ORIGINAL ARTICLE



Induced Prescription From Reference Hospital Universitari Vall d'Hebron to General Practitioners

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Objectives. Our objectives were to describe proportion of patients with induced prescription (IP) from reference hospital, the information about diagnosis and treatment that GP get as well as their agreement with the prescription. We also analized the quality of IP assessed by GP's quality of prescription criteria.

Design. Cross-sectional study. **Setting**. Six urban health care centers. **Participants**. Patients and drugs prescribed from the reference hospital and derivated to health care center to get treatments. **Measurements**. Origin of patients, diagnosis, treatment and the GP's agreement with it, and whether that information was enough to allow patient's control.

Main results. Thirty six GP collected data from 323 patients and 844 drugs from reference hospital. 52% (95% CI, 47-58) of IP came from the emergency room. Medical conditions more frequently associated with IP were chronic obstructive pulmonary disease, lumbosciatica and traumatism. The most prescribed drugs were analgesics and NSAIDs. GP's agreement with IP reached 63% (95% CI, 60-67). Most frequent disagreement cause was drug selection (61 drugs; 7.2% of IP). In some 20% (95% CI, 16-25) of patients information wasn't sufficient enough to assume patient's control. Conclusions. A stronger relation between GP's and hospital doctors would be needed to establish common treatments for patients' frequent conditions and their follow-up.

Key words: Induced prescription. Primary health care. Medical reports. Selection of drugs.

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Objetivos. Describir el porcentaje de pacientes con prescripción inducida (PI) por el hospital de referencia, así como la información aportada sobre el diagnóstico y. el tratamiento, el grado de acuerdo del médico de familia con éstos y la evaluación de la PI según los criterios de calidad de prescripción de atención primaria. **Diseño.** Estudio descriptivo transversal. **Emplazamiento.** Un total de 6 equipos de atención primaria urbanos. **Participantes.** Pacientes derivados y fármacos indicados por el hospital de referencia y solicitados a los médicos de familia de atención primaria.

Mediciones principales. Procedencia de los pacientes, diagnóstico, tratamiento, grado de acuerdo con éstos e información aportada para el control del paciente.

Resultados. Un total de 36 médicos recogieron datos de 323 pacientes y 844 fármacos procedentes del hospital de referencia. El 52% (intervalo de confianza [IC] del 95%, 47-58) de la PI se originó en urgencias. Las enfermedades que originaron más PI fueron la enfermedad pulmonar obstructiva crónica, la lumbociatalgia y los traumatismos. Los fármacos más inducidos fueron analgésicos y antiinflamatorios no esteroideos. Los médicos de familia estuvieron de acuerdo con el 63% de la PI (IC del 95%, 60-67). La mayor discrepancia se produjo por la selección del fármaco (61 fármacos; 7,2% de la PI). En un 20% (IC del 95%, 16-25) de pacientes la información fue considerada insuficiente para su control. Conclusiones. Sería necesaria una mayor relación entre los médicos de familia y hospitalarios para establecer acuerdos en la selección de fármacos para el tratamiento de enfermedades frecuentes y en el seguimiento de los pacientes.

Palabras clave: Prescripción inducida. Atención primaria. Informes médicos. Selección de fármacos. Spanish version available at www.atencionprimaria.com/91.273

> A commentary follow this article (pág. 124)

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Introduction

recent analysis of studies on induced prescription \mathbf{I} (IP) reveals differences in how this phenomenon is conceptualized. Most studies consider IP to originate in specialized health care, private practice, the patients themselves, or other agents in the health care process.¹⁻³ Other studies have looked at IP occurring in specialized care within public systems,⁴ and some authors have considered IP only in patients who are followed up by specialists.⁵ A notable feature of these studies is the different methodological approaches they have used: some have estimated prevalence, 1-3,5-8 others incidence;^{9,10} some have focused on specific therapeutic subgroups,¹¹ others on certain types of prescriptions such as those for chronic medication.¹² As a result, reported percentage rates of IP range from 9% to 77%.¹⁻¹² Few studies have measured the degree of agreement between the primary care physician and the physician who requests the IP.¹⁻³ We consider this aspect to be fundamental, because of the potential to create conflict for family physicians who dissent from the decision to request an IP.

Compounding the problem is the fact that primary care physicians are subject to a number of prescribing targets.¹³ which, if disagreement arises with the referring physician, may be difficult to achieve because of the patients' faith in the specialist's opinion (the so-called preacher effect)² over the family physician's point of view. We are unaware of any studies in Spain that have analyzed prescriptions induced by reference hospital colleagues but written by primary care physicians, the information supplied by the hospital, and the quality of prescribing practices evaluated according to criteria used in primary care. Those studies that have examined the quality of IP measure the intrinsic value of the drug.^{2-4,7,10,12,14}

With the goal of developing activities to counter this problem, we chose as our overall objective the characterization of induced prescribing by physicians at a reference hospital (Hospital Universitario Vall d'Hebron), in physicians at primary care centers (PCC) located in the health care administration district served by the reference hospital.

Specific Objectives

1. To quantify the volume of patients with medication indicated by the reference hospital physician and referred to their PCC physician for prescriptions and follow-up.

To describe the characteristics of patients with IP.
 To identify the health problems that lead to IP.
 To determine the percentage of patients for whom information provided by the reference hospital is insufficient for adequate follow-up.

5. To describe the information supplied by the hospital regarding IP.

6. To describe the degree of agreement of primary care physicians with IP.

7. To analyze IP according to prescription quality criteria used for primary care by the Catalonian Institute of Health.

Material and Methods

In this descriptive, cross-sectional study we invited all family physicians at six reformed urban PCC to participate. The centers were located within the area served by the reference hospital. The population served by the participating PCC was 107 826 inhabitants, 16.7% of whom were older than 64 years.

Study Population

The study population consisted of patients on medication indicated by the reference hospital physician, and who were referred back to their PCC for follow-up and to obtain prescriptions on the days the study was carried out. Patients younger than 14 years were excluded.

Sample

To estimate the proportion of patients with IP we estimated that a minimum of 384 patients were needed (assuming 50% prevalence, 0.05% precision and 95% confidence intervals). Because it



General Scheme of the Study

Descriptive, cross-sectional, multicenter study to characterize induced prescription by reference hospital physicians in primary care physicians. was possible to study a larger number of patients we decided to include all patients referred to their PCC and all medications indicated by reference hospital physicians and for which prescriptions were written at the PCC on 10 consecutive working days during the months of April, May and June 2000.

We used a specially designed data sheet and instruction booklet for completing the sheet. All data were recorded by participating physicians.

Variables

1. Information about the center: name of the PCC, family physician, date the sheet was completed.

2. Information about the patient: age, sex, medical record number.

3. Information about the IP: origin (emergency room, out-patient clinic, discharge from hospital ward), specialty of the physician who induced the prescription, diagnosis according to the International Primary Care Classification,¹⁵ pharmaceutical specialty according to the ACT classification of drugs,¹⁶ dosage, duration of treatment, agreement of the family physician with the IP, and reason for dissenting with the IP. We included an item that asked family physicians whether they considered the information supplied by the hospital to be sufficient for followup of the patient.

Evaluation of Prescription Quality

We used a prescription quality standard which describes the pattern of use of medications in primary care.¹³ This document consists of indicators grouped into two sections. The first set of indicators is designed to analyze prescribing practices in general terms of intrinsic pharmacological value, prescription of generic pharmaceutical specialties, consumption of new medications, and compliance with the recommendations of the Comité de Evaluación de Nuevos Medicamentos (New Drug Evaluation Committee).¹⁷ The second set of indicators deals with compliance with the recommendations for the use of drugs from certain therapeutic subgroups such as antihypertensives, antacids, antiinflammatory drugs, antibiotics, lipid reducing agents, antiasthmatics, antidepressants, anxiolytics/hypnotics and sedatives, and oral antidiabetics.

The information on each data sheet was entered in a database on a personal computer, and a descriptive analysis was obtained with the SPSS, v. 10.

Results

Of the 52 physicians eligible to participate in the study, 36 (69.2%) recorded data for 323 patients with IP from the reference hospital. Hospital visits or stays by these patients led to 768 prescriptions for a total of 844 active principles. The mean number of active principles per patient was 2.65 (SD, 1.8, range 1 to 9).

The total number of patients seen by participating physicians was 5997. Patients with IP made up approximately 5.4% (95% CI, 4.8%-5.9%) of all patients seen.

Of the 323 patients, 168 (52%, 95% CI, 47%-58%) were referred from the emergency room, 105 (33%, 95% CI, 27%-38%) from out-patient clinics, and 50 (15%, 95% CI, 12%-19%) after discharge from the hospital ward. Slightly

TABLE Distribution of Induced Prescriptions (Patients and Medications) by Indication

	Patients, n (%)	Medication, n (%)
COPD and respiratory superinfection	26 (8.0)	104 (12.3)
Back pain and sciatica	21 (6.5)	64 (7.6)
Injuries and fractures	30 (9.3)	54 (6.4)
Ischemic heart disease or AMI	14 (4.3)	47 (5.6)
Neck pain	14 (4.3)	35 (4.1)
Acute ARV infection	9 (2.8)	33 (3.9)
Dental disease	6 (1.9)	25 (3.0)
Hepatitis C virus	4 (1.2)	17 (2.0)
Renal colic	8 (2.5)	17 (2.0)
Pneumonia	6 (1.9)	15 (1.8)
Urinary tract infection	6 (1.9)	13 (1.5)
Heart failure	5 (1.5)	13 (1.5)
Abdominal pain	7 (2.2)	12 (1.4)
Arthritis	7 (2.2)	11 (1.3)
Prostate disease	2 (0.6)	11 (1.3)
Hypertension	7 (2.2)	11 (1.3)
Peptic ulcer	5 (1.5)	10 (1.2)
Liver cirrhosis	2 (0.6)	10 (1.2)
Cerebrovascular accident	6 (1.9)	10 (1.2)
No diagnosis given	54 (16.7)	93 (11.0)
Other	75 (23.2)	239 (28.3)
Total	323 (100)	844 (100)

more than half (174 patients, 53.9%) were women. The proportion of women was greater among patients referred from out-patient departments (61%), and smaller among patients who were discharged from the hospital ward with requests for prescriptions (40%). Mean age was 56.8 years (SD, 20.8; range 16 to 100 years). The greatest numbers of patients were from the traumatology (59 patients, 18.3%) and internal medicine departments (46, 14,2%).

Of the total of 844 medications, 399 (47%, 95% CI, 44%-51%) were indicated by emergency room physicians, 226 (27%, 95% CI, 24%-30%) by out-patient department physicians, and 219 (26%, 95% CI, 23%-29%) by inpatient ward physicians. Medications were prescribed for a total of 129 health problems (mean number of diagnoses per patient: 2.7; SD, 1.8). Almost one-fourth (196 medications, 23.2%) were prescribed for musculoskeletal problems, 166 (19.7%) for respiratory problems, 112 (13.3%) for cardiovascular problems, 91 (10.8%) for alimentary tract problems, and 55 (6.5%) for genitourinary tract problems.

Table 1 shows the distribution of the IP (number of patients and type of medication) by indication. Table 2 shows the IP in 26 patients diagnosed as having chronic obstructive pulmonary disease (COPD) and respiratory tract superinfection.
 TABLE
 Induced Prescriptions in 26 Patients With Chronic Obstructive Pulmonary Disease and Respiratory Superinfection

Patients, n (%)	Medication, n (%)
23 (88.5)	23 (22.1)
18 (69.2)	18 (17.3)
2 (7.7)	2 (1.9)
2 (7.7)	2 (1.9)
1 (3.8)	1 (1.0)
19 (73.1)	19 (18.3)
16 (61.5)	16 (15.4)
3 (11.5)	3 (2.9)
17 (65.4)	17 (16.3)
15 (57.7)	15 (14.4)
13 (50.0)	13 (12.5)
3 (11.5)	3 (2.9)
14 (53.8)	14 (13.4)
26 (100)	104 (100)
	Patients, n (%) 23 (88.5) 18 (69.2) 2 (7.7) 2 (7.7) 1 (3.8) 19 (73.1) 16 (61.5) 3 (11.5) 17 (65.4) 15 (57.7) 13 (50.0) 3 (11.5) 14 (53.8) 26 (100)

In 64 patients (20%, 95% CI, 16%-25%) the primary care physician considered the information from the hospital to be insufficient to ensure adequate follow-up. Of these patients, 46 (71.9%) were referred from outpatient departments (Figure 1). The traumatology department was identified as the source of the greatest number of patients for whom information was inadequate (11 patients, 17.2%).

Notably, no diagnosis was indicated for 93 medications (11.2%), 77 (82.8%) of which were requested by physicians at outpatient departments. For 46 medications (5.4%) no dosage was indicated, and for 376 (44.6%) the duration of treatment was not specified. The diagnosis, dosage and duration of treatment were indicated for 306 medications (44.5%).

For 534 (63%, 95% CI, 60%-67%) medications the family physician concurred with the referring physician who requested the IP; for 114 (14%, 95% CI, 11%-16%) there was partial agreement, whereas for 44 (5%, 95% CI, 4%-7%) there was complete disagreement (Table 3). The groups of medical conditions associated most frequently with disagreement over the IP were musculoskeletal (42)



medications, 26.6%) and respiratory disorders (23 medications, 14.6%). For 61 medications (7.2%) the physicians disagreed on the choice of drug, and for 48 (5.6%) the family physician felt that no prescription medication was needed.

The distribution of IP (number of patients and type of medication) by therapeutic subgroup is shown in Table 4. The most frequently indicated medications were paracetamol (acetaminophen) (57 patients, 6.8%), diclofenac (51, 6%), metamizole (50, 5.9%), omeprazole (32, 3.8%) and ranitidine (31, 3.7%).

Quality of the different IP according to prescribing standards used in primary care is shown in Table 5.

Discussion

We found IP in approximately 5% of the patients referred by the reference hospital for follow-up to their primary care physician. Although most studies measure IP per se rather than the proportion of patients with at least one IP, we felt it was important to obtain information on the lat-

ter, which is potentially useful in managing patient care as opposed to controlling pharmaceutical costs. One study⁹ found IP in 3.8% of the patients. Two studies^{1,2} found IP in 36% and 58% of the patients, but because they estimated the prevalence of patients with IP of any origin, their figures cannot be compared to ours, as we recorded only those patients with IP originating from the reference hospital.

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Oeigin	Complete Agreement, n (%)	Partial Agreement, n (%)	Complete Disagreement, n (%)	Unknown, n (%)	Total n (%)
Emergency room	249 (62.4)	70 (17.5)	29 (7.3)	51 (12.8)	399 (100)
Out-patient clinics	111 (49.1)	31 (13.7)	8 (3.5)	55 (24.3)	226 (100)
Hospital ward disch	narge174 (79.5)	13 (5.9)	7 (3.2)	23 (10.5)	219 (100)
Total	534 (63.3)	114 (13.5)	44 (5.2)	129* (15.3)	844 (100)

*Unknown =23.

TABLE **Distribution of Induced Prescriptions by Therapeutic** 4 Subaroups

	Patients, n (%)	Medications, n (%)
Analgesics-N02	110 (34.1)	123 (14.6)
Antibacterials-J01	67 (20.7)	101 (12.0)
Antiinflammatory and antirheumatic	drugs-M0193 (28.8)	95 (11.3)
Antacids-A02	68 (21.1)	71 (8.4)
Antiasthmatics-R03	25 (7.7)	64 (7.6)
Antithrombotics-B01	28 (8.7)	29 (3.4)
Systemic corticosteroids-H02	26 (8.0)	27 (3.2)
Cardiac therapy-C01	19 (5.9)	26 (3.1)
Diuretics-C03	21 (6.5)	21 (2.5)
Psycholeptics-N05	21 (6.5)	21 (2.5)
Antianemics-B03	16 (5.0)	20 (2.4)
Mineral supplements-A12	12 (3.7)	18 (2.1)
Nasal preparations-R01	8 (2.5)	16 (1.9)
Ophthalmologicals-S01	8 (2.5)	15 (1.8)
Urologicals-G04	7 (2.2)	13 (1.5)
Laxatives-A06	9 (2.8)	12 (1.4)
Vitamins-A11	8 (2.5)	12 (1.4)
Adrenergic beta-blockers-C07	12 (3.7)	12 (1.4)
Muscle relaxants-M03	11 (3.4)	12 (1.4)
Antidiabetics-A10	9 (2.8)	10 (1.2)
Vasoprotectives-C05	10 (3.1)	10 (1.2)
Renin-angiotensin system-C09	10 (3.1)	10 (1.2)
Other	97 (30.0)	106 (12.6)
Total	323 (100)	844 (100)

The percentage of patients with IP who were referred from the emergency department was higher in our study than in an earlier report that analyzed public specialized care.⁹ This difference may have resulted from structural and geographical characteristics (continued care not provided by some PCC, and proximity of the reference hospital) found by two studies in our region^{1,2} to be associated with a greater prevalence of IP.

Our study revealed possible discrepancies between prescribing practices for 11 different antiinflammatory drugs (e.g., rofecoxib and dexketoprofen) and the unavailability of these drugs in the hospital formulary. This suggests that some physicians may use a limited number of medications for inpatients, while prescribing different medications for outpatients and patients seen in the emergency department.¹⁸ Of note was the finding that systemic corticosteroids were prescribed for 50% of the patients diagnosed as having COPD, and that antibiotics not considered to be the first choice in primary care (ciprofloxacin, cefuroximeaxetil and clarithromycin) were prescribed for 19.2% of the patients diagnosed as having respiratory superinfection.

TABLE **Evaluation of Induced Prescriptions by Quality of Prescription According to Criteria Used in Primary Care**

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Indicators F	Objetive in Primary Care (%)	PI (%)
% Intrinsic pharmacological value >90%	92.4	
% Generic medication >8%	10.3*	
% Little-used medications	<2%	3.01
% Compliance with CENM** recommendations	<0.2%	1.43
% Diuretics + ABB [†] /total antihypertensives	>40%	63
% Dihydropyridines/total antihypertensives	<12%	9.3
% Recommended medications/total antihypertensives	s >70%	27.7
% Proton pump inhibitors/total antacids	<60%	48.6
% Recommended medications/total antacids	>90%	94.3
% Penicillins/total antibiotics	>60%	47.3
% Systemic quinolones/total antibiotics	<5%	14.8
% Recommended medications/total antibiotics	>80%	56.7
% Recommended medications/total lipid reducing ag	ents >70%	50
% Recommended medications/total asthma-COPD	>90%	90.6
% Recommended medications/total antidepressants	>75	75
% Recommended medications/total anxiolytics-hypro	otics >85	82.3
% Piroxicam + tenoxicam/total antiinflammatory drug	gs <10%	3.3
% Recommended medications/total antiinflammatory drugs	>70%	70
% Recommended medications/total oral antidiabetics	s >80%	100

*According to the INN

**Comité Evaluación Nuevos Medicamentos (New Drug Evaluation Committee)

[†]Adrenergic beta-blockers.

What is Known About the Subject

• A large proportion of induced prescriptions originate in other levels of care.

Key points

- Information is limited on primary care physician's level of agreement with induced prescriptions.
- Information is limited on the quality of induced prescription, measured as intrinsic value of the drug.

What This Study Contributes

- We report the percentage of patients who received induced prescriptions.
- We report data on the reasons for disagreement by the family physician with induced prescriptions.
- We report data on the quality of induced prescriptions as measured according to indicators used in primary care.

Our analysis of the patient characteristics and the appropriateness of prescriptions is limited, as more sophisticated studies are needed to compile detailed data for other clinical variables in the patients. Nevertheless, our study does make it possible to identify the source of referrals, the health problems that led patients to seek medical care (the distribution of medical problems was similar to that in an earlier study¹⁰), and the treatments that were recommended. We thus consider our information to be useful for setting priorities for future research aimed at enhancing treatment for the most prevalent health problems in our setting. The proportion of patients for whom little or no information was provided about the diagnosis or treatment was similar to that in other studies, which reported figures of 13% and 17% for IP originating from hospital physicians.4,9 We agree with those who consider that all requests for prescriptions from hospital physicians should be accompanied by a minimum amount of information about the patient's medical problem and course of treatment, and with those who feel that the patients should not be relied on as a means of communication.¹⁹

In the present study 30% of the physicians who were invited to participate declined to take part, therefore we cannot assure that our sample was completely representative of all primary care physicians. We believe this may have affected mainly the data for physicians' opinions on the compliance of the IP with good prescribing criteria. Nevertheless, the rate of lack of agreement we observed was similar to that of other studies, which reported figures of 13.7% and 24.9%.^{1,2} In our study the main areas of disagreement were the choice of drug and the need for prescription medication. An earlier study found a similar percentage rate of disagreement over the choice of medication (8.4%), and a smaller percentage of primary care physicians who felt no prescription was warranted (2.6%); however, this study included IP from other sources not considered in the present study.³ The lack of consensus is a challenge for family physicians who may wish to manage and change induced prescribing practices they consider inappropriate or undesirable.^{20,21}

Analyses of IP according to standards for prescription quality are limited, as thus far IP has been studied only for brief periods of time, and the indicators available were designed specifically to analyze prescribing practices in primary care. Discrepancies between IP and quality standards for primary care may reflect a lack of knowledge, on the part of hospital physicians, of the quality criteria for prescribing practices in primary care. In any case the gap is evidence of the need for greater coordination and communication between different levels of health care.

Joint efforts between primary care and hospital physicians to develop clinical practice guidelines and formularies, and to plan shared continuing education activities, may help close the gap between prescribing practices at different levels of health care.^{19,22,23}

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COMMENTARY

Shared Responsibility for Prescribing: Who Should Oversee Prescriptions Ordered by Specialists at the Reference Hospital?

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Induced prescriptions requested by specialists at reference hospitals have been a well known phenomenon for years in most European Community countries. In 1991 induced prescription was defined as "any prescription generated by another physician or requested by the patient, which the general practitioner agrees to write although he or she does not agree with the diagnosis or therapeutic indication; in the case of [prescriptions requested by] specialist physicians, [it is understood that] the general practitioner did not schedule the appointment with the patient."¹ Several Spanish studies have tried to quantify and evaluate prescriptions induced by hospital physicians that are written by primary care physicians. Induced prescriptions have been estimated to account for 11.6% to 35.8%²⁻⁵ of all prescriptions written by family doctors. However, the considerable variability in the methods used in published studies makes their results difficult to compare, although all studies reveal a situation that has arisen because of the

Key Points

- Spanish studies have estimated induced prescriptions to account for 11.6% to 35.8% of all prescriptions written by family doctors.
- Although a small percentage of induced prescriptions (5%-14%) give rise to dissatisfaction on the part of family physicians, these figures are not high enough to dispute the importance of centralized prescribing by family physicians.
- The joint preparation by hospital and family physicians of guidelines for the use of medications, and good communication between primary care and hospital physicians, can improve the situation.

central role of the primary care physician as the agent who writes the patient's prescriptions in order to ensure continuity of care.

Evidently, prescriptions generated at a different level of care can involve high costs for the family physician both in terms of resources (time needed to see the patient and write the prescription) and in terms of emotional wear, especially when the primary care physician does not agree with the prescribed treatment, with the need for treatment, or when he or she feels that the information provided by the specialist is insufficient to ensure adequate follow-up of the patient.

In this connection the study by Fernández Liz and colleagues centers on induced prescriptions requested by reference hospital physicians, and provides results in three areas that deserve attention:

1. A relatively low level of disagreement between the family physician and the hospital physician over the treatment prescribed (total disagreement =5%, partial disagreement =14%), and a high percentage of cases (63%) in which the family physician agreed completely with the prescribed medication. It should be noted that the authors provided no information on the degree of agreement for the remaining 18% of the prescriptions.

2. Perception by participating family physicians of the quality of information provided by the specialist for follow-up of the patient. The diagnosis was not indicated for 11.2% of the patients, and the duration of treatment was not specified for 45% (seen mainly in outpatient clinics). 3. Identification of differences between the active principles prescribed for hospital inpatients (only those included in the hospital formulary) and those prescribed for outpatients.

It should be born in mind that as in earlier studies, the results are not easy to extrapolate or generalize because of the methodological characteristics of the study and because of the characteristics of the participating health centers (proximity to a third-level reference hospital, urban health centers, lack of continued care services at some centers). Moreover, 30% of the family physicians at the health centers included in the study declined to participate. However, no details are given on their reasons for refusing, their main characteristics, or the possible differences between this subgroup and the population of primary care physicians at participating centers as a whole.

Nevertheless, the results of the study, although they cannot be generalized, make it possible to quantify a feature that should be of concern not only to family physicians but also to health administrators.

In view of these data, it is evident that not all induced prescriptions are undesirable, although a small percentage (5%-14%) give rise to considerable dissatisfaction on the part of family physicians and their patients. However, these figures are not high enough to dispute the importance of centralized prescribing by family physicians as a measure aimed at maintaining continuity of care, although they do reveal the need for mechanisms that would make it possible for specialists at reference hospitals to share responsibility for the prescriptions they generate. This evidently requires the joint preparation of hospital guidelines for the use of medications for outpatients in collaboration with family physicians at centers in the hospital's catchment area, and common policies to ensure the quality of prescribing practices. Also needed are measures to foment the use of new information and communication technologies at the primary care-hospital interface, the use of a unique, machine-readable medical record for each patient, and the establishment of electronic prescriptions on a national level.

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