Patient, Resident Physician, and Visit Factors Associated with Documentation of Sexual History in the Outpatient Setting

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BACKGROUND: Providers need an accurate sexual history for appropriate screening and counseling, but data on the patient, visit, and physician factors associated with sexual history-taking are limited.

OBJECTIVES: To assess patient, resident physician, and visit factors associated with documentation of a sexual history at health care maintenance (HCM) visits.

DESIGN: Retrospective cross-sectional chart review.

PARTICIPANTS: Review of all HCM clinic notes ($n=360$) by 26 internal medicine residents from February to August of 2007 at two university-based outpatient clinics.

MEASUREMENTS: Documentation of sexual history and patient, resident, and visit factors were abstracted using structured tools. We employed a generalized estimating equations method to control for correlation between patients within residents. We performed multivariate analysis of the factors significantly associated with the outcome of documentation of at least one component of a sexual history.

KEY RESULTS: Among 360 charts reviewed, 25% documented at least one component of a sexual history with a mean percent by resident of 23% (SD=18%). Factors positively associated with documentation were: concern about sexually transmitted infection (referent: no concern; OR=4.2 [95% CI=1.3–13.2]); genitourinary or abdominal complaint (referent: no complaint; OR=4.3 [2.2–8.5]); performance of other HCM (referent: no HCM performed; OR=3.2 [1.5–7.0]), and birth control use (referent: no birth control; OR=3.0 [1.1, 7.8]). Factors negatively associated with documentation were: age groups 46–55, 56–65, and >65 (referent: 18–25; ORs=0.1, 0.1, and 0.2 [0.0–0.6, 0.0–0.4, and 0.1–0.6]), and no specified marital status (referent: married; OR=0.5 [0.3–0.8]).

CONCLUSIONS: Our findings highlight the need for an emphasis on documentation of a sexual history by internal medicine residents during routine HCM visits, especially in older and asymptomatic patients, to ensure adequate screening and counseling.

KEY WORDS: communication skills; medical education; aging; sexually transmitted disease; ambulatory care.

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BACKGROUND

Providers need an accurate sexual history to appropriately screen patients for sexually transmitted infections (STIs) and counsel them on safer sex, family planning, and sexual dysfunction.¹ In 1996, the United States Preventive Services Task Force (USPSTF) recommended risk reduction counseling, family planning, and contraception for all adolescents and adults.² Since then, national and international guidelines have recommended routine sexual risk assessment to inform STI testing and counseling decisions.^{3,4} The USPSTF, Centers for Disease Control and Prevention (CDC), American Academy of Family Physicians, and American College of Obstetricians and Gynecologists all recommend that the need and frequency of testing for chlamydia, gonorrhea, human immunodeficiency virus (HIV), and syphilis should be based on behavioral and demographic risk factors.⁵ The USPSTF stated that evidence did not support specific ages for initiation or discontinuation of STI screening and did not make specific recommendations for the frequency of sexual history-taking in different age groups. However, the USPSTF recommended clustering assessment of risk factors at “a periodic health examination”⁵, which generally includes a clinical history, risk assessment, and physical exam.⁶ A sexual history is also necessary to assess, counsel, and treat patients for sexual dysfunction and general sexual health. Although there are no established targets for the percent of patients with a documented sexual history or frequency of documentation, it is reasonable for providers to document a full sexual history at initial exams with brief updates at periodic health examinations.

Despite the importance of a sexual history, providers have highly variable frequencies of sexual history-taking. Primary care providers report frequencies of regularly obtaining a sexual history from 10% to 71% of visits.^{7–10} Patient surveys are consistent with the lower end of the range of physician self-report. Only 28% of adults aged 18–64 years who had a routine checkup in the past year reported being asked about STIs.¹¹ Two studies that assessed internal medicine resident sexual history-taking behaviors through chart review or standardized patients reported frequencies similar to those reported by patients.^{2,12}

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Educational interventions have produced only modest improvement in self-reported frequencies of sexual history-taking.^{2,13,14}

Sexual history-taking is a challenging communication subject. Understanding patient and provider variables associated with sexual history documentation can highlight future quality improvement targets. There are limited data on patient, physician, and visit factors that influence sexual history-taking. Self-reported barriers to sexual history-taking include physician time constraints, patient discomfort, patient age, and lack of genital complaints.^{15,16} The impact of physician gender and patient-physician gender concordance remains unclear.^{17,18} To our knowledge, prior studies have not investigated these factors by objective means.

OBJECTIVES

We performed an educational intervention that demonstrated very low frequencies of documenting sexual histories at baseline with a modest improvement after the intervention.² We therefore, sought to better understand the patient, physician, and visit factors that were associated with documentation of a sexual history in the hopes of identifying better strategies to address this quality of care issue.

METHODS

Design

We performed a cross-sectional chart review and multivariate regression analysis of patient, resident, and visit factors associated with documentation of a sexual history by internal medicine residents in outpatient health care maintenance (HCM) visits. This study was approved by the Colorado Multiple Institutional Review Board.

Study Population and Study Setting

The chart review was performed on HCM visits to internal medicine residents at two outpatient clinics at the University of Colorado School of Medicine. We defined a HCM visit either as initial visits to establish care or annual care visits. The clinics were both academic practices that see a diverse population of primarily insured patients. All 29 postgraduate years two and three (PGY-2 and PGY-3) internal medicine residents with continuity clinic at one of the two clinic sites were eligible. Residents were excluded if they were not in clinic during the intervention or for 2 months during the pre- or post-intervention period. PGY-1 residents were excluded because they had not seen patients in the time period under review. Residents were allowed to request specific continuity clinic sites, but were otherwise assigned to a clinic site at the discretion of the residency director. The internal medicine residents were in one of three training tracks: categorical, hospitalist, or primary care. Categorical residents have traditionally chosen further subspecialty training, while primary care and hospitalist residents have generally chosen general medicine careers in outpatient and inpatient internal medicine, respectively. We analyzed 7 months of resident charts from February to August

2007, a time frame chosen based power calculations for the educational intervention.² For this study, only pre-intervention data were used for the analyses.

Measures

Data were extracted from the electronic medical record using a standardized chart extraction tool that included demographic and clinical factors thought to influence documentation of a sexual history ([Appendix A](#)). Resident and patient identifiers were redacted from charts. Resident demographic data (gender, post-graduate year, and training track) were obtained from the residency program.

The primary outcome, documentation of at least one component of a sexual history, was ascertained using a structured chart extraction tool derived from the Sexual History and HIV Counseling with Subscale Designation Checklist, based on CDC recommendations.^{19,20} The extraction tool consisted of 18 components including current and past sexual activity, number of sexual partners, gender of current sexual partner, and history of STIs.² We hypothesized that younger patient age, resident-patient gender concordance, visits for Papanicolaou test, and genitourinary or STI concerns would be associated with a documented sexual history. Resident and patient demographic factors were analyzed as categorical variables (patient age was ordinal in 10-year categories, gender was dichotomous, and marital status was in six categories). The following clinical factors were assessed because they require a sexual history either for diagnosis of the problem or for assessment of need for STI testing: concern about a STI, contraceptive use, genitourinary or abdominal complaint, male on treatment for erectile dysfunction, female who received Papanicolaou testing, and male who received a prostate exam. To account for competing demands for time during a visit, we included the number of active problems addressed.^{15,16} The following factors were chosen as previously unexplored potential clinical barriers to taking a sexual history and analyzed as dichotomous variables: the performance of HCM during the visit as defined in the chart extraction tool (i.e., cardiovascular risk assessment, vaccinations, colorectal cancer screening, cervical cancer screening), mental illness, chronic pain, treatment with chronic narcotics, dementia, and physical restriction. Sexual orientation and HIV status were not included as potential factors as the chart extraction tool considers these components of the sexual history if discussed in the visit note (but not in past medical history).

Statistical Analysis

Data are presented as percent of whole unless specified otherwise. Patients were nested within residents. Therefore, we employed a generalized estimating equation (GEE)²¹ method with binomial distribution to control for correlation between patients within the same resident. We used this method to detect differences in documentation of sexual history by demographic variables, or by patients' specific symptoms, conditions, and treatments. Further, a multivariate analysis was performed to account for the effects of all significant predictor variables from the univariate analysis. Factors with a

p -value<0.05 were included in the multivariate model. Odds ratios [OR] and their 95% confidence intervals [CI] were generated. All statistical analyses were performed using SAS® release 9.2 (SAS Institute Inc., Cary, NC). A two-sided p -value<0.05 was considered statistically significant.

RESULTS

In total, 360 charts from 26 residents were reviewed with a mean of 15 charts (range 8–29) per resident. Charts from three of the 29 PGY-2 and PGY-3 residents were excluded from the analysis because of absence during the intervention or chart review period. The mean age of patients was 51 (SD 16). Seventy-eight percent of female patients were seen by female residents, and 51% of male patients were seen by male residents (i.e., gender concordance). There were 10 female and 16 male residents. Fourteen residents were in their PGY-2 year and 12 in their PGY-3 year, and they represented 27% of the combined PGY-2 and PGY-3 classes. Three, seven, and 16 residents were in the primary care, hospitalist, and categorical training tracks, respectively. The mean number of problems addressed during the visit was four (SD 2).

One quarter of the charts had a documented sexual history, with a mean percent by resident of 23% (SD 18%).² Patient and resident characteristics by number of charts and documentation of any component of a sexual history are reported in Table 1. Documentation of at least one component of the sexual history was less likely with increasing patient age (p <0.05 for all age groups over 45 years old compared with patients 18–25 years old). Documentation was more likely with patients noted to have a life partner (p =0.05) compared to patients who were married

and among patients seen by female residents (p =0.03). Further, gender concordance was not significantly associated (p =0.07) with documentation of a sexual history.

We also assessed specific symptoms, conditions, or treatments that could affect sexual history-taking practices (Table 2). Figure 1 illustrates the association between a sexual history and specific patient concerns, diagnoses, or treatments. In univariate analysis, documentation of at least one component of a sexual history was more likely with the following patient concerns, diagnoses, or treatments: performance of HCM during the visit (p =0.02), a genitourinary or abdominal complaint (p <0.01), patient concern about a STI (p <0.01), and contraceptive use (p <0.01). Documentation was less likely in visits with the performance of a prostate exam (p <0.01). Performance of a Papanicolaou test was not associated with documentation but was included in the multivariate analysis because of the importance of performing a sexual history with Papanicolaou testing (p =0.09).

After adjusting for multiple charts by individual residents in GEE models, documentation was associated with the performance of HCM during the visit, the presence of a genitourinary or abdominal complaint, a STI concern, and birth control use (Table 3). Factors that were associated with no documentation of a sexual history were patient age greater than 45 years compared with those less than 25 years and the lack of documentation of the patient's marital status compared with those documented as married. The performance of Papanicolaou testing was not associated with documentation of a sexual history. Since cervical cancer screening was included in the performance of the HCM variable, the multivariate analysis was repeated without the HCM variable without any change in the results.

DISCUSSION

In two resident clinics in a large urban area, the strongest demographic factor associated with a documented sexual history was patient age, with increasing age being inversely related to a

Table 1. Patient and Resident Characteristics and Observed Frequency of Documented Sexual History

Patient characteristics	Category	Number (%) charts in category N=360	Number (%) charts with sexual history within category
Age*	18–25 years	23 (6)	16 (70)
	26–35 years	50 (14)	23 (46)
	36–45 years	60 (17)	19 (32)
	46–55 years	79 (22)	13 (16)
	56–65 years	72 (20)	8 (11)
	>65 years	76 (21)	12 (16)
Gender	Female	216 (60)	63 (29)
	Male	144 (40)	28 (19)
Marital status*	Married	52 (14)	20 (38)
	Single	43 (12)	19 (44)
	Divorced / separated	10 (3)	2 (20)
	Widowed	10 (3)	2 (20)
	Life partner	13 (4)	7 (54)
	Not specified	232 (64)	41 (18)
Resident characteristics, n=26			
Gender*	Female	139 (39)	51 (37)
	Male	221 (61)	40 (18)
Post-graduate year	2nd year	213 (59)	44 (21)
	3rd year	147 (41)	47 (32)
Training track*	Categorical	248 (69)	64 (26)
	Primary care	38 (11)	14 (37)
	Hospitalist	74 (21)	13 (18)

* p < 0.05

Table 2. Charts with Specific Symptoms, Conditions, and Treatments

Factor	Number of patients with factor (% of applicable charts)*
Sexually transmitted infection concern	16 (4.4)
On birth control	38 (10.6)
Genitourinary or abdominal complaint	56 (15.6)
Men treated for erectile dysfunction	6 (4.2) [†]
Female Papanicolaou exam	48 (22.2) [‡]
Developmental disability	18 (5.0)
Health care maintenance performed	297 (82.5)
Mental illness	127 (35.3)
Chronic pain	88 (24.4)
On chronic narcotics	48 (13.3)
Dementia	7 (1.9)
Physical restriction	19 (5.3)
Male prostate exam	30 (2.1) [†]

*N=360 unless otherwise noted

[†]n=144

[‡]n=216

Figure 1. Factors associated with documentation of any component of a sexual history.

documented sexual history. The lack of documentation of marital status was also associated with absent documented sexual history. Resident gender, gender concordance, or resident post-graduate year was not associated with documentation. Patient STI concern, contraceptive use, genitourinary or abdominal complaints, and the performance of any HCM were all associated with documentation of sexual history. Notably, Papanicolaou testing and prostate exams were not positively associated with documentation of a sexual history.

Consistent with our results that increasing patient age was associated with a decrease in documentation of a sexual history, medical students, and physicians often cite patient age as a barrier to sexual history-taking.^{15,16,22} However, avoiding risk assessment for STIs in older people because of discomfort with the topic area has potential deleterious effects on patient care. Further, older adults are likely to have chronic diseases such as diabetes and hypertension, which often lead to sexual dysfunction. A large nationally representative probability sample of community-dwelling men and women 57 to 85 years showed that while self-reported sexual activity declines with age, the majority of the respondents were sexually active in the past 12 months. Approximately half of the sexually active respondents had a sexual problem, yet only 38% of men and 22% of women reported discussing sex with a physician after the age of 50.²³ Patients in gynecologic studies were more likely to discuss their sexual concerns if prompted by their physicians.²⁴ In addition to concerns about sexual dysfunction, patients over 50 continue to be at risk of new HIV infection and other STIs. According to the CDC, the incidence of new HIV infection diagnosis stayed the same or increased in people age 50 and older from 2005–2008. In

the 50–59 age group, HIV incidence increased from 13.1 to 14.5 per 100,000 people.²⁵ Though a brief update on their sexual history may be sufficient in elderly patients well-known to the provider, all adult patients require a regular sexual history for appropriate screening and treatment of sexual concerns and STIs.

Although the performance of any aspect of HCM was associated with documentation of a sexual history, performance on a Papanicolaou test or a prostate exam was not associated with documentation of a sexual history. Although it is recommended that all adult women age 25 or younger receive annual chlamydia testing, only high-risk women over 25 years require STI screening with Papanicolaou testing.⁵ Physicians need a current sexual history to assess whether women are high-risk. Although, to our knowledge, this study is the first to objectively study documentation of sexual history during preventive visits, other studies have shown that primary care providers are less likely to take a sexual history in asymptomatic patients.^{7,10,16} Our findings are also consistent with a large CDC survey of primary care physicians in five specialties that showed self-reported rates of STI screening far below national guidelines.^{2,26} Educational efforts should focus on the importance of sexual history-taking for asymptomatic individuals. Notably, documentation of a sexual history was often missing even when indicated by the clinical problem, when documentation rates could be expected to be 100%. Of visits that specifically noted STI concerns, 19% had no documentation of a sexual history. Only 55% of charts with an abdominal or genitourinary complaint had any component of a sexual history documented. These findings are consistent with a large multispecialty survey where 21% of physicians reported that they would not take a sexual history

Table 3. The Odds of Having a Documented Sexual History in Health Care Maintenance Visit by Patient, Resident, and Visit Factors using GEE Models

Variable	Category	Unadjusted OR [†] (95% CI)	Adjusted OR [‡] (95% CI)
Patient age	18–25 years	1.0	1.0
	26–35 years	0.4 (0.2, 1.1)	0.4 (0.1, 1.1)
	36–45 years	0.3 (0.1, 0.7)	0.3 (0.1, 1.2)
	46–55 years	0.1 (0.0, 0.4)	0.1 (0.0, 0.6)
	56–65 years	0.1 (0.0, 0.3)	0.1 (0.0, 0.4)
	>65 years	0.1 (0.0, 0.3)	0.2 (0.1, 0.6)
Marital status	Married	1.0	1.0
	Single	1.1 (0.5, 2.5)	0.6 (0.2, 1.5)
	Divorced/ separated	0.4 (0.1, 2.5)	0.5 (0.1, 1.9)
	Life partner	2.7 (1.2, 5.7)	2.3 (0.5, 9.2)
	Not specified	0.5 (0.2, 0.9)	0.5 (0.3, 0.8)
	Widowed	0.3 (0.1, 1.4)	0.4 (0.1, 2.2)
Resident gender	Female	1.0	1.0
	Male	0.4 (0.2, 0.9)	0.5 (0.2, 1.4)
Resident training track	Primary care	1.0	1.0
	Categorical	0.6 (0.2, 1.4)	0.8 (0.4, 1.8)
	Hospitalist	0.4 (0.2, 0.9)	0.4 (0.2, 0.8)
Sexually transmitted infection concern*	Yes	10.6 (4.8, 23.5)	4.2 (1.3, 13.2)
On birth control*	Not applicable	0.5 (0.2, 1.5)	0.3 (0.1, 1.0)
	Yes	6.3 (2.8, 14.3)	3.0 (1.1, 7.8)
	Yes	3.9 (2.0, 7.7)	4.3 (2.2, 8.5)
Genitourinary or abdominal complaint*	Yes	1.7 (0.9, 3.1)	0.9 (0.4, 2.4)
Papanicolaou exam*	Yes	0.1 (0.0, 0.5)	0.2 (0.1, 1.0)
Male prostate exam*	Yes	2.3 (1.1, 4.7)	3.2 (1.5, 7.0)
Health care maintenance performed*			

*Reference is no

[†]In unadjusted analysis, each variable was assessed separately, and repeated charts by residents have been accounted for using the GEE model

[‡]In adjusted analysis, all the variables (i.e., patient age, marital status, health care maintenance, resident gender, genitourinary or abdominal symptoms, sexually transmitted infection concern, birth control, and pelvic or prostate exam) were added simultaneously as covariates

even if they felt it was “relevant to the chief complaint.”¹⁰ Though abdominal and genitourinary complaints do not necessarily have a sexual etiology, at least a brief sexual history is required to complete a differential diagnosis.

Resident-patient gender concordance was not associated with documentation of a sexual history. In one of the few studies to examine the impact of patient-physician gender concordance, primary care physicians reported high levels of discomfort in discussing a sexual history with patients of the opposite gender.¹⁷ In an older study of family physicians that recently completed training in Quebec, physicians reported no gender difference in frequency of taking sexual history or comfort in taking a sexual history.¹⁸ While gender discordance may lead to greater provider discomfort, our results suggest that gender

discordance was not associated with sexual history-taking practices.

Given that sexual history-taking is a sensitive area of history-taking, residents may benefit from both communication skills training around challenging topics and curricula focused on sexual history-taking. A survey of physician attendees of a workshop on erectile dysfunction found that training in communication skills was the strongest predictor of sexual history-taking practices.²⁷ A recent survey of medical students showed that students with less sexual experience also reported less comfort addressing sexual concerns.²⁸ Training in sexual history-taking specifically and communication skills in general may help to overcome physician lack of comfort due to inexperience or other factors.

This study was limited by generalizability and resident sample size. Although the clinics serve a diverse population, the study involved charts from residents at one academic institution. Larger studies in diverse clinical settings could confirm the findings of this study. Our finding that primary care residents were more likely to document a sexual history than hospitalist residents needs to be considered cautiously, because of the small numbers of residents in each training track represented in the sample. Since this is the first study to our knowledge using chart review or other objective means to assess sexual history-taking practices, we cannot compare our results with other studies using the same methodology. However, the knowledge of the resident, patient, and visit factors associated with documentation of a sexual history gained from the resident charts studied does provide a starting point for the development of targeted educational or quality improvement interventions.

The use of chart review as the method of assessing factors associated with sexual history-documentation is a second potential limitation of this study, because physicians may have neglected to document aspects of a patient's history that were discussed in the visit or may have documented issues that were not discussed. Studies investigating the correlation between either direct observation or patient report and chart review have reported a highly variable range—40% to 93% percent—depending on the activity being reviewed. Activities such as documenting a dichotomous answer to the presence of pain have a high correlation, whereas activities such as reporting the effectiveness of the treatment have the lowest correlation.^{29,30} This study may have underestimated the actual sexual history-taking practice of physicians, leading to ascertainment bias. Ascertainment bias could have affected the association among patient, resident, and visit factors in favor of the null hypothesis for individuals without symptoms. Alternatively, it could have strengthened the association between symptoms or STI concerns and sexual history. Despite this limitation, chart review was the appropriate design for this study because it eliminated the risk of the Hawthorne effect in direct observation or overestimation from self-report.^{31–34} The validity of our results are also supported by the consistency of our findings with patient reported frequencies^{11,23} and the findings of an objective assessment of internal medicine resident STI screening skills.¹²

CONCLUSION

Our study highlights low frequencies of documentation of sexual history in older, asymptomatic patients by internal

medicine residents during established care and HCM visits. Future interventions are likely to be more effective if they are targeted to these clinical scenarios. Training in sexual history-taking skills should be aimed at improving screening, diagnosis, and treatment of STIs, family planning, and assessment and treatment of other sexual concerns. In practices that have an electronic medical record, implementation of sexual history templates or prompts to take a sexual history based on chief complaint may improve documentation of sexual history.

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Conflict of Interest: None disclosed.

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APPENDIX A: CHART ABSTRACTION TOOL

Items reviewed		Variable type/options
1.	Number of active problems	#
2.	Number of problems addressed at visit	#
3.	Any genitourinary (M or F) complaint/lower abdominal pain in female? (Include erectile dysfunction)	Yes/no (Y/N)
4.	Patient concern about sexually transmitted infection (STI) or human immunodeficiency virus (HIV)?	Y/N
5.	Carry diagnosis of chronic pain? (low back pain, pelvic pain, abdominal pain, chronic pain syndrome, or other)?	Y/N, specify (from list)
6.	On chronic narcotics (not acute)?	Y/N
7.	Treatment for erectile dysfunction in medication list?	Y/N
8.	Method of birth control—specify type?	OCP or patch/condom/hysterectomy/tubal, vasectomy/Depo-Provera/Nuvaring/not specified
9.	Primary language/language other than English?	Y/N (English speaker)/not Specified
9a.	Who interpreting if not English	If yes, family/friend/interpreter/phone interpreter/not specified
10.	Any physical restrictions/ (i.e., paraplegia, wheelchair, walker, cane)	Paraplegia/wheelchair/walker/cane/not mentioned/no restrictions
11.	Any developmental disability	Y/N
11a.	If so, what?	Moderate/severe (functioning independently or not)
12.	Marital status	Long-term partner/ single/ married/ divorced/ widowed/not specified
13.	Recent death of spouse? (within last year)	Y/not Specified
14.	Recent divorce/break-up? (within last year)	Y/not Specified
15.	Sexual orientation (if mentioned)	Heterosexual/homosexual/bisexual/not mentioned
16.	HIV status (if mentioned)	Y/not specified
17.	Other health care maintenance (HCM) performed? (Y/N)	Y/N
16a:	Which HCM discussed (colon, breast, cervical, immunizations, cardiovascular risk, etc.)	Specify/lipids or blood pressure as cardiovascular risk, colon, breast, cervical, immunizations, DEXA=bone density. Basic metabolic panel (BMP), or chem. 7 or fasting glucose or DM as diabetes screen (not disease); ignore tobacco cessation/eye check
18.	History of prostate cancer?	Y/not mentioned
19.	Diagnosis of dementia?	Y/not mentioned, Alzheimer's, vascular, Parkinsonian
20.	Diagnosis of mental illness? (Depression, bipolar, anxiety, schizoaffective)	Y/not mentioned, depression, bipolar, anxiety, personality disorder, schizophrenia, eating disorder, OCD, schizoaffective disorder, and other
21.	Type of visit (per MA)	See below
22.	Type of visit (per provider)	See below

Possible types of visits: EC (establish care)/new patient visit, annual/physical, follow-up, med refill, check-up and specific complaint