

# Patient's Utilization of Primary Care: A Profile of Clinical and Administrative Reasons for Visits in Israel

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## Abstract

**Background:** Data on patients' utilization of health services in primary care is relevant to planning healthcare. Data may be collected by numerous methods, but obtaining a true picture of content of care has practical difficulties. **Objectives:** To describe patient's reasons for visits to primary care physicians (PCPs) as presented by the patient; and to examine the effect of patient-, doctor- and clinic-related variables on the reasons for the visit. **Methods:** Visits to PCPs were observed by peer doctors during 2014, at primary care clinics in Israel. Data were collected on characteristics of physicians, patients, clinics, type of visit, and reasons for visit. **Results:** Eleven physicians from 7 clinics participated in the study. Data were gathered from 327 visits. Patients visited for a wide variety of reasons. The most common acute complaints were upper respiratory symptoms, gastrointestinal, skin symptoms, and back and neck problems. The most common chronic complaints were hypertension and diabetes. Patients presented with administrative requests in 36% of visits; 15% were for solely administrative issues. A total of 26.6% of visits included requests for blood tests or discussion of tests. Patients initiated preventive medicine issues in 5% of visits. Visits for chronic problems were directly correlated with patient age and the extent of acquaintance with the physician. Gender-associated differences were also found: women were more likely to visit for a new medical problem than men, while men were more likely to visit for known or chronic problems. **Conclusions:** Patients visit their PCP for a wide variety of reasons, often during the same visit. Patients refer for administrative requests in about a third of visits. They initiate preventive care infrequently (1 out of 20 visits). To further characterize patient utilization of primary care, a broader study needs to be performed.

## Keywords

general practice, primary care, family medicine, reason for visit, consultation

## Introduction

Characterizing the medical needs of patients in a given population is necessary for analyzing and planning health care.<sup>1-3</sup> Primary care is recognized and endorsed as a basis of public health.<sup>4</sup> Therefore, it is important to collate current comprehensive data on morbidity and patient's utilization of health services in primary care. This information can help identify systemic problems, improve efficiency, and encourage proper distribution of resources to primary care.<sup>1-3</sup>

Several studies have dealt with morbidity in primary care. Some derive from national data bases, such as the United States,<sup>5,6</sup> the United Kingdom,<sup>7,8</sup> and New Zealand.<sup>9</sup> Some derive from local research networks of primary care physicians (PCPs).<sup>10-13</sup> Over the past decade, studies have

been conducted to characterize reasons for visits in specific populations and settings.<sup>14-16</sup> It is generally agreed that research on content of activity in primary care should be expanded. Studies collecting data on regional morbidity are also important, as deviations from national figures could highlight local problems or discrepancies requiring unique interventions.<sup>1,10</sup>

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A number of factors complicate the collection of valid information from primary care clinics.<sup>3</sup> One approach is to gather information from computerized systems, such as examining distribution of diagnoses using an international code, for example, the International Classification of Diseases, Ninth Revision (ICD-9). However, the quality of the pooled information may not be uniform, for a number of reasons, especially in primary care.

Some visits may evade a precise diagnosis, or PCP may encounter various stages of the illness, which may be difficult to classify by the code.<sup>3</sup> Another approach is to document the patient's main symptoms or complaints. This may provide only partial information about the illness without sufficiently clarifying the cause of the complaint or the diagnosis. Furthermore, the same complaint might be classified differently by different physicians.<sup>3</sup> A Canadian study found that in many cases, the main reason for visiting the physicians, according to the coded diagnosis (or computerized data) differed from the main reason for the visit as perceived and defined by the physician.<sup>13</sup>

In order to bridge these gaps, methods for categorizing the scope of activity in primary care have been developed, such as the International Classification for Primary Care (ICPC).<sup>3,17</sup> An additional method for collecting data in morbidity surveys is the Reason for Visit Classification (RVC), a coding method that includes 2 parts: types of visit (symptom, illness, preventive medicine, treatment, injuries, side effects, test results, administrative issues, etc) and key words (a cumulative list based on patients' own words).<sup>18</sup>

In Israel, a study conducted in 1998, which included a sample of 677 PCPs from the 4 health maintenance organizations (HMOs), examined the main areas addressed in the content of primary care compared with those in 9 European countries, as reported by the doctors in a self-filled questionnaire, including preventive medicine, health education (smoking, alcohol consumption, diet), the PCP's handling of pediatrics, surgical, gynecological, and psychosocial problems, and PCP satisfaction with work. Physicians in the study were also asked to what degree they thought the patients perceived them as the first consultant on various issues, including acute problems in general (without separating individual reasons). Regarding preventive medicine practice, the study found that Israeli doctors conducted more manual breast examinations and lipid screening than most European counterparts, but engaged less often in health education about diet, smoking, and alcohol consumption than their European peers. The study did not examine the patient's reasons for visits.<sup>19</sup>

The present study was designed to examine utilization of primary care in Israel and the association of variables relating to the physician, the patient, and the characteristics of the clinic, with the reasons for visits. We chose to focus on the patients' perspective, by examining the reasons for adult visits to PCP in Israel as presented by the patient, in order to

profile the patient's requirements as defined by the patients themselves.

In order to overcome the problems that arise by profiling the visit by the diagnosis entered in the electronic medical record, on one hand; or the bias inherent to self-report by many different PCP's, on the other hand, the data were collected and recorded by direct real-time observation by peer physicians.

## Methods

### Study Design and Participants

We conducted an analytical observational survey. Observations were conducted by a peer physician who was present during the visit between the patient and her PCP. The observing doctors were 6 family medicine residents participating as researchers in the study. All of them had clinical experience in primary care clinics. They were collectively instructed by the researchers on the study objectives and method. A convenience sample of seven clinics was chosen, belonging to "Clalit Health Services" (Haifa and Western Galilee District) and "Maccabi Healthcare Services" (Northern District), the largest and second largest, respectively, of the 4 HMOs providing primary care in Israel. Data were collected between August and November 2014 (4 months total). This time frame was chosen according to the observers' schedules and availability. Table 1 provides details pertaining to the background of the sample.

The research population included all patients older than 18 years who visited a PCP in the sampled clinics (PCPs in this study are defined as board-certified PCPs, senior family medicine residents, general practitioners, or other specialists [such as internists] working as primary care physicians). We excluded visits of patients under age 18 because most PCP in urban clinics provide care mainly for adults, and because of ethical restrictions on obtaining informed consent from minors. We also excluded any visit where the patient was not physically present (ie, visits attended by a representative of the patient such as a family member or caretaker, queries by phone or e-mail, requests for services in the patient's absence, referral to the physician online or via the administrative staff, etc).

The observations were carried out on all the patients who visited the participating clinics on the day of the observations, who gave verbal informed consent to their PCP, and who met the inclusion and exclusion criteria.

The observers recorded the data anonymously on a structured chart questionnaire. The questionnaire was based on a combination of the "reason for visit" classification<sup>18</sup> and a list of clinical problems based on diagnostic clusters and ICD-9 codes<sup>1,11</sup> adapted specifically to primary care in Israel. Data on the reason for visit were collected in 6 categories: A—type of visit (new complaint, chronic problem

**Table 1.** Characteristics of Patient Visits (N = 327).

Variable/Value	n	%
Age, y, mean $\pm$ SD (range)	18.8 $\pm$ 50 (18-95)	
Gender		
Male	153	47
Female	174	53
Religion/Affiliation		
Jewish	311	95
Arab	8	2
Unknown	8	2
Patient registered with physicians		
Registered with the physicians	268	82
Not registered with the physicians	58	18
Patient registered with the clinic		
Registered with the clinic	301	92
Not registered with the clinic	21	6
More than one patient discussed		
Yes	34	10
No	293	
Visit days		
Sunday-Thursday	316	97
Friday	11	3
Extent of doctor-patient acquaintance		
Well-known	141	43
Medium and/or low extent of acquaintance as perceived by the patient	186	57
Clinic characteristic (n = 7)		
Population, mean $\pm$ SD (range)	3143.75 $\pm$ 482 (450-4500)	
No. of family physicians, mean $\pm$ SD (range)	3.5 $\pm$ 0.65 (1-5)	
Urban <sup>a</sup>	5	71.43
Rural <sup>a</sup>	2	28.57
Family physician's characteristic (n = 11)		
Age, y, mean $\pm$ SD (range)	47.5 $\pm$ 2.2 (41-61)	
Gender		
Male	5	45.45
Female	6	54.55
Experience, y, mean $\pm$ SD (range)	15.63 $\pm$ 2.02 (7-30)	

<sup>a</sup>The main difference between urban and rural clinics in Israel is that urban clinics provide services to thousands of patients, while rural clinics generally provide services to a single settlement—with a few hundred patients who are usually part of a close-knit community.

(previously known to the physician), administrative purposes, acquaintance visit with a new patient, preventive medicine/tests, visit before or after surgical procedure); B—symptoms (fever, fatigue, weight loss, etc); C—existing medical conditions (hypertension, diabetes, dyslipidemia, hypothyroidism, ischemic heart disease, atrial fibrillation, chronic obstructive pulmonary disease, asthma, anxiety/depression, congestive heart failure, malignancy, other); D—tests and preventive medicine (requests or discussion of blood tests or other tests, discussion of risk factors request or discussion of screening test for colorectal cancer, breast cancer or osteoporosis, request for contraception, smoking cessation); E—injuries or adverse effects (blunt injury, laceration, foreign object, violence, etc); F—administrative

issues (request for prescription, sick leave, referral to tests requested by a third party, request for referral to a specialist, health certificate, summary of medical condition form, questionnaire for driving or firearm license, certificate for gym, certificate for labor accident, other). The observer could tick more than one option in each category.

The questionnaire was validated by a pilot survey conducted by the researchers. The validation process was composed of 2 parts. First, the questionnaire was reviewed by a group of about 15 peers (family medicine residents and board-certified family physicians (BCFP) participating in a mandatory research course in a medical education program for family medicine residents at the Technion. The group's comments were used to clarify and refine the questionnaire. At the next stage, the researchers and their peers viewed randomly taped videos of PCP—patient visits (taped by one of the researchers—Dr Alpern, after obtaining consent of the patient). They filled out the questionnaire according to the taped visits, then, they discussed and further amended as necessary.

Each observed PCP was assigned a code to facilitate crosschecking the variables on the physician's characteristics with the type of patients she or he received. Data were gathered on the characteristics of the physician, the patient and the clinic, and the reasons for the patient's visit. One of the researchers was assigned to be the "study consultant" who makes the final decision if the observer had doubts about the classification of the reason for visit.

## Procedure

Prior to commencing the study, authorization was obtained from the Clalit Health Services Institutional Review Board (IRB) No. COM-0078-13, and from Maccabi Healthcare Services IRB No. 2013064.

## Data Analysis

Data were processed using SPSS (version 22) software. Distributions, averages, and standard deviations of the research variables were calculated. Pearson correlations were calculated to examine the connections between the study variables. The comparison between groups was carried out by means of suitable statistical tests: unpaired Student *t* tests for continuous variables and  $\chi^2$  tests for discrete dependent variables. The association between reasons of visits and the independent variables is presented by odds ratios (ORs) with 95% confidence intervals.

## Results

### Description of sample

Table 1 summarizes characteristics of the observed visits, clinics, and PCPs. Eleven physicians were observed, 5 male

and 6 female. The average age of the physicians was 47.5 years (SD = 2.2, range 41-61) with an average of 15.63 years' experience (SD = 2.02, range 7-30). Seven clinics participated in the study. The majority of visits took place in urban clinics (71.43%). The clinics serve mean population of 3143.75 patients (SD = 482, range 450-4500). The information was gathered from a total of 327 observed visits.

Each observer documented an average of 55 visits (range 35-70). Forty visits (10.7%) were excluded from the study (because the visitor was not the index patient or was younger than 18 years), as were 6 (1.8%) patients who refused to participate. A total of 172 patients (52.1%) were from Clalit Health Services (Haifa and Western Galilee District) and 155 patients (47.9) were from Maccabi Healthcare Services (Northern District). More than 1 patient was discussed in 10% of the visits. The official time allocated for a visit in the HMO in Israel is 10 minutes. We did not record the actual length of the visit.

### Reasons for the Visits to Primary Care Physicians

**Type of Visit (Questionnaire Category A).** In 177 (54%) visits, a medical topic was presented for the first time; 96 (29%) visits dealt with continuing problems, already presented to the PCP in previous visits; 118 (36%) dealt with administrative issues (15% of all visits were for solely administrative purposes).

**Reasons for Visits.** We classified the visits according to symptoms presented by the patient (questionnaire category B) and by chronic medical conditions (questionnaire category C). Table 2 presents symptoms presented by patients. Upper respiratory tract infection symptoms were most prevalent, followed by gastrointestinal tract and skin symptoms.

Table 3 presents visits due to chronic diseases, of which hypertension and diabetes were the most frequent. There were a negligible percentage of complaints regarding injuries, falls, and accidents, and none regarding violence.

**Medical Tests and Preventive Medicine (Questionnaire Category D).** During 87 visits (26.6%) patients requested blood tests or requested to discuss results. Patients initiated preventive medicine issues (ie, discussion of risk factors, smoking, prophylaxis of osteoporosis, screening for breast and colon cancer, and vaccination) in only 16 visits (5%).

**Administrative Issues (Questionnaire Category F).** Seventy (21%) visits included requests for prescriptions, 17 (5%) for sick leaves, and 14 (4%) for other certificates or documentation.

### Analysis

The most common reasons for visits in association with patient characteristics are presented in Table 4. More than

**Table 2.** Symptoms Presented by Patient During Observed Visits<sup>a</sup> (N = 327).

Symptoms	n	% of Visits	Differences Between Patient Gender, t (df)
Upper respiratory tract <sup>b</sup>	50	15	-1.28 (325)
Gastrointestinal tract <sup>c</sup>	36	11	1.14 (210.66)***
Skin problems	26	8	0.75 (325)
Back and neck problems	29	8	1.95 (268.6)*
Abdominal pain	20	6	-0.82 (325)
Orthopedic complaints pertaining to limbs	20	6	0.21 (325)
Urinary symptoms (urgency, frequency, burning)	16	5	0.26 (325)
Headache	13	4	-3.07 (211.9)***
Weakness	12	4	0.23 (325)
Fever	12	4	-2.26 (257.91)***
Fatigue	11	3	0.52 (325)
Earache	9	3	0.53 (325)
Stress/Anxiety	8	2	-1.29 (294.13)
Chest pain	8	2	0.9 (325)
Gynecological/urological problems	5	2	0.59 (325)
Eye problems	5	2	-1.21 (325)
Vertigo	3	1	-0.47 (325)
Tingling, numbness, and other sensory complaints	3	1	0.13 (325)

<sup>a</sup>There may be more than one reason for the visit.

<sup>b</sup>Rhinitis, sore throat, cough.

<sup>c</sup>Nausea, vomiting, diarrhea, constipation, dyspepsia.

\*P < .05, \*\*P < .01, \*\*\*P < .001.

**Table 3.** Visits due to Chronic Illnesses (N = 327).

Chronic Diseases	n	% of Visits
Hypertension	24	7
Diabetes	22	7
Dyslipidemia	14	4
Hypothyroidism	9	3
Ischemic heart disease	4	3
Depression	8	2
Asthma	6	2
Osteoporosis	6	2
Atrial fibrillation	4	1
Congestive heart failure	4	1
Malignancy	3	1
Chronic obstructive pulmonary disease	3	1

<sup>a</sup>There may be more than one reason for the visit.

one issue was discussed in 64% of the visits, with 2.3 (SD = 1.42) issues per visit on average and a maximum of 8. Women and patients older than 50 years were more likely to raise 5 to 8 issues per visit than men or younger patients (17.22% women vs 13.37% men; 24.54% >50 years vs 12.27% 18-50 years).

**Table 4.** The Most Common Reasons for Visits in Association With Patient Characteristics (N = 327).

	The Extent of Acquaintance With the Physician	Patient's Gender—Male	Patient's Gender—Female	Patient's Age 50+ Years	Patient's Age 30-50 Years	Patient's Age 18-30 Years
1	URT	Back and neck complaints	URT	Hypertension	Back and neck complaints	URT
2	GIT complaints	Diabetes	GIT complaints	Diabetes	URT	GIT complaints
3	Abdominal pain	Skin problems	Skin problems	Skin problems	Skin problems	Skin problems
4	Skin problems	Hypertension	Fever	URT	Weakness	Headache
5	Back and neck complaints	Dyslipidemia	Abdominal pain	GIT complaints	Fever	Orthopedic complaints pertaining to limbs
6	Urological/gynecological problems	Abdominal pain	Hypertension	Orthopedic complaints pertaining to limbs	GIT complaints	Back and neck complaints
7	Diabetes	Urinary symptoms	Hypothyroidism	Back and neck complaints	Headache	Weakness
8	Hypertension	Ischemic heart disease	Urinary symptoms (urgency, frequency, burning)	Ischemic heart disease	Fatigue	Skin problems
9	Stress/Anxiety	URT	Stress/Anxiety	Dyslipidemia	Chest pain	Fatigue
10	Depression	Fatigue	Headache	Urinary symptoms (urgency, frequency, burning)	limb pain	Eye problems

Abbreviations: URT, upper respiratory tract complaints (rhinitis, sore throat, cough); GIT, gastrointestinal tract complaints (nausea, vomiting, diarrhea, constipation, dyspepsia).

Symptoms presented by patients differed significantly according to gender ( $P < .05$ ), extent of acquaintance with the physician ( $P < .01$ ), and whether the patient was registered with the physician ( $P < .05$ ). We found a significant association between gender and anxiety ( $P < .001$ ), fever ( $P < .001$ ), and gastrointestinal tract complaints ( $P < .05$ ), with women presenting these problems more frequently than men. In addition, there was a significant association between gender and neck and back problems ( $P < .001$ ) and diabetes ( $P < .05$ ), with men presenting these problems more frequently than women. The extent of acquaintance with the physician was positively associated with visits for hypothyroidism ( $r = 0.16$ ,  $P < .001$ ) and chronic obstructive pulmonary disease ( $r = 0.11$ ,  $P < .05$ ). Being registered with the physician was associated with visits for diabetes ( $r = 0.30$ ,  $P < .05$ ), dyslipidemia ( $r = 0.29$ ,  $P < .001$ ), ischemic heart disease ( $r = 0.36$ ,  $P < .001$ ), atrial fibrillation ( $r = 0.18$ ,  $P < .05$ ), and congestive heart failure ( $r = 0.18$ ,  $P < .05$ ).

The rate of complaints regarding chronic diseases was directly correlated with the patient's age. Older age was associated with visits for hypertension ( $r = 0.28$ ,  $P < .001$ ), diabetes ( $r = 0.19$ ,  $P < .001$ ), ischemic heart disease ( $r = 0.19$ ,  $P < .001$ ), atrial fibrillation ( $r = 0.21$ ,  $P < .001$ ), depression ( $r = 0.14$ ,  $P < .05$ ), congestive heart failure ( $r = 0.14$ ,  $P < .001$ ), and dyslipidemia ( $r = 0.19$ ,  $P < .001$ ). Younger age was associated with complaints of weakness ( $r = -0.20$ ,  $P < .05$ ).

We found gender related differences regarding type of visit. Women were more likely to visit for new medical

problems (OR = 1.89,  $P = .004$ ), men for known and/or chronic problems (OR = 1.65,  $P = .049$ ).

We also found differences in reasons for visits pertaining to PCP gender and age. Patients were more likely to visit male PCPs for a new medical problem ( $r = -0.12$ ,  $P < .05$ ) and with symptoms of anxiety ( $r = -0.17$ ,  $P < .01$ ), but more likely to visit female PCPs for treatment of hypertension, diabetes, dyslipidemia, hypothyroidism, and requests for blood tests ( $r = 0.18$ , 0.14, 0.14, 0.11, and 0.12;  $P < .001$ , .001, .001, .05, .05; respectively). Older PCPs received more visits due to dyspnea ( $r = 0.14$ ,  $P < .001$ ), hypertension ( $r = 0.24$ ,  $P < .001$ ), diabetes ( $r = 0.20$ ,  $P < .001$ ), ischemic heart disease ( $r = 0.18$ ,  $P < .001$ ), atrial fibrillation ( $r = 0.11$ ,  $P < .001$ ), depression ( $r = 0.12$ ,  $P < .05$ ), and congestive heart failure ( $r = 0.11$ ,  $P < .05$ ), while younger doctors received more patients with complaints of weakness ( $r = -0.13$ ,  $P < .001$ ).

## Discussion

The aim of the study was to describe the common reasons for visits to PCP as presented by the patients and to examine the effect of the characteristics of the patients, the physicians, and the clinics on their reasons for the visit. Although it is theoretically possible to derive statistical data from health care providers' computer systems, the coded diagnoses may not be compatible with actual reasons for visits. We chose to classify the reasons as presented by the patient, an internationally accepted method,<sup>3,18</sup> reflecting the patients' perspective and their requirements.

## Main Findings

The most common reasons for visits by presenting symptom were upper respiratory symptoms, gastrointestinal symptoms, skin problems, and back and neck problems. The most common reasons for chronic disease management were hypertension and diabetes. However, the content of visits portrayed a wide variety of other symptoms. These findings are supported by previous studies conducted in the United States,<sup>11</sup> the United Kingdom,<sup>1,8</sup> and Canada,<sup>13</sup> which also indicate a very wide distribution of topics.

Also, patients initiate numerous issues during a visit (an average of 3 issues per visit, range 1-8). A similar result was demonstrated in a Canadian study, which found that the average number of topics raised during a typical visit was 2.6, while more than one was discussed in 67.4% of all visits.<sup>13</sup>

The results also reflect a number of aspects that may characterize Israeli patients' current view on the role of their PCP's. One salient finding was that patients raised administrative issues in more than a third of visits. Patients visited their PCP solely for administrative matters in approximately 15% of the visits, and in 11% of them they requested sick leave or other certification or documentation. This complements the 1998 Israeli study,<sup>19</sup> which found that regarding work satisfaction, doctors in Israel ranked fourth highest (out of the 10 participating countries) in being required to do "unnecessary administrative work."

Another important result was that patients initiated preventive medicine issues in only 5% of visits. This also complements the finding in the earlier study in Israel—that Israeli doctors are less inclined to discuss diet, smoking, and alcohol consumption with their patients.<sup>19</sup>

In contrast, patients initiated requests for tests much more frequently. These findings may reflect public perception that a blood test is an efficient screening method for early detection of disease. This is significant because the Israel Task Force for Health Promotion and Preventive Medicine Guidelines do not include "general blood tests" as screening tests, while screening for breast and colon cancer is advocated but underutilized.<sup>20-22</sup>

## Strengths and Limitations

The main strength of the study is collection of data by direct observation of patients' encounters with their physicians. This provides a more accurate and authentic portrayal of patients' needs and reasons for seeking medical consultation, compared to data derived from the medical record. Furthermore, data were collected by peer doctors, minimizing possible bias of self-documentation by the PCPs themselves. While previous studies have recorded problems as presented by the patient and documented after the visit by the PCP,<sup>11,13</sup> and 1 study used research nurses as observers,<sup>10</sup>

our study, to the best of our knowledge, is unique in that doctors directly observed their peers at work.

The study has a number of limitations. It was carried out in only seven clinics in the northern part of Israel and executed over a period of several months which may limit the generalizability of the results. Nearly all of the research subjects were Jewish. Therefore, the results may not be representative of a wider ethnic population or of year-round complaints. Nevertheless, the relatively short time frame does not necessarily induce bias, as medical complaints, especially chronic problems, are seen year-round. It is important to stress that the study did not examine the entire content of the visits, but rather the reasons for which patients initiated the appointment. Therefore, topics raised by physicians are not reflected in the results. Another limitation was data collection by several researchers, which may have resulted in different classifications of similar complaints, although the observers were collectively instructed by the researchers prior to commencing, took part in a pilot study to validate the questionnaire, and a "study consultant" was appointed, in order to lower the interobserver variation. Also, as discussed above, the results on preventive medicine and administrative work were compatible with the study published in Israel nearly 2 decades ago, which strengthens the validity of the findings.

## Implications and Conclusion

The current study outlines reasons for visits to PCP, constituting a milestone for future research. The results reveal patient and doctor gender- and age-related differences but as the numbers are small, further study is necessary in order to examine their significance.

The results also demonstrate a paucity of visits on preventive medicine. Furthermore, Patients require a significant proportion of visit time for administrative issues. Thus, it seems important to allocate more time to preventive medicine and patient education, as well as for dealing with the many topics that patients may raise in the course of a single visit. Furthermore, alternative possibilities for dealing with administrative issues, other than visits to the physician, should be examined. Longitudinal studies with larger groups of participants are needed to create a better understanding of the nature of the clinical and administrative reasons for visits in primary care.

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