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Evaluation of patient-related administrative burden regarding non-emergency control referrals for family physicians in Slovenia

Ocena časovne in stroškovne obremenitve zdravnikov družinske medicine zaradi ponovnega predpisovanja nenujnih kontrolnih napotnic

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Abstract

Background: Non-emergency control referrals are often ordered by a clinical specialist. A control referral demands that a family physician carries out an administrative task to further extend the validity period after its validity period has expired. With the administrative burden on family physicians increasing in today's healthcare system, the additional "gate-keeper" role of family physicians in repeated issuing of non-emergency control referrals seems redundant. The aim of this study was to evaluate administrative burden regarding the time consumed and money billed for prescribing non-emergency control referrals, and to present a more efficient model for prescribing non-emergency control referrals.

Methods: We designed a cross-sectional quantitative study. By means of automatic statistical data collection with IRIS software, we gathered statistical information regarding control referrals and overall completed tasks in nine selected family physicians' offices in the "Center" unit of the Ljubljana Community Health Centre, in the time period from 1 March 2018 until 30 June 2018.

Results: Altogether, 7340 referrals were analyzed. Control referrals accounted for 37% (2720 referrals) of all referrals or 75 referrals monthly per GP's office. The majority of these (90% or 2453 referrals) were for a non-emergency case. As many as 86% (2104 referrals) of non-emergency control referrals were prescribed without a physical examination. A family physician spent on average 68 minutes per week or 3.5% of his or her work time issuing such non-urgent referrals. This time is equivalent to a measured time of ten average visits to the family physician's office. For issuing non-emergency control

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referrals, a family physician's office bills on average €255€ monthly or 6% of all billed services. This accounts to €203,191 monthly for all family physicians in Slovenia and a monthly time load of 2.8% working time.

Conclusion: The administrative burden of issuing non-urgent control referrals is both time- and money-consuming while being apparently unnecessary. We present a new model for issuing control referrals that eliminates unnecessary administrative burden and enables a more systematic pathway for referrals in cases of acute chronic disease exacerbation.

Izvleček

Izhodišča: Nenujne kontrolne obravnave na sekundarni ali terciarni ravni pogosto določi napotni zdravnik sam ob zadnji obravnavi. Po preteku veljavnosti predhodne napotnice mora družinski zdravnik le-to ponovno izdati oz. opredeliti, da je potrebna. Ob vse večjih administrativnih obremenitvah družinskih zdravnikov se zdi dodatna vloga družinskega zdravnika kot t. i. »vratarja« pri izdajanju nenujnih kontrolnih napotnic nepotrebna. Cilj te študije je izračunati stroškovno in časovno obremenitev zaradi izdajanja nenujnih kontrolnih napotnic in predlagati bolj smotrno ureditev.

Metode: Gre za presečno kvantitativno študijo. Podatki o izdanih napotnicah in skupno opravljenem delu izvirajo iz avtomatskega beleženja statističnih podatkov v računalniškem programu IRIS. Zbrani so za devet ambulant družinske medicine v enoti Center Zdravstvenega doma Ljubljana v obdobju od 1. 3. 2018 do 30. 6. 2018.

Rezultati: Skupno je bilo pregledanih 7.340 napotnic. Kontrolne napotitve so predstavljale 37 % (2.720 napotnic) vseh napotitev oz. 75 napotnic mesečno na ambulanto. Od tega jih je bilo 90 % (2.453 napotnic) izdanih zaradi nenujnega bolezenskega stanja. Kar 86 % (2.104 napotnic) nenujnih kontrolnih napotnic je bilo izdanih brez opravljenega kliničnega pregleda. Za izdajanje nenujnih kontrolnih napotnic je družinski zdravnik povprečno porabil 68 minut na teden (3,5 % delovnega časa). Porabljeni čas ustreza 10 obravnavam bolnika v ambulanti družinskega zdravnika. Za izdajanje kontrolnih napotnic je ambulanta družinske medicine povprečno mesečno obračunala 255 € oz. 6 % vseh obračunanih storitev. Mesečni strošek za vse zdravstvene time v Sloveniji na račun napotnic bi tako znašal 203.191 €, mesečna časovna obremenitev pa 2,8 % delovnega časa.

Zaključek: Administrativna obremenitev zaradi izdajanja nenujnih kontrolnih napotnic tako po času kot tudi stroških pretirano obremenjuje ambulante družinskega zdravnika, na da bi pri tem družinski zdravnik imel bistveno strokovno vlogo. Zato članek predstavi model ureditve izdajanja napotnic, ki bi odpravil nepotrebne administrativne obremenitve ter omogočil bolj sistematizirano napotovanje akutnih poslabšanj pri kroničnih boleznih.

1 Introduction

A family physician performs numerous medical tasks as part of their work in the primary healthcare system. The most important tasks include: ensuring an open and unlimited first contact with healthcare services, concurrent treatment of acute and chronic medical issues (including providing emergency medical care), encouraging a healthy lifestyle, care for the early detection of diseases and, last but not least, managing treatment at the end of a patient's life (1). A part of the family physician's tasks includes administrative work that has increased recently, as the Medical Chamber of Slovenia has pointed out (2). Visits solely administrative in nature make up an impressive 25% of all visits (3), i.e., 21% of the family physicians' total time spent at their practice (4). The share of administrative visits increases significantly with patients aged above 75 years, where such visits account for 45% of the total (5). The share of administrative tasks is comparable to the US and other European countries (from 20% in Norway to 33% in the US at the primary level) (4,6,7). The difficulties of these administrative tasks should not only be viewed as a quantitative element of the workload. They not only take up time intended for clinical treatment of patients but also negatively impact the physician's focus while treating their patient, thereby significantly reducing the quality of the treatment (6). When we add to this the constantly growing number of daily patient visits, we notice the negative impact on the physician's work satisfaction and the increased risk for burnout syndrome (6,8). In the light of past events that culminated in threats to quit from family physicians (9), we should not overlook the strong link between burnout syndrome and work satisfaction with thoughts of quitting work as a family physician (10).

In our healthcare system, family physicians (and other primary care level physicians) have the so-called gatekeeper role in referrals to the secondary or tertiary level (11). Most European countries have a similar system (11,12). On the one hand, limiting or guarding

access to the secondary or tertiary level lowers healthcare costs (12,13), shortens hospital stays (14), and increases the level of fair access to secondary and tertiary level services (12,14). On the other hand, however, it has some undesired effects, especially in the increase in the number of visits to family physicians (12). With the growing burden on family physicians in their work with patients and an increasing need for rationalized use of funds for healthcare services, this raises the question of the reasonableness of family physicians having the added gatekeeper role in non-emergency control referrals. With such referrals, the referring physician has often already assumed the so-called gatekeeper role with their request for a control examination and by setting the date of the control examination. This study aims to evaluate the need for the additional gatekeeper role of the family physician for such referrals by evaluating the time and cost burden of performing this role.

2 Methods

We designed a cross-sectional quantitative study. By using automatically recorded statistical data from the IRIS computer software, we analyzed every visit to a family physician in which a referral was issued. The data were collected for nine family medicine offices that did ambulatory care at least four days per week and achieved at least 50% of required patient quota in family medicine. The family medicine offices were selected at the "Center" unit of the Ljubljana Community Health Centre for the observation period from 1 March 2018 to 30 June 2018. The study was approved by the Committee for Medical Ethics of the Republic of Slovenia on 16 April 2019 (decision no. 0120-204/2019/5).

Every visit that resulted in an issued referral was classified in an individual subgroup based on the type of the medical service, the level of emergency, the match between the primary diagnosis of the visit and the diagnosis on the referral, and the charged service of the referral. A visit during which a referral was issued that listed "control" as the medical service and which had the emergency rate at "regular" was listed as a non-emergency control referral. If such a visit included a charged service for a "short visit", it was listed as a non-emergency control referral without a conducted clinical examination. When the primary diagnosis of the referral according to the International Classification of Diseases (ICD) matched with the primary diagnosis of the visit, such a visit was primarily intended for issuing a non-emergency control referral without conducting a clinical examination. A more detailed classification based on characteristics and/or combinations of individual variables is included in Table 1.

Based on the classification of the visits, we calculated the time and cost burden for issuing non-emergency control referrals. The time burden was calculated indirectly. The time spent issuing referrals for non-emergency examinations was calculated based on the calculated average time for all administrative tasks in the study The Model for Assessing the Work Burdens of Family Medicine Physicians in Slovenia ($t_{(adm)}$ = 3.29 min) (15), namely as the number of all referrals for non-emergency control examinations issued in a month per individual family medicine office multiplied by the average time spent for administrative work:

- No. of non-emergency control referrals $_{(\text{per month per office})}$ × 3.29 min.

The share of the monthly burden for issuing non-emergency control referrals was calculated on the assumption of 6.5 hours of clinical work time and actual logged number of work days in a reviewed month so as to:

- Monthly time burden ÷ (no. workdays × 6.5 × 60).

For a practical depiction of the time burden resulting from issuing non-emergency control referral, we used a calculation to present time burden spent for issuing non-emergency control referrals as an equivalent number of average visits at the office, that would have been done in that time in a work week. This calculation is based on the calculated average time for all visits at a family physicians office, which was obtained in the study The Model for Assessing the Work Burdens of Family Medicine Physicians in Slovenia ($t_{(avg)}$ = 6.93 mini) (15), namely as the quotient of the total time burden for issuing non-emergency control referral per work week per individual family physician's office and the average time used for all the visits to a family physician's clinic:

- Time burden from non-emergency control referrals $_{(\text{week clinic})}$ ÷ 6.93 min.

The monthly cost burden for an individual office was calculated based on the calculated sum of consultation rates at visits where a non-emergency control referral was issued. In order to calculate the cost of the rate, we used the value of the consultation rate amount 1 at EUR 2.18 (data from the Health Insurance Institute of Slovenia of 14 August 2018). Furthermore the amount

Table 1: Characteristics and variables of the sample.

Type of visit	Variables						
	TMS – control	Level of emergency – regular	Level of emergency – E, VQ, Q	ICD match between codes of visit and referral	No ICD match between codes of visit and referral	Short description	First or repeated curative examination
Referral for a non-emergency control examination	x	x					
Referral for an emergency control examination	x		x				
Visit primarily intended for issuing a referral for a non-emergency control examination	x	x		x			
Visit secondarily intended for issuing a referral for a non-emergency control examination	x	x			x		
Issuing a non-emergency control referral without a clinical examination	x	x		x		x	
Issuing a non-emergency control referral with a clinical examination	x	x		x			x

Legend: TMS – type of medical service; E – emergency, VQ – very quickly, Q – quickly; ICD – International Classification of Diseases.

of applied consultation rate per individual visit differs by the patient's age and type of the charged service. For the primary objective of the cost burden assessment, only those visits whose primary purpose was issuing a referral for a non-emergency control examination as described above were taken into account. Visits with a disproportionately high amount of consultation rate (preparing the patient for the assessment at the disability commission and the first extensive examination) were excluded.

- Σ of consultation rates $_{\text{(monthly officel primary visits)}} \times 2.18$ EUR.

Additionally, we completed a cost variation that included costs for issuing control referrals for visits that were primarily not intended for issuing non-emergency control referrals; because, according to the Health Insurance Institute of Slovenia's rules, such a visit can only logged as a single service (even though several were provided). The variation represents the monthly cost per individual family physicians office for all issued referrals at all the visits, regardless of the purpose of the visit (primary visit – visit for the sole purpose of issuing a control referral; secondary visit – issuing a control referral as part of the visit whose primary purpose is examining another medical condition). The variation presupposes uniform distribution of the sample of consultation amounts for age and type of visit for the so-called primary and secondary visits. Therefore it only represents the assessment of the condition. The variation was calculated in the following way:

- Cost of issuing non-emergency control referrals $_{\text{(monthly office primary visits)}} \div$ share of non-emergency control referrals $_{\text{(monthly office primary visits)}}$.

Based on the calculated monthly family physician office data for cost and time burden for every outpatient clinic in the observed sample, we used linear regression analysis of the results with the purpose of extrapolating them later to the sample of all family medicine offices of the Ljubljana Community Health Centre, and on the sample of all family medicine offices in Slovenia. The statistical significance of the linear regression was set to a value of $p < 0.01$. We performed the extrapolation based on the number of total patient quota per family physicians office according to the data provided by the Health Insurance Institute of Slovenia at 1 July 2018:

- Ljubljana Community Health Centre 242,213.96 patient quota.
- All family medicine teams in Slovenia: 2,182,589.2 patient quota.

3 Results

The family physician offices included in the study had an average of 1,478 defined patients, i.e. 2,081 patient quota (the span of patient quota from 983 to 2,946). The total number of reviewed work days was 591. On average, the family physician offices provided medical services for 17 days per month (SD ± 3, [8, 22]). A total of 7,340 referrals were issued during this period. These most frequently included referrals for control examinations (2,720, i.e., 37%), followed by referrals for first examination (2,482, i.e., 34%) and referrals for diagnostic or therapy services (2,138, i.e. 29%). The control referral group had the most referrals for non-emergency conditions (2,453, i.e., 90%). Most non-emergency control referrals were issued without a clinical examination 2,104, i.e., 86%). The share of non-emergency referrals issued during visits for another service stood at 30% (738 referrals). A more detailed analysis is included in Table 2.

The average time burden because of issued referrals for non-emergency control examinations per individual family medicine physician was 224 minutes, i.e., 3.7 hours per month (SD ± 74 min, [92, 391]), i.e. 68 minutes per week. Taking into account the daily office time of 6.5 hours, the average monthly time burden from issuing non-emergency control referrals is 3.5% of work time (SD ± 1%, [1.7; 6.2]). The time used is equal to the average time for 10 visits to a family medicine office per work week (SD ± 3, [5, 17]). A more detailed analysis is included in Table 3.

The cost for issuing non-emergency control referrals during the observed four-month period for all the offices was EUR 9,175, which is an average of EUR 255 per month per outpatient clinic (SD ± EUR 85, [111, 499]), i.e., 6% of the total amount charged (SD ± 2%, [3, 10]). When taking into account the variation for issuing non-emergency control referrals during visits that were not primarily intended for obtaining a non-emergency control referral, it turns out that the monthly cost is underestimated on average by 29% (SD ± 9%, [13, 49]). When taking variation into account, the cost of issuing all non-emergency control referrals amounts to 8% of all charged services (SD ± 2%, [4, 12]). A more detailed analysis is included in Table 4.

The linear regression analysis of the time and cost burden in relation to the total number of patient quota confirms a significant statistical linear relationship of the variables (p value < 0,01). Regression analysis does not confirm the statistical significance of the calculated origin of the regression line, which is above the expected origin of 0. Based on the regression line the extrapolated results of the cost burden, the estimated monthly cost burden for the Ljubljana Community Health Centre amounts to EUR 22,605 (95% CI EUR 12,661 – 32,551), i.e., EUR 203,191 (95% CI EUR 112,897 – 293,485) for all family medicine offices in Slovenia. Similarly, the share of the monthly time burden is estimated for all teams

Table 2: Overview of non-emergency control referrals.

	Total – 4 months	Monthly per office (average)	Standard deviation	Value range	Total share	Share of non-emergency
Number of control referrals	2,720	75	± 22	[30, 121]		
Non-emergency	2,453	68	± 22	[28, 114]	90%	
Non-emergency without examination	2,104	58	± 22	[22, 102]	77%	86%
Non-emergency with another service	738	21	± 12	[6, 55]	27%	30%

Table 3: Time burden for non-emergency control referrals.

	Time burden per office (average)	Standard deviation	Value range
Time burden for non-emergency control referrals / month	224 min	± 74 min	[92, 391]
Share of work time (monthly)	3,5%	± 1,0%	[1,7; 6,2]
Equivalent of the number of average visits (weekly)	10	± 3	[5, 17]

Table 4: Cost burden for non-emergency control referrals.

	Total – 4 months	Monthly office average	Standard deviation	Value range (EUR)	Share of all charged services
Amount with consultation rate – all visits	EUR 156,531				
Amount with consultation rate – primary visits	EUR 9,175	EUR 255	± EUR 85	[111, 499]	6%
Amount with consultation rate – with variation for non-primary visits	EUR 13,110	EUR 364	± EUR 129.5	[141,5, 693]	8%

of the Ljubljana Community Health Centre at 2.6% of the work time for issuing non-emergency control referrals (95% CI 1.5–3.6%), i.e., 2.8% of work time (95% CI 1.6–3.9%) for all family medicine offices in Slovenia. The graphic distribution of the linear regression with a regression line for time and cost burden is depicted in Figures 1 and 2, while Table 5 depicts their statistic values.

4 Discussion

The study included family physician offices from urban environments. When talking about the assessed cost and time burden and subsequent extrapolation, the important elements of the sample's representatives are especially: (1) average number of patient quota of observed offices (2) uniform distribution of observed offices by the number of patient quota, (3) average number of work days per month in observed offices, and (4) the duration of the observation period. Family medicine offices that were included in the study achieved an 82% monthly performance of activities during the observed period, and on average exceeded the requirements from the Health Insurance Institute of Slovenia for the full family medicine programme. In spite of this, they did not achieve the average number of patient quota of all registered family medicine offices in Slovenia during the same period (2,081 vs 2,422 consultation rates). When understanding the representation in this part, it

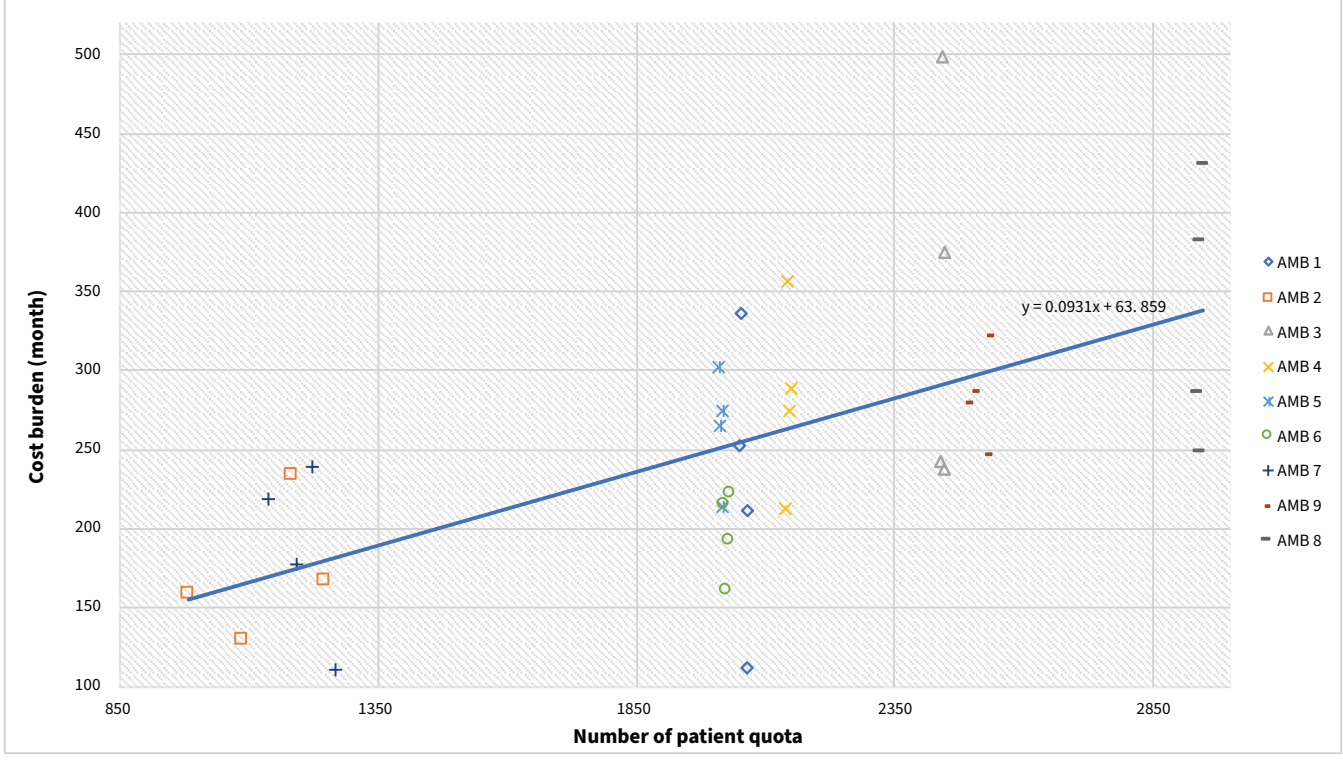

Figure 1: Linear regression analysis of the cost burden.

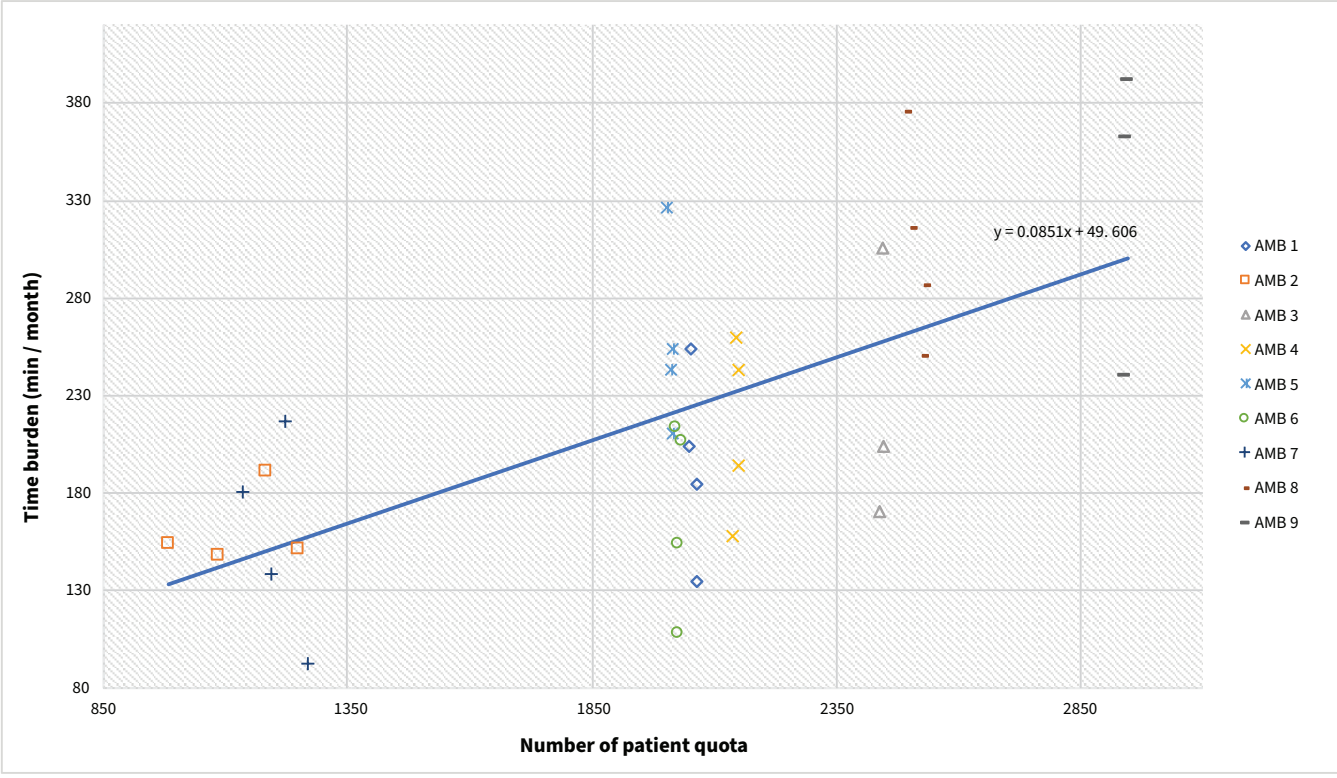

Figure 2: Linear regression analysis of the time burden.

is important to emphasize the distribution of observed offices: three offices achieved or surpassed the Slovenian patient quota average, and seven of them achieved or surpassed the required average for the full programme, while two achieved at least 50% of the required patient quota for a full programme. Uniform distribution and breadth of the sample is more important for assessing how linear the sample is than achieving the Slovenian average. This leads to the conclusion that the sample is representative for the purpose of establishing a linear relationship between variables, while extrapolation of the results to larger samples can even somewhat underestimate the results.

This study is also special in the range and processing of the obtained statistical data. For the purpose of the study, we used a range of automatically recorded data from the IRIS computer programme. This allowed us to capture several parameters at the same time, increase the sample, reduce the time spent obtaining the sample, and in particular, objectivize the data. Based on the obtained characteristics and the combination of individual variables, we defined the essential conditions for classifying individual visits (Table 1). Certain conditions represent a logical relation between objectively measured characteristics and an actual event during the patient's visit. However, the logic of these relations is not always

Table 5: Results of linear regression analysis.

	Coefficient	Standard error	T statistics	P-value
Linear regression analysis of the time burden				
Origin	49.61	36.69	1.35	0.19
Number of consultation fees from defined patients	0.09	0.01	4.93	2.12×10^{-05}
Linear regression analysis of the cost burden				
Origin	63.86	43.31	1.47	0.15
Number of consultation fees from defined patients	0.09	0.02	4.57	6.10×10^{-05}

undeniably correct. Certain exceptions negate the accuracy of the connections between individual parameters, representing a weakness of such an assessment model. In order to avoid this, the study posits several exceptions. We defined an exception by excluding from the analysis the calculation of the monthly cost burden for issuing a referral for a non-emergency control examination for those visits where the recorded services were extensive examination (K0007) or preparing the patient for assessment at the disability commission (K0006) because of the disproportionately high number of consultation amount during such visits. We also set an exception for visits where a non-emergency control referral was issued for a different reason than the primary diagnosis because the ICD code used for the primary diagnosis was either "other examinations for administrative reasons" (Z028) or "examination for administrative reasons" (Z029). Such visits counted as primarily intended for issuing a control referral.

An alternative option for obtaining a range of similar data that measures the burden is using a questionnaire in which a physician estimates their burden or by physically measuring the burden. Such methods have been used in previous studies that assessed the burden of family physicians both in Slovenia and abroad (2,6,7,10). The weakness of such methods is, in particular, the time spent obtaining the data, resulting in a smaller sample. Such methods are also sensitive to the subjectivity of the person measuring or assessing burdens. The advantages are particularly in the option to estimate the analyzed qualities more substantially. In this case, the person assessing the burden can precisely define the type of visit and the type of the issued referral. An error in the entry of the physician's data while working is probably comparable between both methods described.

The administrative burden of family physicians because of issuing non-emergency control referrals is detailed in two categories: the category of cost burden and the category of time burden. Both categories are important elements in justifying public healthcare in its - public -interest. This primarily requires that the activity is economical, which on the one hand calls for sensible use of public funds, while on the other hand for high-quality work performed by healthcare providers.

The cost burden arising from issuing non-emergency control referrals was calculated directly from the charged number of consultation amount for every visit. It represents an irrefutably real cost while taking into account the exactness of the defined conditions. The cost represents a part of all the charged services that every family physician's office details for fulfilling the conditions from the Health Insurance Institute of Slovenia. Because of the established model of paying for services in Slovenia up to the amount of the planned scope of the programme at the primary level, the real savings would be smaller if potential changes were made to how non-emergency control referrals are issued, as the limit of the planned scope of services is generally surpassed. However, this does not justify nor lessen the importance of the established cost burden. We should strive towards a system where every service provided is also paid. Lessening the importance of this goal has no positive consequences for the providers at the primary level in the long term. As part of this goal, the study also included the variation of the cost burden for the visits whose primary purpose was not the same as issuing a non-emergency control referral, although one was issued during the visit. The variation is essentially a provocation with regard to the current rules from the Health Insurance Institute of Slovenia, making it impossible to log several services during one visit (violation – doubled services). The reason for this provocation was to express opposition to these rules.

Time burden was calculated indirectly, using the findings of a study that has been recognized in Slovenia, which defines the model for estimating the burdens of family medicine physicians in Slovenia (15). This study has used the data from a large sample (over 12,000 visits (15)) for the measured time of an average visit to a family medicine outpatient clinic and for the average time spent on an administrative task. Using the results of this study for calculating the time burden assumes the original study's advantages as well as its weaknesses. The purpose of using the previously defined time for visit was to lower the burden on participating physicians and to prevent the unnecessary discovery of previously known facts. In order to more easily represent the time spent, we used the model of the equivalent of average visits to a family physician office, which shows the time used on administrative tasks as a number of average visits to a family physician's office.

Based on the obtained data and the representativeness of the sample, we extrapolated the results for the cost and time burden to the sample of all family medicine offices of the Ljubljana Community Health Centre and on the sample of all family medicine offices in Slovenia as at 1 July 2018. The extrapolation was made using the statistically significant linear relationship of the sample and its regression analysis line. When calculating the linear regression line, we used the monthly data for all observed offices during the observed 4-month period. Because in practice when control referrals are issued,

a control referral is seldom issued for the same type of control examination in a period of less than 6 months, the likelihood of repeatability of a referral in a 4-month period and thereby interdependence of the variables is negligible. Calculating the linear regression line of the sample showed that the origin of the line is above the expected value of 0 (i.e. there is no cost or time burden with any issued referral). The reason for the derogation of the origin is a non-linear sample at very low values of patient quota. Because of the natural – non-linear – distribution of visits in the case of reducing the number of patient quota towards zero, such a distribution in this part is nearly impossible to predict. This is confirmed by the statistical insignificance of the origin of the linear regression analysis. Family physician offices with a very low number of patient quota could therefore be non-representative for bigger samples. Because of this, and because the calculated origin with an extrapolation to bigger samples means an error of at most 0.3% for the smallest extrapolated sample, the equation for the calculation was not adjusted for the expected origin.

Comparing the results of administrative burden with previous studies is difficult, as most studies described the comprehensive administrative burden, not just the one related to issuing referrals. Results are more easily compared to the studies that described the share of issued referrals. The studies conducted in Slovenia mostly defined referrals as non-emergency (70% (16) and 83% (3) versus 90%). Such a comparison is only possible indirectly, as their calculations took into account the level of emergency for both control and first referrals, while this study only focuses on non-emergency control referrals. The comparison regarding the share of control referrals is somewhat better with the study performed on the population of Slovenian family medicine physicians (51.5% (3) vs 37%). The reason for this derogation is most likely in the fact that referrals for diagnostic and therapeutic services were not logged. If their share was excluded from the results, the estimated share of repeat referrals would be comparable (51.5% vs 52%). The result of the time burden because of issuing a non-emergency control referral can be compared with a study conducted at the Celje Community Health Centre (4). The calculated share of the daily physician's burden because of issuing referrals to specialists was 1.6% (vs 3.5% in this study). The result is again only indirectly comparable, as the Celje study measured only the time component required for filling out the forms and not the total time spent for a patient's visit when issuing a referral. The authors did not find any comparable studies assessing the cost burden of issuing non-emergency control referrals while making this study. Comparisons with studies conducted in the US are not possible because of the different healthcare systems. Those studies base the administration cost on the amount that outpatient clinics use for resolving insurance papers.

Before the results and their meaning can be the subject of a detailed discussion, one must understand the currently valid rules of mandatory medical insurance that define the procedure for issuing control referrals. The Rules on Mandatory Medical Insurance give the family physician the option of extending the validity of a referral for up to 12 months, while the referred physician can extend its validity for up to 24 months. If there is still a need for a control examination after this period, a new referral must be issued. A new control referral is therefore issued when the family physician establishes that the control with a clinical specialist is (still) required, or if the referred physician establishes that the patient must (still) be monitored at the secondary or tertiary level, even though the validity of the referral has expired. The period of the referral's validity does not have any significant meaning for a patient's clinical treatment. This is mostly an arbitrary definition of a limit to access a clinical specialist, as the duration of the disease is relatively difficult to predict at the first or control referral. As is evident from the results of this study, most referrals were issued for control examinations (37%). Nearly all were issued for non-emergency conditions (90%). In 86% of the issued non-emergency control referrals, the family physician did not conduct a clinical examination when issuing it. If, when issuing such a referral, the family physician assessed that a clinical examination is not required, we can assess with great probability (and based on practical experience) that this was a control referral that the referred physician planned during the patient's last clinical treatment. Only in 14% of all non-emergency control referrals in which the family physician conducted a clinical examination before a control referral can we assess that the decision for the control referral was taken by the family physician. This naturally leads to the following question: Is it therefore really always necessary for the family physician to perform the additional gatekeeper role for issuing a non-emergency control referral? With regard to the content of the referral document (communication between the family physician and the referred physician), it appears that this significance is truly minimal, as in practice in these cases, the communication is most often the result of the procedural nature (validity of the referral). The communication between the family physician and the referred physician is much more important at first referral and with an acute

exacerbation of a chronic disease. Regarding a potential change in the additional gatekeeper role of family physicians, there is another concern. Would a potential change to the duration of the referral's validity lead to an increased burden on clinical specialists? It is inappropriate to claim so with any certainty, as theory does not always match the results in practice! Considering the knowledge from current work experience, when despite an issued control referral with longer validity, the patient does not have free access to a clinical specialist, and the examination is set in accordance with the referred physician, it can be reasonably assumed that such a change or even removing the expiration of a referral would not result in an increased burden on clinical specialists. With a potential change, the clinical specialists would still have the option to conclude the treatment. And on the other hand, with such a change, family physicians would not be merely passing the care of chronic patients into other physician's hands.

In order to improve the current system, the article recommends the following change to how referrals for an examination at the secondary or tertiary level are issued:

1. The referral in its basic format gains a new category "referral type":
   - Referral for the first curative examination.
   - Referral for a control examination.
2. The referral for the first curative examination retains all of its current characteristics, except for the "validity" category, which is omitted.
3. The referral for control examination gains the new category "type of control examination", which has the following options:
   - Acute exacerbation of a chronic disease.
   - Reassessment of the medical condition.

With an acute exacerbation of a chronic disease, the personal physician can request an early control examination. A reassessment of the medical condition requires a repeat examination of a previously concluded treatment by the referred physician.

4. The referral for a control examination no longer requires the category "level of emergency" and is therefore omitted.

The proposed change to the system for issuing referrals also removes the category of the referral's validity. The referral would reasonably be valid until revoked or until the referred physician finds that control examinations are no longer necessary. Additionally, such a system would also lead to more systemic referrals for an early control examination because of an acute exacerbation of a chronic disease. In the current system, the early control examination is left to the agreement between the patient and the referred physician, or a new referral must be issued for a first examination with an increased level of emergency, leading to doubled referrals. A schematic of the proposed change to the referral is depicted in Figure 3.

NOTE: Based on the document Changes and amendments to the Rules on the Mandatory Medical Insurance (Official Gazette RS, no. 4/20 of 24 January 2020), the changed rules from Articles 176 and 177 of the Rules on Mandatory Medical Insurance came into force on 8 May 2020. Changes to these rules allow for the referred physician to extend the validity of the personal physician's referral once or twice should they establish during their treatment that the patient continues to require medical services after the expiration of the referral's validity. The goal of this change was defined by the Health Insurance Institute of Slovenia as reducing the administrative

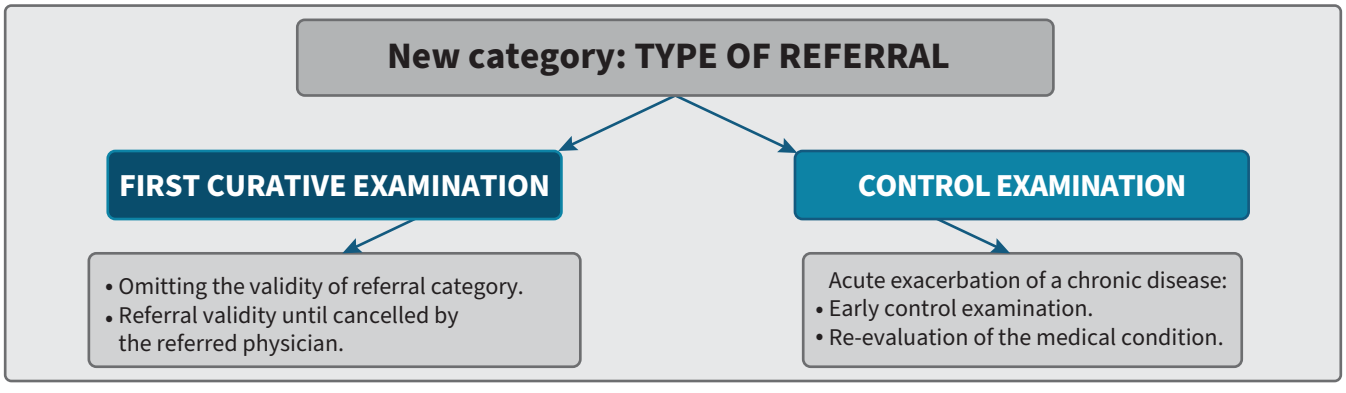

Figure 3: Proposed change to the system for issuing referrals.

burden on personal physicians, patients and referred physicians. In order to understand the effects of such changes to the rules, one must also understand that the referred physician may only extend the referral's validity based on a still valid authorization for medical care. Should this not be done while the referral is still valid, the administrative burden is again transferred to the family physician. Considering the past experience of adherence to the (discretionary) rules of the obligatory medical insurance by referred physicians when writing prescriptions and requests for diagnostic examinations and medical-technical accessories, the expected effect of changes to the rules from the perspective of reducing the administrative burden on personal physicians seems less significant. This is also evident from the practical experience during the first months after the change was implemented.

5 Conclusion

Performing the additional so-called gatekeeper role when issuing non-emergency control referral burdens the family physician's time and costs. The calculated amount of charged service because of issuing non-emergency control referrals represents 6% of the total costs of an individual outpatient clinic. The monthly cost for the Health Insurance Institute of Slovenia amounts to somewhat more than EUR 203,000 for all of Slovenia. When taking into account the uniform distribution of visits throughout the year (excluding the seasonable pattern of visits), we can roughly estimate the annual cost in Slovenia for issuing non-emergency control referrals to about EUR 2.4 million. Such a cost means an inefficient use of the funds whose primary purpose is to maintain or improve the patient's health. At the same time, such tasks mean that a family medicine physician uses the time during which they could conduct ten other visits that would certainly have more essential effects on maintaining or improving the health of the patients assigned to them. In a highly overtasked healthcare system, the additional role of the so-called gatekeeper that the family physician assumes when issuing non-emergency control referral represents an inefficient use of their work time and an unjustified use of the funds of the Health Insurance Institute of Slovenia.

Conflict of interest

None declared.

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