How do general practitioners put preventive care recommendations into practice? A cross-sectional study in Switzerland and France

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ABSTRACT

Objectives We previously identified that general practitioners (GPs) in French-speaking regions of Europe had a variable uptake of common preventive recommendations. In this study, we describe GPs' reports of how they put different preventive recommendations into practice.

Design, setting and participants Cross-sectional study conducted in 2015 in Switzerland and France. 3400 randomly selected GPs were asked to complete a postal (n=1100) or online (n=2300) questionnaire. GPs who exclusively practiced complementary and alternative medicine were not eligible for the study. 764 GPs (response rate: postal 47%, online 11%) returned the questionnaire (428 in Switzerland and 336 in France).

Main outcome measures We investigated how the GPs performed five preventive practices (screening for dyslipidaemia, colorectal and prostate cancer, identification of hazardous alcohol consumption and brief intervention), examining which age group they selected, the screening frequency, the test they used, whether they favoured shared decision for prostate cancer screening and their definition of hazardous alcohol use.

Results A large variability was observed in the way in which GPs provide these practices. 41% reported screening yearly for cholesterol, starting and stopping at variable ages. 82% did not use any test to identify hazardous drinking. The most common responses for defining hazardous drinking were, for men, ≥21 drinks/week (24%) and ≥4 drinks/occasion for binge drinking (20%), and for women, ≥14 drinks/week (28%) and ≥3 drinks/occasion (21%). Screening for colorectal cancer, mainly with colonoscopy in Switzerland (86%) and stool-based tests in France (93%), was provided every 10 years in Switzerland (65%) and 2 years in France (91%) to patients between 50 years (87%) and 75 years (67%). Prostate cancer screening, usually with shared decision (82%), was provided yearly (62%) to patients between 50 years (74%) and 75–80 years (32%–34%).

Conclusions The large diversity in the way these practices are provided needs to be addressed, as it could be related to some misunderstanding of the current guidelines, to barriers for guideline uptake or, more likely, to the absence of agreement between the various recommendations.

Strengths and limitations of this study

► We previously identified that general practitioners (GPs) in French-speaking regions in Europe had a variable uptake of common preventive recommendations but, to our knowledge, no studies assessed *how* GPs perform preventive activities in these countries.

► All the answers were self-reported, which could lead to social desirability biases.

► The recruitment of GPs was restricted to four French-speaking regions (two in Western Switzerland and two in France); this relatively restricted sample may not be representative of all GPs practicing either in Europe or in French-speaking continental Europe.

INTRODUCTION

Preventive healthcare practices can be effective strategies to reduce the burden of chronic diseases such as cancer or heart diseases.[1–4] Because chronic diseases are a major cause of morbidity and mortality worldwide, preventive healthcare practices have the potential to lower medical costs.[3] A large number of chronic diseases is associated with identified and modifiable risk factors.[5 6] Therefore, despite remaining controversies regarding the relevance of some preventive recommendations,[7–9] prevention has become an essential component of general practitioners' (GPs) tasks.

There has been increasing emphasis on the development of evidence-based preventive care guidelines in the last decades, such as the US Preventive Services Task Force recommendations and the Canadian Task Force on Preventive Health Care.[10 11] These North American guidelines are often used by GPs in Europe, in combination with country-specific recommendations. For example, a national programme named EviPrev was recently launched in

Switzerland to develop local guidelines, taking into account the Swiss context.[12] These recommendations have only recently started to be implemented in clinical practice, and a majority of Swiss GPs do not know them in detail. In France, preventive guidelines were mostly developed and classified by diseases. There are currently no global preventive care recommendations in this country.[5] Some preventive care recommendations are available, but they are scattered across various disease-specific guidelines published by a variety of academic associations.[5]

Unfortunately, many of these guidelines offer contradictory advice. As there is no consensus, it is difficult for GPs to determine how to deliver preventive care in their consultations.[5] The methodology and choice of grading systems to develop these guidelines vary, as well as the choice of the clinical categories and the target populations, which further complicates the delivery of preventive care.[5] In such a context, it may be difficult for GPs to have a precise, global picture of the preventive care they are expected to deliver.

Some studies addressed the variation in and the barriers to guideline adherence.[13–17] Among a wide spectrum of barriers, the lack of awareness or familiarity with the guidelines is often cited by GPs.[16 17] This factor may, at least in part, be explained by the lack of agreement between the recommendations and, in many countries, by the absence of national programme dedicated to implementation of prevention guidelines in general practices. Moreover, GPs seem to perceive some recommendations as not being applicable in daily practice, either because their patient populations are highly heterogeneous or because they are 'complex'.[16 17] These barriers could probably in part be overcome if GPs were more often involved in the development process of these guidelines, which is often not the case.[16]

The lack of awareness of the local guidelines and the discrepancies between the various available guidelines could alter the way the different recommendations are carried out. Therefore, in order to add new data coming from French-speaking Continental Europe to the literature assessing how GPs perform preventive activities, we found that it is important to explore how they are provided regarding both the target populations and the screening tests used by documenting self-reported preventive care practices in four French-speaking regions. We also aimed to investigate whether these findings were associated with some GP characteristics, in particular their country of practice (Switzerland and France). The two countries differ in several aspects related to medical practice, as for example methods of reimbursement of medical costs (benefits are based on preset rates in France and fee-for-service in Switzerland) and in preventive recommendations (no unified preventive recommendations' document in France).[5]

METHODS
Study site, study population and sample size justification
This study was part of a larger project designed to assess French-speaking GPs' preventive care practices. This was a cross-sectional autoadministered questionnaire-based study that took place in 2015 in four French-speaking regions in two countries (Switzerland: cantons of Geneva and Vaud; and France: Alsace and Pays de la Loire). Alsace and Pays de Loire are approximately in the mid-French level in relation to rurality, medical density and GPs' density.[18 19] Vaud and Geneva are more urban than other cantons in Switzerland and their total medical density and GPs' density exceed average Swiss values.[20–22]

We randomly selected 1000 community-based GPs practicing in Switzerland (600 in the canton of Geneva and 400 in the canton of Vaud) and 2400 in France (1200 in Alsace and 1200 in Pays de la Loire) from the regional professional organisation lists and invited them to participate in the study by email (300 in Switzerland and 2000 in France) or by post (700 in Switzerland and 400 in France). We sent reminder messages (maximum twice per GP) if they had not responded to the first invitation. We used simple randomisation based on computer-generated random numbers to allocate them to the postal or the web-based group. The postal letters included a stamped return envelope. GPs who exclusively practiced complementary and alternative medicine were not eligible to take part in our project. No other exclusion criteria were applied to the study. We described the recruitment process in detail in a previous paper.[23]

Sample size estimation
We estimated the minimal required sample size of 600 to be able to provide a 95% CI no wider than ±4% for every estimate of prevalence of preventive activities, with an expected prevalence of about 50%.[24 25] As we assumed a participation rate of 25%, we had to contact 2400 GPs. We decided to increase the sample size to 3400 to take into account the presence of incomplete questionnaires.[26 27]

Data collection
A research assistant located in Geneva contacted the randomly selected GPs practicing in Switzerland (in France, this task was carried out by the local GPs' representative structure: *Union Régionale des Professionnels de Santé Alsace* and *Pays de la Loire*) and informed them about the aim of the study and the practical procedures to be followed to complete the anonymous questionnaire.

The questionnaire (see online supplementary file 1) included sociodemographic questions (age, gender, number of working days per week and number of working years in the practice), and questions about the frequency of use of 12 preventive practices (blood pressure, weight and height measurements, screening for dyslipidaemia, hazardous drinking (and advice to decrease drinking for hazardous drinkers), tobacco smoking (and advice to stop smoking for smokers), colorectal and prostate cancer; and influenza immunisation for patients >65 years and

at-risk patients <65 years), using a 5-point Likert scale ranging from 'never performed' to 'always performed'.

Ten of these preventive practices were selected because they had been part of previous studies evaluating the quality of preventive care in Switzerland.[28] We added two additional practices: cholesterol measurement, because it is a highly recommended intervention in preventive care, and screening for prostate cancer, because several Swiss and French medical agencies recently recommended against systematic screening.[5 29–31] We did not include diabetes screening in our project, because it is only recommended when other cardiovascular risk factors are present.[32 33] We did not include screening for breast and cervical cancer either because, in Switzerland, they are often carried out by gynaecologists, in particular in mostly urban cantons such as Geneva and Vaud.

We restricted the data presented here to five preventive care practices for which we asked additional questions about how GPs were providing them (four practices regarding screening: dyslipidaemia, hazardous drinking, colorectal and prostate cancer; and one regarding counselling: advice to decrease drinking for hazardous drinkers). These five practices were selected because they illustrate the three major topics leading to high morbidity and mortality in most high-income countries (cardiovascular diseases, cancers and addictions) and because they can be applied in a variety of ways.[34 35] For the screening of dyslipidaemia, colorectal and prostate cancers, we asked GPs to specify screening starting and ending ages and screening frequency. We also asked which diagnostic test they were generally using for the screening of dyslipidaemia (full lipid profile or total cholesterol) and colorectal cancer (colonoscopy or stool-based tests (guaiac faecal occult blood test or faecal immunochemical test (FIT)) and whether they usually screened for prostate cancer in the context of a shared and informed decision process. Finally, we asked them whether they used a validated questionnaire to screen for hazardous drinking (and if yes, which one) and which definitions of hazardous, including binge drinkers, they were generally using.

Seven GPs pretested the questionnaire so as to ensure that it was understandable and easy to complete. All collected data remained confidential throughout the study. We assumed that a tacit consent was given when a GP returned the completed questionnaire. We did not collect any data regarding GPs who had refused to participate in the study. In Switzerland, informed consent waiving was granted by the Research Ethics Committee of Geneva (under Swiss law informed consent is required when collecting personal health data, not when exploring practices), whereas in France, the research protocol was approved by the *Groupe nantais d'éthique en santé* (ref: 2015-09-06).

Statistical analyses

We computed the proportion of GPs delivering each of the five preventive practices, defined as the proportion of GPs scoring 4 or 5/5 on the Likert scale, with estimated 95% CIs. Proportions were also split by country, gender and age group. Multivariate analysis adjusting for country, gender and class of age were also performed. Differences of proportion were tested with χ^2 tests. For quantitative values (eg, age, frequency and number of glasses) t-test were used. Statistical significance was set at a two-sided p value of ≤0.05. All the analyses were carried out with TIBCO Spotfire S+ 8.1 for Windows (TIBCO Software, Palo Alto, California, USA) or R V.3.2.2 (R Foundation for Statistical Computing, Vienna, Austria).

RESULTS

Among the 3400 GPs who were selected at random (1000 in Switzerland and 2400 in France), 764 (response rate: 47% in postal group and 11% in online group) responded to the questionnaire (428 in Switzerland and 336 in France). Table 1 presents their main sociodemographic characteristics, overall and by country of practice. The GPs' distribution by gender was relatively similar in the two countries (men: 59% in Switzerland vs 58% in France), as well as the number of half-days worked per week (8.5 vs 8.7). Some differences could be observed regarding the age distribution (>64 years: 13% in Switzerland vs 6% in France; <35 years: 1% in Switzerland vs 8% in France) and the number of working years in the current practice (20 in France vs 17 in Switzerland). Our sample appears to be similar in age and gender to all GPs practicing in Switzerland (professional organisation of Swiss physicians, 2016: median age 54 years (vs 54 years in our study), men 59% (vs 59% in our study)) and France (Pays de Loire, 2013: median age 51 years (vs 48 years in our study), men 57% (vs 53% in our study)).[22 36]

Tables 2 and 3 show the self-reported preventive care practices in the two countries. A large variability was observed in the way in which GPs applied these preventive recommendations. In general, screening for dyslipidaemia (93% with full lipid profile test) was provided yearly to patients who were 40–80 years old. The vast majority of GPs did not use any test to screen for hazardous drinking (77% in Switzerland and 91% in France), but when they did use one, the CAGE was most frequently chosen in both countries. For the majority of GPs, hazardous drinking was defined as the consumption of ≥21 drinks/week for men and 14 drinks/week for women, and as ≥4 drinks/occasion for men and three drinks/occasion for women, for both countries. Screening for colorectal cancer, mainly with colonoscopy in Switzerland (86%) and FIT in France (93%), was provided every 10 years in Switzerland and every 2 years in France to patients who were 50–75 years old. Finally, screening for prostate cancer, usually in the context of a shared decision (82%), was provided yearly to patients who were 50 to 75-80 years old.

Online supplementary file 2 and supplementary file 3 show the self-reported GPs' preventive care practices by GP gender and age group (for online supplementary file 2 screening for dyslipidaemia and hazardous

Table 1 General practitioners' characteristics in the two countries (n=764)

Characteristics	Switzerland (n=428)	France (n=336)		Total (n=764)
	n* (%)	n* (%)	p Value†	n* (%)
Gender				
Male	240 (59.1)	188 (58.0)	0.83	428 (55.6)
Female	166 (40.9)	136 (42.0)		302 (44.4)
Age group (years)				
<35	2 (0.5)	27 (8.2)	<0.001	29 (3.9)
35–44	94 (23.1)	63 (19.0)		157 (21.3)
45–54	112 (27.5)	86 (26.0)		198 (26.8)
55–64	148 (36.4)	134 (40.5)		282 (38.2)
>64	51 (12.5)	21 (6.3)		72 (9.8)
	Mean±SD	Mean±SD		Mean±SD
Mean number of half-days worked per week	8.5±2.5	8.7±2.0	0.31	8.6±2.3
Number of working years in the current practice	16.7±10.5	19.6±11.5	<0.001	18.0±11.1

*Numbers do not add up to 428, 336 and 764 because of missing values.
†Comparisons of proportions were made with χ^2 tests; comparisons of continuous values were made with Student's t-test.

drinking and online supplementary file 3 for colorectal and prostate cancer screening). There are only very few differences between the groups regarding the characteristics of the preventive care practices. Colorectal cancer screening was proposed (with colonoscopy) every 10 years by a majority of GPs <55 years (70%), and prostate cancer yearly by a majority of female GPs (69%), whereas higher dispersions (ie, higher variability) were observed among older GPs for colorectal cancer and male GPs for prostate cancer.

DISCUSSION
Summary
We identified a large variability in the way in which French-speaking GPs apply preventive care recommendations. The association between GPs' gender, age and country of practice and the way they apply preventive recommendation is generally small, except for screening for colorectal cancer (colonoscopy in Switzerland vs FIT in France).

Comparison with existing literature
The results of this study showed a high diversity in the way preventive care was provided by GPs, which frequently was not in accordance with local guidelines (see online supplementary file 4 for Swiss[12 29 32 33 37–39] and French recommendations[6 30 31 40–45] on how GPs are expected to deliver these five preventive care practices). Screening for colorectal cancer is however the archetypal example of a screening carried out according to the usual recommendations. Indeed, a large majority of GPs screen the recommended target population (patients between 50 and 75 years old), using common screening tests (colonoscopy or stool-based tests in Switzerland and mainly stool-based tests in France), with the recommended

screening frequency (every 10 years for colonoscopy in Switzerland and every 2 years for FIT in France). Note that stool-based tests are provided by less than one-fifth of Swiss GPs, though it is an alternative recommended screening test for colorectal cancer in this country. This finding is in accordance with a recent study showing a growth in colorectal cancer screening due to greater use of endoscopy (increase of colonoscopy utilisation from 8% to 15% and decrease of stool-based tests utilisation from 13% to 10% between 2007 and 2012).[46] FIT (and not colonoscopy) is the most frequently used test in France as part of the national screening programme for colorectal cancer in this country. However, it should be borne in mind that FIT is the recommended screening test for general populations without specific risk factors. Colonoscopy, however, is recommended for higher risk patients such as, for example, patients with a family history of colorectal cancer. There is currently no national screening programme in Switzerland.

Different results with much higher heterogeneity are observed for screening for dyslipidaemia and prostate cancer and counselling for hazardous alcohol consumption. Only one-third of Swiss and French GPs screen for dyslipidaemia as from the age of 40 years (the recommended starting age in the two countries), and only 8% of Swiss GPs and 20% of French GPs, respectively, follow the recommended 5-year screening frequency.

Similarly, though the majority of GPs screen prostate cancer from 50 years (the recommended starting age for Switzerland), less than one-third of Swiss GPs stops screening at the recommended age of 75 years (almost half of Swiss GPs stops screening at 70 or 80 years).

For the majority of GPs, hazardous drinking was defined as the consumption of ≥21 drinks/week for men and 14 drinks/week for women, and as ≥4 drinks/occasion

Table 2 Self-reported preventive care practices of general practitioners in the two countries: screening for dyslipidaemia and hazardous drinking

Characteristics	Switzerland (n=428)		France (n=336)			Total (n=764)	
	%	95% CI	%	95% CI	p Value*	%	95% CI
Screening for dyslipidaemia							
Starting age					0.005		
30 years	15.8	12.0 to 19.7	18.7	13.9 to 23.6		17.1	14.0 to 20.1
40 years	32.0	27.0 to 36.9	35.5	29.5 to 41.4		33.4	29.6 to 37.2
45 years	8.2	5.3 to 11.1	7.2	4.0 to 10.4		7.8	5.6 to 9.9
50 years	15.2	11.4 to 19.1	11.6	7.6 to 15.5		13.7	10.9 to 16.5
Other	28.7	23.9 to 33.5	27.1	21.6 to 32.6		28.0	24.4 to 31.7
Ending age					0.82		
70 years	12.9	9.3 to 16.5	12.7	8.6 to 16.9		12.8	10.1 to 15.5
75 years	20.5	16.2 to 24.8	16.3	11.8 to 20.9		18.8	15.6 to 21.9
80 years	37.2	32.1 to 42.4	39.8	33.8 to 45.9		38.3	34.4 to 42.3
100 years	6.7	4.1 to 9.4	7.2	4.0 to 10.4		6.9	4.9 to 9.0
Other	22.6	18.1 to 27.0	23.9	18.6 to 29.2		23.1	19.7 to 26.5
Screening frequency					<0.001		
Yearly	46.9	41.6 to 53.2	32.3	26.5 to 38.1		40.7	36.8 to 44.7
Every 2 years	27.0	22.3 to 31.7	26.3	20.8 to 31.7		26.7	23.1 to 30.3
Every 3 years	9.4	6.3 to 12.5	15.5	11.1 to 20.0		12.0	9.4 to 14.6
Every 5 years	7.6	4.8 to 10.4	19.5	14.6 to 24.4		12.7	10.0 to 15.3
Other	9.1	6.0 to 12.1	6.4	3.4 to 9.4		7.9	5.8 to 10.1
Test used					0.96		
Total cholesterol	3.8	1.8 to 5.8	4.4	1.9 to 6.9		4.1	2.5 to 5.6
Full lipid profile	91.5	88.5 to 94.5	94.4	91.6 to 97.3		92.7	90.6 to 94.8
Screening for hazardous drinking							
Test used					<0.001		
No	77.2	72.4 to 81.9	91.4	87.2 to 95.5		82.4	79.0 to 85.8
Yes	20.8	16.2 to 25.4	8.1	4.0 to 12.1		16.1	12.8 to 19.4
AUDIT	24.2	13.5 to 34.9	28.6	4.9 to 52.2		25.0	15.3 to 34.7
CAGE	77.4	67.0 to 87.8	57.1	31.2 to 83.1		73.7	63.8 to 83.6
MAST	6.5	0.3 to 12.6	21.4	0.0 to 42.9		9.2	2.7 to 15.7
Advice to decrease drinking for hazardous drinkers							
Definition of male hazardous drinkers					0.05		
≥14 drinks/week	12.0	8.4 to 15.6	7.4	4.2 to 10.6		9.9	7.4 to 12.4
≥15 drinks/week	6.8	4.0 to 9.6	7.4	4.2 to 10.6		7.1	5.0 to 9.2
≥20 drinks/week	14.2	10.3 to 18.1	16.7	12.2 to 21.3		15.4	12.4 to 18.3
≥21 drinks/week	22.0	17.4 to 26.6	25.3	20.0 to 30.6		23.5	20.0 to 27.0
Other	45.0	39.4 to 50.5	43.2	37.1 to 49.2		44.2	40.1 to 48.3
Definition of female hazardous drinkers					0.08		
≥7 drinks/week	12.9	9.2 to 16.7	6.2	3.3 to 9.2		9.9	7.4 to 12.4
≥10 drinks/week	9.1	5.9 to 12.3	11.7	7.7 to 15.6		10.2	7.7 to 12.7
≥14 drinks/week	26.5	21.6 to 31.5	30.0	24.4 to 35.6		28.1	24.4 to 31.8
≥15 drinks/week	10.4	7.0 to 13.8	13.6	9.4 to 17.8		11.8	9.2 to 14.5
Other	41.1	35.6 to 46.6	38.5	32.6 to 44.5		39.9	35.9 to 44.0
Definition of male binge drinkers					0.09		
≥3 drinks/occasion	11.3	7.8 to 14.9	14.0	9.8 to 18.3		12.5	9.8 to 15.3
≥4 drinks/occasion	15.5	11.5 to 19.6	24.5	19.3 to 29.8		19.6	16.3 to 22.9

Continued

Table 2 Continued

Characteristics	Switzerland (n=428)		France (n=336)			Total (n=764)	
	%	95% CI	%	95% CI	p Value*	%	95% CI
≥5 drinks/occasion	13.9	10.1 to 17.8	15.6	11.1 to 20.0		14.7	11.7 to 17.6
≥6 drinks/occasion	6.2	3.5 to 8.8	8.2	4.8 to 11.5		7.1	5.0 to 9.2
Other	53.1	47.5 to 58.6	37.7	31.8 to 43.7		46.1	42.0 to 50.2
Definition of female binge drinkers					0.22		
≥2 drinks/occasion	10.4	7.0 to 13.8	15.6	11.1 to 20.0		12.7	10.0 to 15.5
≥3 drinks/occasion	19.4	15.0 to 23.8	23.3	18.2 to 28.5		21.2	17.8 to 24.6
≥4 drinks/occasion	13.9	10.1 to 17.8	15.6	11.1 to 20.0		14.7	11.7 to 17.6
≥5 drinks/occasion	7.1	4.3 to 10.0	10.5	6.8 to 14.3		8.7	6.3 to 11.0
Other	49.2	43.6 to 54.8	35.0	29.2 to 40.9		42.8	38.7 to 46.8

*Comparisons of proportions were made with χ^2 tests.
AUDIT, Alcohol Use Disorders Identification Test; CAGE, acronym of its four questions (Cut down, Annoyed, Guilty, Eye-opener); MAST, Michigan Alcoholism Screening Test.

for men and three drinks/occasion for women, for both countries. Note that, in recent years, several countries have revised their guidelines regarding hazardous alcohol drinking, including France.[47] The French expert group recommends in its recent publication (May 2017) that alcohol consumers take no more than 10 standard drinks per week and no more than two standard drinks per day for men and women.[47] These thresholds have been chosen, because they represent an absolute lifetime risk of alcohol-related mortality for the French population between 1% and 1 per 1000.

Some of the reasons for not performing prevention practices according to recommendations (such as lack of time and method of reimbursement for medical care) can vary between countries, which could partly explain the country differences in our study. In France, the healthcare system is separated into three sectors and GPs have to choose in which sector they wish to work. The government regulates rates for medical consultations within sector 1 (ie, preset fixed fees per consultation). In Sector 2, higher fees are allowed within reason, and in sector 3, there are no fee limits. A large majority of GPs are in sector 1. By contrast, the Swiss ambulatory healthcare system is based on fee-for-service payments that are related to the consultation time.[48]

Major changes in GPs' profile and activities are observed in many Western countries (including France and Switzerland). Nowadays, GPs are older, more often female and they more often work in group practices.[48] In Switzerland, whereas the number of face-to-face consultations is lower, the median time of consultation tends to be longer (20 min vs 15 min in France).[48–50] When compared with other European countries, the consultation time is particularly high in Switzerland.[49]

The large diversity in the way screening for dyslipidaemia and prostate cancer are provided could be related to three interrelated factors: lack of knowledge of the current guidelines, barriers to guideline adherence and lack of agreement between the various available recommendations.[5 16 17]

The relative lack of knowledge of the guidelines could in part be attributed to the rapid evolution of scientific knowledge, which in turn requires frequent modifications in the guidelines. However, this factor (lack of awareness) is probably also explained by lack of agreement between the various recommendations, which is corroborated by our finding that a large majority of GPs screen for colorectal cancer appropriately, that is, in accordance with the recommendations; indeed, the guidelines used for screening colorectal cancer show a relatively high level of agreement compared with those proposed in relation to screening for dyslipidaemia and prostate cancer.

The variability of the current guidelines is probably not linked to variations in access to scientific knowledge, because all medical agencies, researchers and experts are expected to develop their recommendations on the same evidence-based data.[5] Differences in settings, local epidemiological, socioeconomic and cultural contexts, perceptions of healthcare priorities and health delivery systems, may all explain some of the discrepancies between the guidelines.[5]

Among a wide spectrum of barriers to guideline adherence, such as lack of motivation, patients' preferences, time and organisational constraints, GPs may perceive some recommendations as not being applicable in daily practice.[16 17] These barriers could probably be in part overcome if GPs were more often involved in the development of these guidelines. More frequent appraisal and adaptation of guidelines using an assessment instrument such as Appraisal of Guidelines for Research and Evaluation is also an essential way of favouring higher uptake by GPs.[51] Yet, the lack of awareness or familiarity with the guidelines is often mentioned by GPs as a barrier to guideline adherence, which again may be related to the diversity of current guidelines and to the absence of national programmes to implement prevention guidelines in general practices in French-speaking countries.[16 17]

Table 3 Self-reported preventive care practices of general practitioners in the two countries: screening for colorectal and prostate cancer

Characteristics	Switzerland (n=428)		France (n=336)			Total (n=764)	
	%	95% CI	%	95% CI	p Value*	%	95% CI
Screening for colorectal cancer							
Starting age					<0.001		
40 years	3.4	1.5 to 5.3	7.3	4.3 to 10.3		5.2	3.4 to 6.9
50 years	87.4	84.0 to 90.0	86.5	82.6 to 90.4		87.0	84.4 to 89.6
55 years	3.4	1.5 to 5.3	0.7	0.0 to 1.6		2.2	1.1 to 3.3
Other	5.7	3.3 to 8.1	5.5	2.9 to 8.2		5.6	3.8 to 7.4
Ending age					<0.001		
70 years	17.1	13.2 to 21.1	9.0	5.7 to 12.3		13.5	10.8 to 16.1
74 years	0.3	0.0 to 0.8	9.7	6.3 to 13.1		4.5	2.9 to 6.2
75 years	63.7	58.7 to 68.8	70.6	65.3 to 75.8		66.8	63.2 to 70.5
80 years	35.4	30.4 to 40.4	15.2	11.1 to 19.4		26.3	22.9 to 29.7
Other	18.9	14.8 to 23.0	10.7	7.2 to 14.3		15.2	12.4 to 18.0
Test used					<0.001		
Colonoscopy	86.3	82.7 to 89.9	5.2	2.6 to 7.7		49.6	45.7 to 53.5
FOBT or FIT	12.0	8.6 to 15.4	93.1	90.2 to 96.0		48.7	44.8 to 52.5
Screening frequency if colonoscopy					<0.001		
5 years	18.5	14.2 to 22.9	66.7	42.8 to 90.5		20.8	16.4 to 25.3
10 years	64.9	59.5 to 70.3	0.0			61.8	56.5 to 67.2
Other	16.6	12.4 to 20.7	33.3	9.5 to 57.2		17.5	13.2 to 21.5
Screening frequency if FOBT or FIT					0.70		
Yearly	31.0	17.0 to 44.9	2.2	0.5 to 4.0		6.1	3.4 to 8.8
2 years	47.6	32.5 to 62.7	91.4	88.1 to 94.8		85.5	81.6 to 89.4
Other	21.4	15.0 to 33.8	6.3	3.4 to 9.2		8.4	5.3 to 11.4
Screening for prostate cancer							
Starting age					0.11		
45 years	9.7	5.9 to 13.5	8.9	4.8 to 12.9		9.3	6.6 to 12.1
50 years	70.9	65.1 to 76.7	77.1	71.1 to 83.0		73.7	69.5 to 77.8
Other	19.4	14.4 to 24.4	14.1	9.1 to 19.0		17.0	13.5 to 20.6
Ending age					0.25		
70 years	19.4	14.4 to 24.4	7.3	3.6 to 11.0		14.0	10.7 to 17.3
75 years	31.2	25.3 to 37.1	37.0	30.2 to 43.8		33.8	29.3 to 38.3
80 years	28.3	22.5 to 34.0	36.5	29.7 to 43.3		31.9	27.5 to 36.3
Other	21.1	15.9 to 26.3	19.3	13.7 to 24.8		20.3	16.5 to 24.1
Screening frequency					<0.001		
Yearly	52.3	46.0 to 58.7	72.9	66.6 to 79.2		61.5	56.9 to 66.1
2 years	32.1	26.1 to 38.0	21.9	16.0 to 27.7		27.5	23.3 to 31.7
Other	15.6	11.0 to 20.2	5.2	2.1 to 8.4		11.0	8.0 to 13.9
Shared decision	88.2	81.2 to 92.3	75.0	68.9 to 81.1	<0.001	82.3	78.7 to 85.9

*Comparisons of proportions were made with χ^2 tests.
FIT, faecal immunochemical test; FOBT, faecal occult blood test.

Over the last decades, attention mainly focused on underuse of various preventive practices, such as screening for dyslipidaemia and cancers.[52] However, overuse can also be problematic because of unnecessary costs as well as patient burden (psychological and other risks) from overdiagnosis. We showed that a certain number of GPs overuse preventive practices (eg, overall, 17% of GPs report starting screening for dyslipidaemia at 30 years, whereas 40 years is the recommended starting age in the two countries). Overutilisation of preventive practices has

been shown in particular for dyslipidaemia as well as for colorectal, breast, cervical and prostate cancer[52 53] and could be explained in two ways: lack of knowledge of the current guidelines and also by the fact that GPs could be put under pressure by their patients to perform certain practices, even if they are not recommended. Overuse of lab tests-based screening (such as screening for dyslipidaemia) has also been shown in patients requiring repeat blood tests to follow-up various comorbidities and in relation to treat-to-target lipid lowering strategies.[54]

Several actions may help to improve the current situation and overcome the obstacles that have been identified above (gaps in knowledge, barriers to guideline adherence and lack of agreement between guidelines). For example, we could mention the development and implementation of guidelines specifically dedicated to prevention activities, the involvement of GPs in their development and in the establishment of a prioritisation process, the organisation of nationwide campaigns, the use of recall systems and the implementation of a systematic performance monitoring.[5 6 55] However, we consider that these practices should be complemented by harmonisation of the current guidelines, at least at a European level, to be fully effective. There is often a low level of agreement between the various guidelines and high variability in the choice of methodology and grading system is observed in their development. The choice of the clinical categories and the target populations could also be problematic, resulting in a number of difficulties to determine to whom and how preventive care should be provided.

Limitations

Several limitations should be kept in mind when considering the results of this study. First, all the answers were self-reported, which could lead to social desirability biases (ie, natural tendency to engage in socially desirable responding by over-reporting good behaviour and/or under-reporting undesirable behaviour).[56] Second, the recruitment of GPs was restricted to four French-speaking regions (two in Western Switzerland and two in France); this relatively restricted sample may not be representative of all GPs practicing either in Europe or in French-speaking continental Europe. Third, although nearly half of those invited to participate by post returned the questionnaire, response rates in those who were invited to respond online were very low (11%). Therefore, the hypothesis of a different profile between responders and non-responders cannot be ruled out. However, we assumed a total participation rate of 25% in the calculation of our sample size, and our study sample size was in fact higher than the estimated minimal required sample size for our study. In addition, our sample appears to be representative in terms of age and gender of all GPs practicing in Switzerland and France (data from Pays de la Loire). The fact that response rates were higher for Swiss (43%) compared with French GPs (14%) could also introduce a certain degree of selection bias. Fourth, though the GPs practicing in Switzerland showed fairly similar

sociodemographic characteristics to those practicing in France, were some slight differences regarding the age distribution and the experience as GP, which might have led to additional bias.

Implications for research and practice

In conclusion, the large heterogeneity in the way preventive care is provided need to be addressed, as it could be related to some misunderstanding of the current guidelines, to barriers to guideline adherence or, more likely, to the absence of agreement between the various recommendations. Considerable efforts should be made to harmonise the current guidelines and implement them in primary care offices. This is an essential task to improving the quality of preventive care and, in fine, to reducing the burden of chronic diseases and medical costs.

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