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REGIONAL INEQUALITIES OF AVOIDABLE HOSPITALISATION IN LITHUANIA

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Summary

Background. *Avoidable hospitalisation is useful in evaluating access and quality of primary and ambulatory healthcare. For Lithuania it is particularly relevant as hospitalisation remains higher than European level and regional inequalities in available healthcare services within country prevail.*

Aim. *This study aimed to assess regional inequalities of avoidable hospitalisation in Lithuania in the period of healthcare restructuring program.*

Methodology. *Regional age-adjusted rates of hospital admissions for a set of ambulatory care sensitive conditions (per 100 000 pop.) were used in this study.*

Results. *A decline of avoidable hospitalisation level was found in 2005–2011. Rural areas had higher avoidable hospitalisation level compare to urban areas, however in case of emergency avoidable hospitalisation the situation was opposite. Inequalities of avoidable hospitalisation existed between administrative regions. Relatively smaller regions had more ACSC hospital admissions.*

Conclusion. *In Lithuania, avoidable hospitalisation was reduced throughout the period of healthcare restructuring program, which supports national plan to strengthen primary healthcare and expand outpatient services in context of inpatient care reduction. The overview of regional differences indicates potentiality of healthcare improvement and social care integration for policy makers and healthcare managers.*

Keywords: *avoidable hospitalisation, hospital admission, ambulatory care sensitive condition, ACSC, inequalities, Lithuania.*

Introduction

Lithuania has undergone major structural changes in health system after the collapse of Soviet Union, where healthcare was organised under Semashko model, typically known for extensive network of healthcare institutions and medical professionals. Despite the structural overcapacity, basic medical supplies were lacking, health technologies and standards of treatment were often outdated, accompanied by poor coordination of healthcare delivery and weak social support system. All together led to a domination of inpatient hospital services and inadequate primary and ambulatory healthcare delivery[1].

In the past 25 years of healthcare restructuring progress, development of primary and ambulatory services and reduction of inpatient care was prioritised[2,3]. Family medicine was introduced into practice and assigned with a function of gate-keeping. Also private general practice was encouraged to maintain and outpatient facilities were enhanced, followed by legislation regulating formal differentiation of primary, secondary and tertiary healthcare delivery issues. In the hospitals, consultation clinics and emergency departments were reinforced in order to meet the requirements of outpatient healthcare development.

Public investment in sustainable development of ambulatory services contributed significantly in assuring quality and access of medical care. National statistics showed that the amount of ambulatory consultations were increased. However, discussions over existing primary healthcare problems are still common. The system is also criticised for unequal distribution of healthcare delivery. Major cities are overloaded with medical centres, while rural regions suffer from physician shortage. Also, general practitioners are not obliged to manage most common diseases by themselves, and thus become simply formal intermediators between patients and specialist care, causing prolonged waiting

1 *Health care systems in transition: Lithuania.* (Copenhagen: World Health Organisation, 2000.)

2 "Lietuvos Respublikos Aukščiausiosios Tarybos nutarimas dėl Lietuvos nacionalinės sveikatos koncepcijos ir jos įgyvendinimo." *Valstybės žinios* 33, 893 (1991).

3 "Lietuvos Respublikos Vyriausybė nutarimas dėl Sveikatos priežiūros įstaigų restruktūrizavimo strategijos patvirtinimo." *Valstybės žinios* 28, 1147 (2003).

time for ambulatory visit of specialist care mainly due to bureaucratic reasons[4]. In the context of social deprivation of rural populations, accessibility barriers emerge making it difficult to appropriately manage health problems in outpatient setting.

Avoidable hospitalisation is an internationally used indicator to evaluate access and quality of primary and ambulatory healthcare5. The principle idea is that hospital admissions of so called ambulatory care sensitive conditions (ACSCs) could be averted if patients were taken care of properly at a primary healthcare level and in ambulatory setting. For Lithuania it is particularly relevant as average hospitalisation remains higher than European level and regional inequalities in available healthcare services within country prevail.

This study aimed to assess regional differences of avoidable hospitalisation in Lithuania in the period of healthcare restructuring program.

Methodology

The rates of avoidable hospitalisation (per 100 000 pop.) were used in this study. Numbers of avoidable hospital admissions were obtained from hospital routine data, and population numbers were received from National Department of Statistics.

National hospital routine data is collected in SVEIDRA (database of Compulsory Health Insurance Fund). SVEIDRA is administered by national sickness fund for hospital reimbursement purposes, and includes basic demographic and clinical information of inpatient cases (i.e. patient's age, sex, place of residence, principal ICD-10 diagnosis, number of bed-days, etc.). Avoidable admissions were defined as any hospital admission of ambulatory care sensitive condition, categorised by the Swedish National Board of Health and Welfare[6]. Categorisation was modified by excluding ACSCs, where additional information on secondary diagnosis or interventions was required, because no such data was recorded in SVEIDRA. Noteworthy that ICD-10-AM was introduced in Lithuania in 2011, but this fact did not change the diagnoses of categorisation in use. Only primary ICD-10 diagnoses were included in the analysis (see Table 1). Active care inpatient cases (including day surgery and day care cases) were included in the study. Longterm cases of rehabilation and

[4] Danguolė Jankauskienė. "Sveikatos priežiūros paslaugų kokybės ir prieinamumo vertinimas. Mykolo Romerio Universitetas." Accessed 2015 08 18. http://ssvp2012.mruni.eu/wp-content/uploads/2011/10/3_Danguole_-Paslaug%C5%B3-kokyb%C4%97s-ir-prieinamumo-vertin.pdf

[5] Zahid Ansari. "The concept and usefulness of ambulatory care sensitive conditions as indicators of quality and access to primary health care." *Australian Journal of Primary Health* 13, 3 (2007): 91-110.

[6] *Quality and Efficiency in Swedish Health Care – Regional Comparisons 2008.* (Stockholm: Swedish National Board of Health and Welfare, 2008.)

patients of sanatoria were excluded. Emergency inpatient cases were defined as those which were admitted urgently (via emergency departments or brought by ambulance), without referral of general practitioner or other medical specialist. A set of outcome was binary and a patient either had or had not been admitted to hospital for any of those peviously mentioned conditions in the final year of healthcare restructuring stages. The years 2005, 2008 and 2011 (from the 1st of January till the 31st of December) were taken into account.

Table 1. Ambulatory care sensitive conditions in accordance with ICD-10 used in evaluation of avoidable hospitalisation

Ambulatory care sensitive condition group	Diagnosis	ICD-10 codes
Chronic conditions	Anaemia	D50.1, D50.8, D50.9
	Asthma	J45, J46
	Diabetes	E10.1-E10.8, E11.0-E11.8, E13.0-E13.8, E14.0-E14.8
	Heart failure	I50, I11.0, J81
	Hypertension	I10, I11.9
	Chronic obstructive lung disease	J41, J42, J43, J44, J47
	Angina pectoris	I20, I24.0, I24.8, I24.9
Acute conditions	Bleeding ulcer	K25.0, K25.1, K25.2, K25.4, K25.5, K25.6, K26.0, K26.1, K26.2, K26.4, K26.5, K26.6, K27.0, K27.1, K27.2, K27.4, K27.5, K27.6, K28.0, K28.1, K28.2, K28.4, K28.5, K28.6
	Diarrhoea	E86, K52.2, K52.8, K52.9
	Epileptic seizures	O15, G40, G41, R56
	Inflammatory diseases of female pelvic organs	N70, N73, N74
	Pyelitis	N39.0, N10, N11, N12, N13.6
	Ear, nose and throat infections	H66, H67, J02, J03, J06, J31.2

Traditional classification of administrative area units was used. Lithuania has 60 municipalities, which are responsible for providing and coordinating primary healthcare within area. Before administrative reform in 2010, municipalities were divided into 10 counties, which are habitually applied in regional comparisons and also used in this study.

Avoidable hospitalisation rates were age-adjusted to the European standard population using direct standardisation method. Statistically significant difference of rates was evaluated with the intersection of 95% confidence intervals. Analysis of components was applied to assess the impact of emergency hospital admissions to overall avoidable hospitalisation rate of the regions. Statistical analysis was performed with MS Excel and IBM SPSS 20 software.

Results

In the vast majority of the regions, avoidable hospitalisation was found to be decreasing throughout the period of healthcare restructuring under investigation, evaluating both in absolute numbers and rates of hospitalisation (Table 2). In 2005–2011, national avoidable hospitalisation level decreased by 1.5 times ($p<0.05$), with the most significant reduction in 2011 compared to previous year. Avoidable hospitalisation did not differ statistically significantly in urban and rural population at the beginning of healthcare restructuring in 2005. However, in progress disparities between these populations were found with rural avoidable hospitalisation being higher compare to urban. Also, regional inequalities of avoidable hospitalisation existed between administrative area units of Lithuania.

When compared regional avoidable hospitalisation to the national average (Figure 1), the highest avoidable hospitalisation was detected in Telšiai and Tauragė regions in 2005, and later these regions remained in their leading position. Despite overall decrease in avoidable hospitalisation, in Utena region avoidable hospitalisation level remained steady, and it was extremely high compare to other regions and national average in 2011. In Vilnius and Panevėžys regions, avoidable hospitalisation remained lower compare to other regions, however the ratio was found to be decreasing. In Alytus and Kaunas regions, avoidable hospitalisation was statistically significantly reduced, being lowest in the country in 2011.

Table 2. Absolute numbers and rates (per 100 000 population) of avoidable hospitalisation by area

Area	Year								
	2005			2008			2011		
	N	Rate	(95% CI)	N	Rate	(95% CI)	N	Rate	(95% CI)
Lithuania									
Total	46343	1195.66	(1184.29–1207.02)	42695	1087.11	(1076.30–1097.93)	29553	793.93	(784.27–803.58)
Urban	28843	1194.00	(1179.92–1208.07)	26424	1063.01	(1049.77–1076.25)	18814	770.19	(758.56–781.81)
Rural	16296	1198.24	(1178.77–1217.71)	15549	1128.83	(1109.95–1147.70)	10441	821.99	(804.86–839.12)
Region									
Vilnius	9367	1033.53	(1011.84–1055.22)	8910	938.09	(917.88–958.29)	7141	757.23	(738.99–775.47)
Kaunas	9995	1263.50	(1237.76–1289.25)	7781	992.55	(969.63–1015.47)	5054	685.89	(665.75–706.04)
Klaipėda	5307	1278.59	(1242.75–1314.43)	5370	1247.11	(1212.31–1281.92)	3552	854.03	(824.32–883.74)
Šiauliai	4651	1136.84	(1102.25–1171.44)	4693	1153.89	(1118.88–1188.90)	2968	815.32	(783.52–847.13)
Panevėžys	3568	1019.82	(984.59–1055.04)	3219	917.84	(883.89–951.79)	2378	715.47	(683.94–746.99)
Alytus	2898	1304.33	(1254.33–1354.32)	2578	1173.60	(1125.35–1221.85)	1447	686.47	(647.56–725.38)
Marijampolė	2611	1219.49	(1170.21–1268.78)	24494	1177.08	(1128.32–1225.84)	1440	771.19	(727.86–814.51)
Tauragė	2247	1443.88	(1381.02–1506.73)	1886	1243.40	(1183.54–1303.27)	1161	867.89	(812.96–922.81)
Telšiai	2811	1439.09	(1384.41–1493.77)	2614	1314.48	(1261.94–1367.02)	1684	952.66	(903.75–1001.57)
Utena	2805	1281.80	(1231.05–1332.54)	3150	1403.05	(1349.81–1456.29)	2701	1255.67	(1203.09–1308.26)

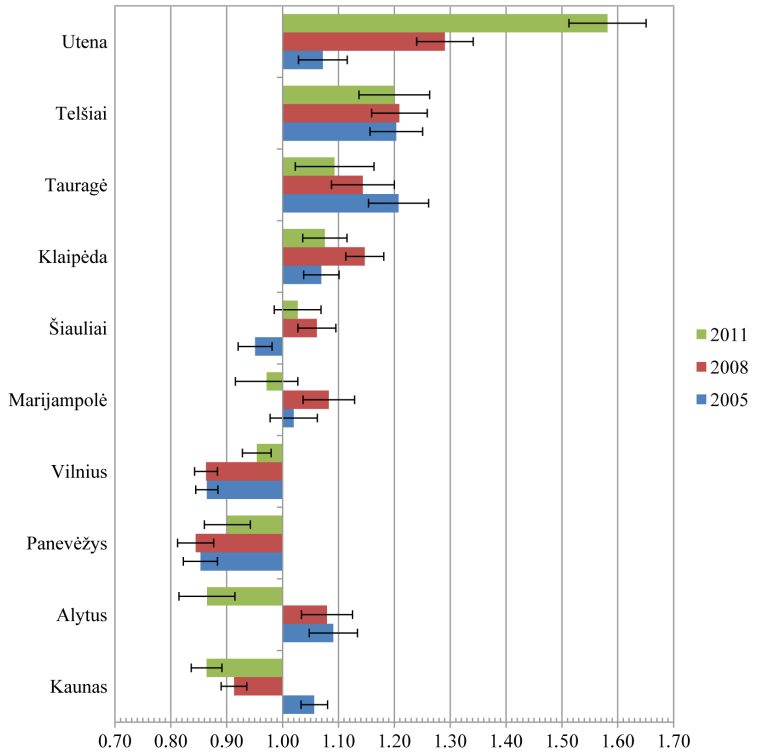

Figure 1. Rate ratio of regional and national avoidable hospitalisation, 95% CI (national level in the accounting year equals 1)

We excluded avoidable admissions by rural and urban residence type in different regions. The results are presented in Table 3. Relatively more rural inhabitants were admitted to hospital for any ACSC in smaller regions, not administered by the government of major cities. In other words, regions that were more rural (had less population, lower urbanisation level) had higher avoidable hospitalisation compare to national average.

Table 3. Proportion rural and urban inhabitants in avoidable admissions by area (%)

Region	Year					
	2005		2008		2011	
	rural	urban	rural	urban	rural	urban
Vilnius	26.9	70.6	28.1	69.5	24.3	74.6
Kaunas	27.0	70.0	28.4	70.4	29.5	69.4
Klaipėda	27.7	69.0	27.0	70.7	27.4	71.4
Šiauliai	36.7	59.5	38.8	59.3	37.9	60.9
Panevėžys	40.9	56.5	41.3	56.8	42.6	56.6
Alytus	46.0	51.8	47.9	51	51.6	47.5
Marijampolė	48.0	49.9	48.9	50.2	48.3	51.4
Tauragė	58.6	39.9	61.2	37.8	62.2	37.2
Telšiai	42.9	55.8	43.7	55.1	38.9	60.5
Utena	45.7	52.9	47.1	51.6	47.5	51.9
Lithuania	35.2	62.2	36.4	61.9	35.3	63.7

Emergency avoidable hospitalisation was calculated, excluding inpatient ACSC cases which were admitted via emergency departments (Table 4). With some exceptions, similar tendency was found as in case of overall avoidable hospitalisation. The regions of major cities (Vilnius, Kaunas, Klaipėda, and Panevėžys) had lower rates of emergency hospital admissions compare to more rural regions (Alytus, Telšiai, Utena, Marijampolė) in 2005. However, these inequalities levelled off in 2011. Šiauliai kept their leading position in emergency avoidable hospitalisation in the group of major regions, while Telšiai and Utena regions were leading in small regions‘ group. Interestingly, the opposite trend was found when comparing rural and urban areas. More often urban inhabitants were urgently hospitalised with ACSC than rural inhabitants. In case of general avoidable hospitalisation, rural inhabitants were admitted to hospital for any ACSC more often than urban inhabitants.

Table 4. Absolute numbers and rates (per 100 000 population) of emergency avoidable hospitalisation by area

Area	Year								
	2005			2008			2011		
	N	Rate	(95% CI)	N	Rate	(95% CI)	N	Rate	(95% CI)
Lithuania									
Total	27408	713.87	(704.95–722.78)	25480	660.31	(651.71–668.91)	18391	497.21	(489.48–504.94)
Urban	16987	746.64	(735.63–757.65)	15772	702.33	(691.84–712.83)	11892	587.86	(578.52–597.20)
Rural	9542	721.27	(705.90–736.65)	9112	687.01	(671.92–702.11)	6306	504.87	(491.20–518.53)
Region									
Vilnius	5581	609.62	(592.95–626.29)	5379	562.89	(547.13–578.66)	4781	493.30	(478.72–507.88)
Kaunas	5117	660.64	(641.49–679.79)	3887	518.80	(501.65–535.96)	2253	325.66	(311.10–340.21)
Klaipėda	2530	608.02	(582.99–633.04)	2689	628.94	(603.73–654.15)	2086	489.36	(467.03–511.70)
Šiauliai	3795	942.46	(910.54–974.37)	3552	893.79	(862.34–925.24)	2301	644.93	(616.28–673.58)
Panevėžys	2256	657.59	(628.76–686.41)	2110	613.49	(585.17–641.81)	1656	509.67	(482.49–536.85)
Alytus	2180	984.49	(940.77–1028.21)	1908	879.88	(837.46–922.31)	1013	486.29	(452.87–519.71)
Marijampolė	1547	732.75	(69376–771.74)	1562	753.50	(713.76–793.25)	823	472.11	(436.86–507.37)
Tauragė	904	646.13	(601.05–691.20)	809	580.84	(537.81–623.87)	481	390.81	(352.14–429.49)
Telšiai	1934	992.29	(946.46–1038.12)	1770	894.35	(850.37–938.33)	1281	736.30	(692.71–779.89)
Utena	1558	704.27	(666.67–741.87)	1814	818.61	(777.02–860.19)	1696	773.42	(732.08–814.76)

Around 60% of avoidable hospitalisation was determined by emergency admissions in Lithuania (Table 5). The relative impact was different and inconsistent between administrative regions. Throughout the period under study, the weakest impact was found in Tauragė region – around 45% of avoidable hospitalisation was determined by urgent admissions. The strongest impact was detected in Šiauliai region in every year. In Telšiai region, the impact increased by 8% from 2005 to 2011, and was second highest (following Šiauliai) in 2011.

Table 5. Impact (%) of emergency avoidable hospitalisation to overall avoidable hospitalisation rates by area

	Year		
	2005	**2008**	**2011**
Region			
Vilnius	58.98	60.00	65.15
Kaunas	52.29	52.27	47.48
Klaipėda	47.55	50.43	57.30
Šiauliai	82.90	77.46	79.10
Panevėžys	64.48	66.84	71.24
Alytus	75.48	74.97	70.84
Marijampolė	60.09	64.01	61.22
Tauragė	44.75	46.71	45.03
Telšiai	68.95	68.04	77.29
Utena	54.94	58.34	61.59
Lithuania			
Total	59.70	60.74	62.63
Urban	62.53	66.07	76.33
Rural	60.19	60.86	61.42

Discussion

Recently avoidable hospitalisation as an indicator of primary and ambulatory healthcare has become under interest in Lithuania[7, 8]. A few publications made

[7] Sandra Mekšriūnaitė, & Romualdas Gurevičius. "Ambulatoriškai valdomų ligų paplitimo ypatumai Lietuvoje 2012 m." *Visuomenės sveikata* 1, 68 (2015a): 16-25.

[8] Sandra Mekšriūnaitė, & Romualdas Gurevičius. "Išvengiamų hospitalizacijų rodiklių skirtumai Lietuvos savivaldybėse." *Visuomenės sveikata* 2, 69, (2015b): 26-33.

available statistics of recent years. In this study, we investigated avoidable hospitalisation level in the period of healthcare restructuring program. We have proved that hospital admission due to ambulatory care sensitive conditions decreased in 2005–2011, which goes in line with national health reform policy to strengthen primary and ambulatory healthcare and reduce inpatient care.

In regional comparisons, avoidable hospitalisation is a widely used measure to spotlight about quality and access of primary and ambulatory healthcare within country[9]. It is thought that hospital admissions can be avoided if patients with the specific ambulatory care sensitive condition receive proper healthcare in outpatient setting. Thus theoretically the adequate organisation of healthcare services is crucial element in preventing avoidable hospital admissions, and regional differences of associated healthcare supply factors could explain variation of avoidable hospitalisation rates. At the same time regional inequalities of avoidable hospitalisation might signal about the prevalence of inpatient care preferences and existing hospital policy or admission practice, as well sociodemographic characteristics of certain population.

When looking for possible patterns in explaining unnecessary hospital admission for those medical conditions which could be successfully managed in outpatient setting, a few factors are known to be associated with higher avoidable hospitalisation. In terms of sociodemographic characteristics, age, income level and place of residence are significant. Commonly, avoidable hospitalisation tends to be higher at older age, lower income groups (either personal or area level) and patients residing in rural areas[10, 11]. Older patients have chronic conditions which need regular medical check-ups and treatment. If the continuity of care is disturbed by any barriers in outpatient setting, the medical condition worsens and might result in admitting patients to inpatient facilities. This is particularly evident in rural areas, where access to healthcare if often complicated and residents are relatively older. Similarly, economically disadvantaged populations have worse health status and greater need for healthcare, while at the same time experiencing problems of access. Thus, sociodemographic characteristics of populations in the area relate to regional variation and territorial inequalities.

Regional inequalities of avoidable hospitalisation existed in Lithuania, 2005–2011. Generally, due to ACSCs rural residents were admitted to hospital more often than urban residents. Mostly small regions had higher avoidable hospitalisation level compare to the national average, and proportionally more

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9 Ansari, Z. *Supra note* 5.

10 Zahid Ansari, et al. "Patient characteristics associated with hospitalisations for ambulatory care sensitive conditions in Victoria, Australia." *BMC Health Services Research* 12 (2012): 475.

11 Therese Lofqvist, et al. "Inequalities in avoidable hospitalisation by area income and the role of individual characteristics: a population-based register study in Stockholm County, Sweden." *BMJ Quality & Safety* 23, 3 (2014), 206-214.

patients with any ACSC were admitted to hospital from rural areas. This finding let us to assume about inadequate accessibility of healthcare in rural areas in Lithuania. We assume rural inhabitants experience problems in acquiring timely and efficient healthcare services on outpatient basis, thus might prefer inpatient care instead as an alternative. Our assumptions are also reasoned by the results of the recent studies, where rural residents have confirmed experiencing barriers in access to outpatient specialist care[12, 13]. We have also found that in case of emergency ACSC admissions, the situation was opposite and urban residents were hospitalised for any ACSC more often. Also, no consistent variation of emergency avoidable hospitalisation was found in the regional comparison. The results allow us to presume that impact of type of residence could be valid in Lithuania. For rural residents, potentially avoidable hospital admissions might be conditioned by accessibility issues and not purely clinical need. Social circumstances might be relevant on the final physician's decision whether to admit ACSC patients to hospital, even though their condition could be managed outside hospital setting. Similarly, access to hospital emergency departments might be problematic for rural population, and patients from urban areas misuse the advantage of available 24-hour hospital service or certain issues of hospital policy exist. In literature, variations of small-area population-based hospitalisation differences is explained by clinical decision making and non-health factors such as supply of in-patient resources (i. e. available hospital beds, in-patient departments) rather than healthcare demand indicating factors[14]. When relatively more inpatient care resources are available, physicians tend to admit proportionately more highly variable conditions even though there is no reasonable medical demand for hospital admission. ACSCs admissions are lower when fewer hospital beds are available[15]. However, further elaboration of differences in possible hospital admission practices is recommended.

Some authors conclude that avoidable hospitalisation is higher in populations experiencing primary or ambulatory healthcare deficiency[16, 17]. Avoidable

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12 Ilona Tamutienė, Inga Černiauskaitė, & Austė Sruogaitė. "Lietuvos kaimo ir miesto gyventojų prieinamumo prie ambulatorinių sveikatos priežiūros paslaugų kliūtys ir jų kontekstai." *Kultūra ir visuomenė. Socialinių tyrimų žurnalas* 2, 1 (2011): 95-110.

13 Eimantė Zolubienė, et al. „65 m. ir vyresnių asmenų požiūris į sveikatos priežiūros paslaugų prieinamumą." *Visuomenės sveikata* 3, 66 (2014): 109-114.

14 Verena Barbieri, et al. Health care supply for cataract in Austrian public and private hospitals. *European Journal of Ophthalmology* 17, 4 (2007): 557-564.

15 Gert Westert, et al. "Medical practice variations in hospital care; time trends of a spatial phenomenon." *Health Place* 10, 3 (2004): 215-220.

16 Odette Gibson, Leonie Segal, & Robyn McDermott. 2013. "A systematic review of evidence on the association between hospitalisation for chronic disease related ambulatory care sensitive conditions and primary health care resourcing." *BMC Health Services Research* 13 (2013): 336.

17 Aldo Rosano, et al. "The relationship between avoidable hospitalisation and accessibility to primary care: a systematic review." *The European Journal of Public Health* 23, 3 (2013): 356-360.

hospitalisation will likely be higher in those regions, where general practitioners (GPs) have higher workload. Usually higher avoidable hospitalisation level correlates with lower GPs per certain population or higher patients per GP rates in the regions[18]. This might be relevant in rural Lithuania, as rural areas suffer from physician shortage. This kind of situation is highly discussed in Lithuania, but no solid evidence is made available yet.

Possibly the problems of adequate and timely healthcare or weakness of social support might be solved by admitting socially disadvantaged patients to the hospital. Several authors relate avoidable hospitalisation with socioeconomic factors[19, 20], i.e. low income, high unemployment or poverty level. Avoidable hospitalisation tends to be higher in socially deprived areas. As the healthcare restructuring continued in Lithuania, the alternative social sector did not develop adequately in parallel[21]. Moreover, regions differ by economic development and public investment[22]. In regional ranking of economic development, Vilnius, Kaunas, Klaipėda and Alytus regions were scored the best. Also, the highest unemployment was in Utena region (23.8%), followed by 20.6% in Panevėžys and 19.3% in Telšiai regions in 2011[23]. We assume that relationship between regional avoidable hospitalisation level and socioeconomic situation in the region truly exists. It is also noteworthy that avoidable hospitalisation is conditioned by a combination of multiple factors (i.e. population composition, socioeconomic status, healthcare supply, standards of treatment, etc.) and their impact might vary in different regions. Therefore, further research is needed in order to avoid speculations and check if and how these patterns are valid in Lithuania.

Several limitations might be relevant to the results of this study. Hospital discharge data of SVEIDRA is collected for administrative purposes rather than explicitly for epidemiological studies and is dependent on the accuracy of reporting and coding. The quality of medical coding was not assessed and taken into account in this study. In 2005–2011, the technical capabilities of SVEIDRA database were limited, and secondary diagnoses or interventions, which go along to some ACSCs, were not registered yet. Those ACSCs were excluded from the study, thus in practice avoidable hospitalisation level should had been higher. Also, some explanations of regional variation should be judged with caution.

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18 Gibson, O. R. *Supra note 15.*

19 Ansari, Z. S*upra note 5.*

20 Lofqvist, T., et al. S*upra note 11.*

21 Aušrinė Garbačiauskienė, & Almira Gecevičiūtė. "Socialinių paslaugų netolygumai Lietuvoje." *Nacionalinės sveikatos tarybos metinis pranešimas. Urbanizacija – nauji iššūkiai žmonių sveikatai.* 14-16. (Vilnius: Nacionalinė sveikatos taryba, 2010.)

22 Jurgita Bruneckienė, & Rytis Krušinskas. ES struktūrinės paramos įtakos Lietuvos regionų plėtrai ir išsivystymo netolygumams mažinti vertinimas. *Ekonomika ir vadyba*, 16 (2011): 127-136.

23 *Oficialios statistikos portalas*. Lietuvos statistikos departamentas. Accessed 2015 08 18. http://www.stat.gov.lt/

Assumptions we made were based on the findings of local and international authors of similar topics, thus not necessarily valid in Lithuania until proven by further studies.

Conclusion

Avoidable hospitalisation is useful in evaluating performance and detecting weak points of outpatient healthcare organisation. In Lithuania, hospital admission of ACSCs was reduced throughout the period of healthcare restructuring program, which supports national plan to strengthen primary healthcare and expand outpatient services in context of inpatient care reduction. However, inequalities of avoidable hospitalisation exist between administrative regions, as well as rural and urban areas. Inadequate healthcare resources, healthcare management issues or demographic and socioeconomic composition of population could be relevant in those areas, where avoidable hospitalisation is high. While these phenomena can never be totally eliminated, the overview of regional differences indicates potentiality of healthcare improvement and social care integration for policy makers and healthcare managers.

Literature

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Teritoriniai išvengiamos hospitalizacijos netolygumai Lietuvoje

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Santrauka. Įvadas. *Išvengiamos hospitalizacijos rodikliai yra naudojami vertinant pirminės ir ambulatorinės sveikatos priežiūros paslaugų kokybę ir prieinamumą. Lietuvoje tai yra ypač aktualu, nes hospitalizacijos rodikliai yra vieni didžiausių Europoje. Taip pat šalyje egzistuoja sveikatos priežiūros paslaugų prieinamumo skirtumai.*

Tikslas. *Šis tyrimas buvo atliktas siekiant įvertinti teritorinius išvengiamos hospitalizacijos netolygumus Lietuvoje sveikatos priežiūros įstaigų restruktūrizavimo laikotarpiu.*

Metodologija. *Standartizuoti hospitalizacijos dėl ambulatoriškai valdomų ligų rodikliai (100 000 gyv.) buvo naudoti šiame tyrime.*

Rezultatai. *Išvengiamos hospitalizacijos rodikliai sumažėjo 2005–2011 m. Kaimiškose vietovėse išvengiamos hospitalizacijos rodikliai buvo aukštesni nei miesto vietovėse, tačiau miesto vietovėse dėl ambulatoriškai valdomų ligų buvo dažniau hospitalizuojama skubos*

tvarka. Teritoriniai išvengiamos hospitalizacijos skirtumai buvo nustatyti Lietuvos regionuose. Mažesniuose regionuose dėl ambulatoriškai valdomų ligų buvo hospitalizauojama santykinai daugiau.

Išvados. *Sveikatos priežiūros įstaigų restruktūrizavimo laikotarpiu išvengiamos hospitalizacijos rodikliai Lietuvoje sumažėjo, kas atitinka vykdomą nacionalinę sveikatos politiką stiprinti pirminės sveikatos priežiūros ir ambulatorinių paslaugų teikimą, kartu mažinant stacionarinių paslaugų apimtis. Regioninių netolygumų apžvalga parodo, kuriuose regionuose reikia stiprinti sveikatos priežiūros ir socialinių paslaugų teikimą.*

Reikšminiai žodžiai: *avoidable hospitalisation, hospital admission, ambulatory care sensitive condition, ACSC, inequalities, Lithuania.*

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