a study regarding his or her risk perception in relation to various infection threats, results of which are published separately (4).

The authors coded the GP's diagnoses according to main organ system ICPC codes.

### Norway

Two classes of fifth year medical students in Norway (n=134), doing their mandatory service in general practice, recorded patients' reasons for seeing a GP among patients seen in their two first days of service (January/March and September/October 2001). The students were located in 60 different general practices. Each student was to observe a GP on a normal office day and to record the first ten patient encounters. The following data were recorded: patients' age, gender, reason for seeing the physician (the diag-

nosis), and description of further actions taking place. Only patients over the age of 18 years were included in the present study. Due to a new legislation on drivers licence that were to become operative in 2002, there were a number of encounters (n=60) for specific health certificates during autumn 2001. These encounters, representing an extraordinary situation, were excluded from the study material. Two patients, whose diagnoses were missing, were also excluded from the material.

## Analysis

Data from both surveys were coded and analysed at the Institute of General Practice and Community Medicine at the University of Oslo. Reasons for encounter (the diagnoses) were classified and coded according to the International Classification of Primary Care (ICPC) (5). Diagnoses that could not be classified into any organ diagnosis were coded in the ICPC category A (general and unspecified): e.g. 39 Latvian patients with diagnosis “viral infection” and 15 Latvian patients with diagnosis “trauma”. When more than one diagnosis was recorded, the first mentioned was coded and included in the study. Differences between proportions were analysed by Chi square tests and t-tests in the SPSS programme, version 10; level of significance was set to p-values “ 0.05.

## Results

Altogether 1985 patient encounters were recoded during the survey, 948 in Latvia and 1037 in Norway. The proportion of males was almost the same in the Latvian and Norwegian patient populations; 40.8% and 39.6% respectively.

The Latvian patients were significantly younger than the Norwegian were (mean age 41.4 years versus 51.0 years,  $p<0.001$ ). In line with this, the age distributions within the ICPC groups were also significantly different in the two patient populations: the Latvian population had a higher proportion of patients in the younger age groups than the Norwegian population. While only 15% of the Norwegian patients with heart- and circulatory diseases were younger than 50 years of age, 35% of the Latvian patients were in this age group ( $p<0.001$ ). Only in the category female genital problems there were more Norwegians than Latvians in the youngest age group ( $p<0.001$ ).

In Latvia, diseases of the respiratory system (20%) made up the largest group, followed by musculoskeletal problems (16%), and heart and circulatory diseases (15%). The distribution of ICPC diagnoses in the two pa-

*Table 1. Distribution of ICPC diagnoses in Latvian and Norwegian general practice: consultations with 948 Latvian and 1037 Norwegian patients.*

Organ system according to ICPC	Latvia n (%)		Norway n (%)	
A-General and unspecified	114	(12)	42	(4)
B- Blood and immune system	10	(1)	4	(0.4)
D- Digestive system	71	(8)	42	(4)
F- Eye	8	(1)	16	(2)
H- Ear	8	(1)	10	(1)
K- Heart and circulatory system	142	(15)	176	(17)
L- Musculo-skeletal system	155	(16)	189	(18)
N- Neurological	38	(4)	39	(4)
P- Mental	56	(6)	73	(7)
R- Respiratory	189	(20)	145	(14)
S- Skin	32	(3)	72	(7)
T- Endocrine/Metabolic	44	(5)	62	(6)
U- Urological	30	(3)	21	(2)
W- Pregnancy	14	(2)	70	(7)
X- Female genital system	35	(4)	45	(4)
Y- Male genital system	2	(0.2)	14	(1)
Z- Social problems*	0	(0)	17	(2)
Total	948	(101)	1037	(100)

\* "Social problems" includes administrative encounters such as health certificates (other than those for drivers' licences).

tient populations was significantly different ( $p < 0.001$ ) (Table 1). Social problems were only recorded as reason for contact in the Norwegian population. The proportions of major disease groups such as heart and circulatory diseases, musculoskeletal diseases, and mental diseases were fairly equally distributed within the two patient populations. However, there were higher proportions of respiratory and digestive diseases in the Latvian population, and a higher proportion of skin problems and pregnancies in the Norwegian population. The gender distribution within the different ICPC groups was equal, with two exceptions: the Latvian population had a higher proportion of males with digestive diseases (59% versus 36% in Norway,  $p < 0.05$ ), and more males among the Norwegian patients had metabolic/endocrine diseases (39% versus 16% in Latvia,  $p < 0.05$ ).

In the Latvian study, some more information about the consultations was recorded: New symptoms were the reason for consultation by 58% of the patients, whilst 33% had a follow up consultation. Nine percent visited the physicians for other reasons, such as medical certificates etc. More men (63%) than women (55%) presented new symptoms ( $p < 0.01$ ).

*Table 2. Antibiotics given to 253 patients with infectious diseases in Latvian general practice divided on diagnoses. Numbers of patients.*

ICPC Main classes	Diagnosis as recorded by Latvian GPs	N	Number given anti- biotics	Number given different antibiotics				
				Peni- cillins	Floaxin, Cephalo- sporin	Macro- lides	Sulfoni- damides, Fucic acid de- rivates Furagin	Tetracy- clines
A General and unspecified	Lympha- denitis	1	1	1				
	Borreliosis	1	1					1
	Viral infection	39	0					
	Trauma	1	1		1			
D Digestive	H.pylori infection / gastric ulcer	4	4	2		2		
	Other	6	1		1			
F Eye	Conjunctivitis	1	0					
H Ear	Otitis	4	2	2				
L Musculoskele- tal system	Arthritis	2	0					
R Respiratory	Acute/chronic bronchitis	4	4	2	1	1		
	Chest infection/ Pneumonia	78	42	31	2	9		
	Pharyngitis/ Tonsillitis	52	20	12	3	1	4	
	Sinusitis	20	16	12	2	1		1
S Skin	Furunculosis/ Infected wound	6	5	2	1	2		
	Fungal infection	2	0					
	Herpes Zoster Pyoderma/	1	0					
	Streptoderma	3	3			1	1	1
	Scabies	1	0					
U Urological	Cystitis/ Urinary tract infections	25	20	2	11		6	1
X Female genital system	Adnexitis	2	2	2				
Total		253	122	68	22	17	11	4

*Table 3. Latvian physicians' view of factors influencing their decision to prescribe antibiotics to patients diagnosed with infections (n=122). Percentages.*

	1 Very Little	2 Little	3 Moderate	4 Highly	5 Very Highly
How certain were you that antibiotics were medically indicated?	1	4	10	39	46
Did patient demand influence your decision to prescribe?	74	18	6	2	1
Did time constraints influence your decision to prescribe?	87	12	2	0	0
Did your sense that your patient would attend another physician if you did not prescribe antibiotics?	62	13	12	3	11

In all, 27% (253) of the Latvian patients were diagnosed by the physician as having an infection; 46% of these were males. An additional 27 patients perceived that they had a diagnosis indicating an infection, but that was not confirmed by the physician.

Sixty-one percent of the 253 cases registered as infections were respiratory tract infections: 70 cases were diagnosed as chest infection, 42 cases as pharyngitis, 20 cases as sinusitis, ten cases as tonsillitis, eight cases as pneumonia, and four cases as bronchitis. An additional 15% (39 cases) were diagnosed as having a viral infection, which might have been in the respiratory tract. The second most important group was urinary tract infections (19 cases). Almost half (48%) of the patients diagnosed with an infection were prescribed antibiotics. Penicillins were the most common antibiotics given, followed by macrolides and floxacins. Thirteen percent of the patients who had infections were referred to a specialist.

In the 122 cases where antibiotics were prescribed, the Latvian physicians were requested to indicate to what extent they were certain that antibiotics were medically indicated, and if time pressure or patients demands had influenced their decision to prescribe (Table 3). In most cases the



physicians felt certain that antibiotics were indicated and that patients' demands and time constraints not influenced their prescription practice. However, in 14% of the cases the physicians reported that the decision to prescribe antibiotics was highly or very highly influenced by a fear that the patient would seek a second opinion if they did not prescribe.

## Discussion

Conditions for health in Latvia have changed substantially in the years after independence. It is of general interest to study the impact of the development on daily life, e.g. on the use of primary medical care as compared to in a country like Norway which has a settled welfare state health service (4,6).

However, there are some important methodological considerations which unavoidably will call for due caution in the interpretation of the results of such a study: Conditions in Latvia are shifting so rapidly that any study from the transition period will be a cross-sectional snapshot from an ever changing context. The material in the two studies was collected at different times and not originally meant to be compared. Differences in questionnaire design and instructions given to those who collected the data may have influenced the results. Random misclassifications of diagnoses may have occurred in the Norwegian material where as many as 134 students were collecting the data. In Latvia, only ten different physicians set the diagnoses. However, systematic errors may nevertheless have occurred due to the physicians' different diagnostic and therapeutic habits.

In some cases, the diagnoses could not be placed in any ICPC organ category, i.e. 39 Latvian patients with "viral infections" and 15 Latvian patients with "trauma". These were put in category A. Many of the viral infections were probably respiratory tract infections and many of the traumas were probably skin wounds or musculoskeletal traumas. This indicates that the proportion of these three diagnoses may have been underestimated in the Latvian material. However, test calculations showed that this possible bias did not affect our main findings in the comparison with the Norwegian group.

Only one diagnosis was recorded for each patient. The physician's or student's decision as to which diagnosis should be recorded might have been biased if focus was placed on major or rare diseases. Diagnostic bias might also have occurred in the Latvian material where the questionnaire focused on infectious diseases and use of antibiotics, i.e. there might be an over-reporting of infectious diseases.

We found some significant differences in diagnoses between Norwegian and Latvian GP-patients. The Norwegian situation in general has recently been described in detail for the diagnostic distribution in general practice (7) and for prescription of antibiotics (8). Differences between Norway and Latvia in our material may, however, to some extent also reflect seasonal variations. There may be more respiratory infections in October in Latvia than in September in Norway. The encounters for pregnancies in Norway were probably mainly maternity check-ups. In Latvia, GPs perform maternity checkups, but a certain share of the pregnant women prefers to see a gynaecologist instead. Furthermore, Latvian physicians usually do not record diagnoses in terms of social problems. This may be due to cultural differences in diagnosing.

We also noted some significant differences in age distribution within the disease groups in Norway and Latvia. This is probably mostly due to significantly younger patients in the Latvian study. In the age group 20-49, 26 out of 652 Latvians (4.0%) and 9 out of 507 (1.8%) Norwegians had hypertension ( $P < 0.05$ ).

## Conclusions

The main finding of this survey is that in general the reasons for encounter (diagnoses) in general practice in the two countries are much the same. There are, however, some important differences as to a higher proportion of respiratory and digestive illnesses in the Latvian population, and a higher proportion of skin-problems and routine controls of pregnant women in the Norwegian population.

The prescription of antibiotics for common infections is high in Latvia. A significant proportion of Latvian doctors were influenced by their feeling that patients would seek another doctor if they did not get antibiotics when seeing the doctor for an infection. This indicates that competition for patients may have influenced prescription patterns in Latvia. Our findings suggest that there is a higher proportion of patients with infections receiving antibiotics in Latvia as compared to in Norway. This more widespread use may reflect that in this period of transition antibiotics until recently have been sold over the counter in Latvia. In the perspective of antibiotic overuse and development of antibiotic resistance, it is important to educate physicians and the public about appropriate use of antibiotics.

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