Emergency Department Visits for Nonurgent Conditions: Systematic Literature Review

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Background: A large proportion of all emergency department (ED) visits in the United States are for nonurgent conditions. Use of the ED for nonurgent conditions may lead to excessive healthcare spending, unnecessary testing and treatment, and weaker patient–primary care provider relationships.

Objectives: To understand the factors influencing an individual's decision to visit an ED for a nonurgent condition.

Methods: We conducted a systematic literature review of the US literature. Multiple databases were searched for US studies published after 1990 that assessed factors associated with nonurgent ED use. Based on those results we developed a conceptual framework.

Results: A total of 26 articles met inclusion criteria. No 2 articles used the same exact definition of nonurgent visits. Across the relevant articles, the average fraction of all ED visits that were judged to be nonurgent (whether prospectively at triage or retrospectively following ED evaluation) was 37% (range 8%-62%). Articles were heterogeneous with respect to study design, population, comparison group, and nonurgent definition. The limited evidence suggests that younger age, convenience of the ED compared with alternatives, referral to the ED by a physician, and negative perceptions about alternatives such as primary care providers all play a role in driving nonurgent ED use.

Conclusions: Our structured overview of the literature and conceptual framework can help to inform future research and the development of evidence-based interventions to reduce nonurgent ED use.

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For author information and disclosures, see end of text.

Nonurgent emergency department (ED) visits are typically defined as visits for conditions for which a delay of several hours would not increase the likelihood of an adverse outcome.[1,2] Most studies find that at least 30% of all ED visits in the United States are nonurgent, although select studies such as those using National Hospital Ambulatory Medical Survey data report lower percentages (<10%).[3-8] Visiting the ED instead of another care site (eg, physician's office, retail clinic, urgent care) for a nonurgent condition may lead to excessive healthcare spending and unnecessary testing and treatment, and represent a missed opportunity to promote longitudinal relationships with primary care physicians (PCPs).[4-6,9-12] A recent study projected $4.4 billion in annual savings if nonurgent ED visits were cared for in retail clinics or urgent care centers during the hours these facilities are open.[13] With increasing demand and a shortage of PCPs, nonurgent ED use will likely increase in the near future. Recent predictions suggest that implementation of the Affordable Care Act and resulting expansions of insurance coverage will contribute to even higher levels of ED usage.[14,15]

There is widespread interest in interventions to discourage nonurgent ED visits. A 2006 survey found that 30% of emergency physicians work in hospitals that have implemented practices to discourage nonurgent visits.[16] Interventions by health systems and payers have included patient education on what is appropriate ED use, financial disincentives such as higher copayments for ED visits, and encouragement of PCPs to provide care on evenings and weekends.[17-19] Despite these efforts, nonurgent ED visits have continued to rise.[20] One explanation could be that prior interventions have not adequately addressed the underlying issues that lead patients to visit EDs for nonurgent conditions.[7] Moreover, policies to deter ED use can have negative, unintended consequences. For example, enrollees in high-deductible health plans, who bear a higher share of the costs of an ED visit, are less likely to seek care for a true emergency.[21] Nonurgent ED use has been discussed in the peer-reviewed literature for the last 3 decades.[12] However, no systematic review of nonurgent ED use in the United States has been published to date.

We conducted a systematic review of the literature and developed a conceptual framework to understand why individuals visit the ED for nonurgent conditions. Our goal was to highlight gaps in knowledge, inform future research on this topic,

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Take-Away Points

Articles on nonurgent emergency department (ED) use are heterogeneous with respect to study design, population, comparison group, and nonurgent definition.

- The limited evidence suggests that younger age, convenience of the ED compared with alternatives, referral to the ED by a physician, and negative perceptions about alternatives such as primary care providers all play a role in driving nonurgent ED use.
- Efforts to deter nonurgent ED use can produce unintended consequences that must be considered.
- Future studies would benefit from the use of a robust theoretical framework on what drives nonurgent ED use.

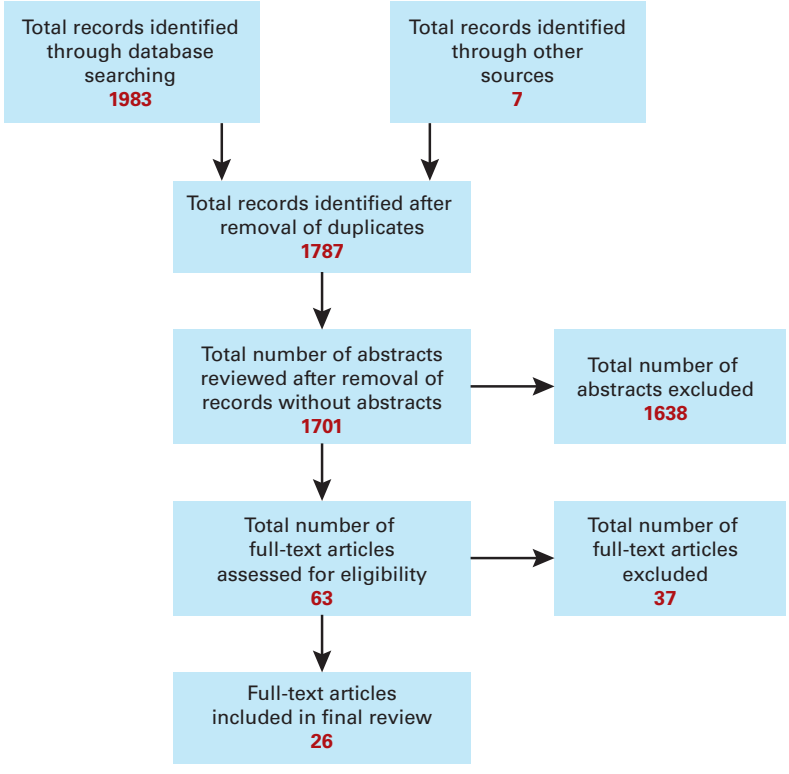
and empirically inform future interventions that attempt to decrease the number of nonurgent ED visits.

METHODS

Study Design

We conducted a systematic review of the peer-reviewed and grey literature to identify factors associated with nonurgent ED use by adults in the United States. Studies outside the United States were excluded because they may not generalize to the unique features of the US healthcare system.[22] A health sciences research librarian worked with the study team to develop our search strategy. We searched multiple databases including Cumulative Index to Nursing and Allied Health (CINAHL), OAIster, ISI Web of Science, New York Academy of Medicine Grey Literature database, PsycINFO, and PubMed. Searches used the following free text and medical subject headings terms: (*emergency service*, *hospital* OR *emergency room*, OR *emergency department*) AND (*nonurgent* OR *nonurgent* OR *unnecessary* OR *inappropriate*). We also used the "related citations" function in PubMed to identify any articles determined to be similar to articles selected for inclusion, and we hand-searched the reference lists of all included articles. The search for abstracts was conducted in January 2011.

Figure 1. Study Selection Flow Diagram



Data Processing

Two reviewers (LU-P and EG) independently examined each abstract returned by the PubMed search, and 1 reviewer (LU-P) reviewed the abstracts returned by the other search engines (fewer than 10% of the total abstracts reviewed). If either or both reviewers determined that an abstract met inclusion criteria, it underwent a more thorough full-text review. One reviewer (LU-P) evaluated the full-text articles on whether they met inclusion criteria and extracted data on all included articles. To meet inclusion criteria, articles had to be published after January 1990, be written in English, and present some quantitative data (including descriptive data) on nonurgent ED use. We excluded dissertations, articles without abstracts, and articles exclusively focused on pediatric or non-US populations. Articles that presented qualitative data only or reviewed existing literature were not formally included in the review, but were used to inform the creation of a conceptual framework.[5,6,22-31]

To facilitate data extraction, we created a standardized data form to collect information from included articles. The information gathered, as available, included study population, sample size, setting, design, comparison group, response rate, definition of a nonurgent visit, independent and dependent variables, key findings, and use of a conceptual framework. A variety of terms were used to describe nonurgent visits including *inappropriate visits*,[32] *avoidable visits*,[16] *nonemergency visits*,[33] and *minor ill-*

Table 1. Design Features and Results of Studies of Nonurgent Visits (n = 6)

Reference	Study Design	Nonurgent Definition	Sample Description and Setting	Sample Size
Brim,[35] 2008	Cross-sectional survey	Determined prospectively at triage (based on vital signs and expectations of procedures and treatments)	Convenience sample of adults presenting during business hours to 1 ED in Washington state	64 ED patients
Butler,[33] 1998	Cross-sectional survey and review of health plan administrative data	Determined retrospectively from review of medical record (based on diagnosis); also used alternate definitions from the literature to test the sensitivity of the logistic regression model	Enrollees of 1 Medicaid HMO in Colorado who had a nonurgent visit to an ED or PCP	581 patients with 1943 visits (outcome of interest was whether a particular nonemergency visit was to the ED or PCP)
Gill,[36] 1996	Cross-sectional survey and medical records review	Determined prospectively at triage (based on ability to wait several hours or more for an evaluation)	Convenience sample of 1 ED in an unspecified location	268 ED patients
Northington,[3] 2005	Cross-sectional survey	Determined prospectively at triage (based on vital signs, responsiveness, level of distress, and expectations of testing)	Convenience sample of adult self-referred patients in 1 ED in North Carolina	279 ED patients
Redstone,[9] 2008	Cross-sectional survey	Determined prospectively at triage (based on symptoms, vital signs, and expectations of resource use)	Convenience sample of adults with an established PCP presenting with a nonurgent condition to 1 ED in Colorado	240 ED patients
Schwartz,[37] 1995	Cross-sectional survey	Not clearly defined: patients with conditions that were not life threatening, such as flu, cold, or sprains	Patients who had a nonurgent visit to either 1 ED in Georgia or to an FPC	52 ED patients and 42 FPC patients

ED indicates emergency department; FPC, family practice clinic; HMO, health maintenance organization; PCP, primary care physician.

ness visits.[34] In this article we chose the most prevalent term: nonurgent visits. The research team elected not to rate the quality of articles because all the studies were observational in nature and the majority did not use multivariate statistics.

RESULTS

Identification of Relevant Articles

The initial search strategy generated 1983 abstracts. An additional 7 abstracts were obtained by hand-searching the reference lists of full-text articles and using the related citations feature in PubMed. From this list, the reviewers identified 63 articles for full-text review, of which 26 satisfied criteria for inclusion (**Figure 1**). The primary reasons for exclusion included lack of quantitative data and an exclusive focus on non-US patients.

Overview of Articles and Definition of Nonurgent Condition

Six studies (23%) described only visits for nonurgent conditions (**Table 1**[3,9,33,35-37]). Of those, 4 articles (16%) described nonurgent visits to the ED and 2 articles (8%) compared nonurgent ED visits with PCP visits for similar conditions.[33,37] The other 20 articles (77%) compared nonurgent ED visits with other types of ED visits (**Table 2**[1,2,12,16,32,34,38-51]), including urgent visits, urgent and emergent visits,[1,47] and all ED visits.[16,34]

No 2 studies used the same exact definition of nonurgent visits. A total of 11 articles (42%) identified nonurgent visits through retrospective review of medical records, 11 (42%) identified nonurgent visits prospectively at triage, and 3 articles (12%) used retrospective patient self-report. (See **eAppendix** at **www.ajmc.com** for additional detail on definitions.) Across the relevant articles, the average fraction of all ED visits that were judged to be nonurgent (whether prospectively at triage or retrospectively following ED evaluation) was 37% (range 8%-62%). Four articles (15%) presented a conceptual framework to guide the study design and interpretation of results. Three articles used the Anderson model of healthcare utilization,[12,33,35] and 1 article used Mechanic's model of illness behavior.[47]

Table 2. Design Features of Studies Comparing Nonurgent ED Visits With Other ED Visits (n = 20)

Reference	Study Design	Nonurgent Definition	% Nonurgent	Sample Description and Setting	Sample Size	Covariates
Baker,[38] 1995	Cross-sectional survey and chart review	Determined prospectively by physician rating at triage (based on whether patients needed to be seen within 24 h)	43%	Adult ambulatory ED patients in a Los Angeles public hospital	1190	None: descriptive statistics only
Bond,[39] 1999	Retrospective chart review	Determined prospectively by nurse at triage (based on whether patient required a physician assessment in under 2 h)	62%	Northern Virginia ED patients with 7 or more visits within 12 mo	122 patients with 1185 visits	None: bivariate only
Campbell,[32] 1998	Retrospective medical record review	Determined retrospectively by medical record review (based on vital signs, admission to the hospital, chief complaint, presence of acute exacerbation of chronic condition, timing of visit)	37%	ED patients with a PCP seen on weekends or evenings	332	None: bivariate only
Coleman,[40] 2002	Cross-sectional survey and review of health plan administrative data	Determined retrospectively by medical record review; compared 4 distinct definitions based on (1) diagnosis at discharge, (2) whether patient was admitted to the hospital, (3) whether patient walked to the ED, and (4) whether patient presented during clinic hours	(1) 38% (2) 55% (3) 43% (4) 47%	Patients enrolled in a Colorado HMO outpatient care management program; program included older patients with multiple chronic illnesses, high utilization history, or PCP referral	104	Age, sex, chronic conditions, comorbidity, functional status, caregiver support, use of skilled home health nursing services, prior ED use
Cunningham,[12] 1995	Cross-sectional survey	Determined retrospectively by patient self-report (based on whether visit resulted in admission, whether the visit was associated with an accident or injury, whether a surgical procedure was performed, whether the patient was referred to the ED, whether the patient arrived by ambulance, and whether the patient reported their condition to be very serious)	40%	Adults across the United States who participated in the National Medical Expenditure Survey	14,000 households with 9461 household-reported ED visits	Health status, insurance coverage, demographic characteristics, socioeconomic status, number of physicians and EDs in county of residence, per capita income
Davis,[41] 2010	Retrospective review of administrative and claims data	Determined retrospectively based on administrative and claims data (based on procedure ordered and *ICD-9* codes)	24% of visits by Medicaid patients and 16% of visits by non-Medicaid patients	Members of the largest insurer in Hawaii who had an ED visit that did not result in a hospitalization	650,000 enrollees	Age, sex, chronic diseases, and having a weekend or weekday visit
Doty,[42] 2005	Cross-sectional survey	Determined retrospectively by patient self-report (based on whether patient reported that the condition could have been treated by a regular physician if one had been available)	23%	Adults across the United States (aged 19-64 y) who responded to the Commonwealth Fund Biennial Health Insurance Survey	4350 adults	Poverty status and insurance coverage
Garcia,[43] 2010	Retrospective review of medical records	Determined retrospectively based on medical record review (based on whether patient should be seen within 2-24 h)	10%	National sample of ED visits by persons under age 64 y (National Hospital Ambulatory Medical Care Survey)	Not described	None: bivariate only
Harris Interactive,[16] 2005	Cross-sectional survey	Determined retrospectively by patient self-report (based on whether visit occurred during business hours and patient could have been treated by a PCP or could have waited 24 h for care)	21%	General public (oversample of recent ED users)	1000 patients who used the ED in the last year	None: bivariate only

(Continued)

Table 2. Design Features of Studies Comparing Nonurgent ED Visits With Other ED Visits (n = 20) *(Continued)*

Reference	Study Design	Nonurgent Definition	% Nonurgent	Sample Description and Setting	Sample Size	Covariates
Gooding,[44] 1996	Retrospective review of medical records	Determined retrospectively by medical record review (based on medical provider classification, patient record form, and whether nonroutine diagnostic procedures were performed	19% (with another 40% potentially nonurgent)	National sample of ED visits by persons under age 65 y (National Hospital Ambulatory Medical Care Survey)	25,509 ED patient records	Age, sex, race, ethnicity, region, urban location, hospital ownership
Han,[45] 2003	Cross-sectional survey and retrospective review of medical records	Determined retrospectively from medical record review (based on complaint, presence of high-risk condition, vital signs, and hospitalization)	73% of patients had at least 1 nonurgent visit in a 6-mo time frame	Homeless adults attending soup kitchens in 8 US cities	241 adults with 688 ED records	Age, sex, race, marital status, and education
Liu,[46] 1999	Retrospective review of medical records	Determined retrospectively from medical record review (based on whether the patient required medical attention immediately or within a few hours)	54%	National sample of ED visits by adults (National Hospital Ambulatory Medical Care Survey)	135,723 ED patient records	Disease category, age, sex, race, region, MSA, hospital ownership, insurance
MacLean,[47] 1999	Retrospective review of medical records	Determined prospectively at triage (definition not precisely defined)	52%	Random sample of patients presenting to 89 hospital EDs in 35 states	7934	None: descriptive statistics only
Niska,[2] 2010	Retrospective review of medical records	Determined prospectively at triage (definition not precisely defined)	8%	National sample of ED visits by adults (National Hospital Ambulatory Medical Care Survey)	35,490 ED patient records	None: descriptive statistics only
Petersen,[48] 1998	Cross-sectional survey	Determined prospectively at triage (based on vital signs, history, age, symptoms, and duration of symptoms)	50%	Adult patients who presented to 1 of 5 urban teaching hospitals in the Northeast with the chief complaint of abdominal pain, chest pain, or asthma	1696	Age, sex, race, insurance, education, marital status, employment, English speaking, regular physician, comorbidities, health status
Rubin,[49] 1995	Cross-sectional survey and chart review	Determined prospectively at triage (based on referral, symptoms, complaint, and vital signs)	37%	Patients presenting to 1 urban ED	507	None: bivariate only
Sarver,[50] 2002	Cross-sectional survey and medical record review	Determined retrospectively from medical record review (based on whether visit resulted in admission, procedure/tests were conducted, whether the visit was for an accident or injury)	40%	Adults across the United States who participated in the National Medical Expenditure Survey and had a usual source of care other than the ED and who had a least 1 healthcare contact during 1996 or could not obtain needed care	9146	Age, sex, race, education, health status, employment status, income, insurance, region of residence, and rural vs urban residence
Schappert,[51] 1995	Retrospective review of medical records	Determined retrospectively by medical record review (based on initial triage evaluation and diagnosis of presenting condition and whether patient required attention within several hours)	55%	National sample of ED visits by adults (National Hospital Ambulatory Medical Care Survey)	Not described	None: bivariate only
Shesser,[34] 1991	Cross-sectional survey	Determined retrospectively by medical record review (based on vital signs, referral, hospital admission, chief complaint, arrival by ambulance)	15%	Patients presenting to 1 urban ED during business hours	549	None: bivariate only
Young,[1] 1996	Cross-sectional survey	Determined prospectively at triage (based on whether patient could wait 12-24 h for treatment)	49% of ambulatory ED patients: 39% of all ED patients	Ambulatory patients who presented to 56 hospital EDs across the United States	6187	None: bivariate only

ED indicates emergency department; HMO, health maintenance organization; *ICD-9, International Classification of Diseases, Ninth Revision*; MSA, Metropolitan Statistical Area; PCP, primary care physician.

In the reminder of this article, we summarize findings from the subset of articles (n = 16) that included a comparison group of either urgent ED patients or all ED patients *and* examined whether differences among these groups were statistically significant. We also include illustrative examples from the remaining studies (n = 10) regarding self-reported reasons for nonurgent ED use and barriers to use of alternative locations.

Factors Associated With Nonurgent Emergency Department Use

We summarize our findings on sociodemographic factors and other factors associated with nonurgent ED use in Table 3 and Table 4, respectively. These factors are discussed below.

Age. Among the 9 articles that examined age, 6 found that younger adults were more likely to have nonurgent visits compared with older adults.[32,41,46,48,50,51] Effect sizes were generally large (odds ratio [OR] >2). Three articles found no association between nonurgent ED use and age.[12,34,45]

Race. Among the 9 articles that examined race, 4 articles found that blacks were more likely than whites to have a nonurgent visit.[12,42,46,51] However, 5 articles reported no association.[16,34,45,48,50] One study pointed out that blacks had higher rates of nonurgent ED visits despite the fact that they were less likely to utilize healthcare in general.[12]

Sex. Findings were inconsistent across the 10 articles that examined gender. Four articles found that women were more likely than men to have a nonurgent visit,[32,46,48,50] and 2 articles concluded the opposite (ie, men were more likely than women to have a nonurgent visit).[34,41] Four articles found no association.[12,16,45,51]

Income. Among the 4 articles that assessed income,[12,16,34,50] 2 reported that persons with low incomes were more likely to have nonurgent ED visits.[12,50] Effect sizes were generally moderate (OR <2).

Insurance. Among the 13 articles that examined the uninsured, 2 found that uninsured patients were less likely to use the ED for nonurgent visits,[12,49] 2 found that the uninsured were more likely to use the ED for nonurgent visits,[32,34] and 5 identified no association.[1,16,43,45,48] One study found that the uninsured were more likely than HMO patients but less likely than Medicaid patients to have a nonurgent ED visit.[44] Articles that looked at Medicaid patients found that either Medicaid was predictive of nonurgent ED use[12,32,44,46,51] or there was no association.[16,34,43,49] Effect sizes were generally moderate (OR <2).

Social Support. The only social support measure reported in the literature was marital status. Among the 4 articles that looked at the relationship between nonurgent ED use and marital status, no article identified an association.[16,34,45,48]

Health Status. Among the 4 articles that examined health status, 2 found that persons with poor health were more likely to have nonurgent visits,[12,50] and 2 identified no association.[16,48]

Previous Healthcare Experiences. Previous healthcare experiences refer to an individual's utilization history both within and outside of the ED. Two articles examined previous healthcare experiences. One article found that a recent hospitalization was associated with lower odds of having a nonurgent visit, more frequent ED visits were associated with higher odds of having a nonurgent visit, and the number of primary care visits had no association with having a nonurgent visit.[45] In contrast, another article found that the average number of physician visits in an outpatient setting other than the ED was higher for persons with nonurgent ED visits.[12]

Culture/Community Norms and Personality. Culture/community norms refers to the practices of others within one's community (eg, the propensity of neighbors to use the ED). Personality factors are those related to an individual's emotional, attitudinal, and behavioral response patterns. Examples of relevant traits include decision-making style and risk aversion. No article that compared nonurgent with urgent patients assessed culture or community norms or personality factors; however, 1 study of nonurgent patients found that personality factors such as coping mechanisms were not associated with going to the ED versus PCP for a nonurgent condition.[37]

Perceived Severity. Perceived severity refers to the patient's perception of the urgency of his/her illness, which is a function of both personal beliefs and knowledge about what an emergency is. No article that compared nonurgent with urgent patients explored perceived severity; however, 4 articles that focused only on nonurgent ED visits described patients' perceptions of the urgency of their conditions. In these cases, the vast majority of patients (>80%) felt that their condition was urgent/could not wait for treatment.[3,9,36,38]

Convenience. Convenience refers to the ease with which a patient can seek care, including travel, timing, and location. Among the 3 articles that discussed convenience,[16,34,50] all found that convenience factors played a role in driving nonurgent ED use. For example, 1 study reported that the leading reason why the nonurgent group used the ED was "ease of use."[34] A descriptive study of nonurgent ED users found that 60% of nonurgent ED patients felt that the ED was more convenient than their PCP.[9]

Cost. Cost refers to the financial burden incurred by the patient. While no article that compared nonurgent with urgent patients assessed cost, 1 study of just nonurgent ED patients found that 42% chose the ED because of payment flexibility (ie, no requirement to pay at the time of care).[3]

Table 3. Sociodemographic Factors Associated With Nonurgent Use (n = 16)[a]

	Factor						
Reference	Age	Sex	Race	Income	Education	Employment Status	Insurance
Bond,[39] 1999							Uninsured/public aid more likely (71%) than insured (53%)
Campbell,[32] 1998	Younger age groups (37%-42%) more likely than older adults (11%)	Females (41%) more likely than males (28%)				No association	Medicaid (42%) or uninsured (44%) more likely than private insurance (25%) or Medicare (12%)
Cunningham,[12] 1995	No association	No association	Blacks greater likelihood than whites (OR 1.68)	Lower income greater likelihood than high income (OR 1.38)	Lower education greater likelihood than higher education (OR 1.03)		Medicaid greater likelihood than uninsured (OR 1.47) Medicare greater likelihood than uninsured (OR 1.61)
Davis,[41] 2010	Adults aged 18-49 y greater likelihood than older adults (OR 5.0)	Males greater likelihood than females (OR 1.25)					
Doty,[42] 2005			Blacks (35%) more likely than whites (20%) or Hispanics (17%) No association: whites vs Hispanics				
Garcia,[43] 2010							No association comparing Medicaid, private insurance, and uninsured
Harris Interactive,[16] 2005		No association	No association	No association	No association		No association
Gooding,[44] 1996							Uninsured greater likelihood than HMO (OR 1.12) Medicaid greater likelihood than uninsured (OR 1.15)
Han,[45] 2003	No association	No association	No association		No association		No association
Liu,[46] 1999	Younger age greater likelihood than older age (OR 1.79)	Females greater likelihood than males (OR 1.12)	Blacks greater likelihood than whites (OR 1.08)				Medicaid greater likelihood than private insurance (OR 1.14) Insurance greater likelihood than Medicare (OR 1.33)
Petersen,[48] 1998	Adults aged 16-30 y greater likelihood than adults aged >60 y (OR 4.8) Adults aged 31-40 y greater likelihood than adults aged >60 y (OR 6.5)	Females greater likelihood than males (OR 1.3	No association		No association		No association

(Continued)

Table 3. Sociodemographic Factors Associated With Nonurgent Use (n = 16)[a] *(Continued)*

Reference	Factor						
	Age	Sex	Race	Income	Education	Employment Status	Insurance
Rubin,[49] 1995							Higher percentage of the urgent group self-pay (33%) vs nonurgent group (22%) Higher percentage of nonurgent group commercial/HMO (38%) vs urgent group (25%) No association between level of urgency and Medicare and Medicaid
Sarver,[50] 2002		Females greater likelihood than males (OR 1.44)	No association	Low income greater likelihood than higher income (OR 1.70)	No association		
Schappert,[51] 1995	Adults aged 15-24 y higher rate of non-urgent visits (26.3 visits per 100 persons per year) vs all other age groups	No association	Blacks higher rate of non-urgent visits (31.8 visits per 100 persons per year) vs whites (18.3 visits per 100 persons per year)				Medicaid patients made up a larger percentage of all nonurgent visits (25%) compared with urgent visits (20%)
Shesser,[34] 1991	No association	Nonurgent group higher percentage of males (53% vs 42%) than group of all ED patients	No association	No association	No association		Nonurgent group higher percentage of self-pay (23% vs 15%) and a lower percentage of Medicare (2% vs 9%) than group of all ED patients No association between level of urgency and commercial insurance, HMO, and Medicaid
Young,[1] 1996							No association

ED indicates emergency department; HMO, health maintenance organization; OR, odds ratio; PCP, primary care physician.
[a]The majority of findings reported in the table are completed by adding the phrase "to have a nonurgent ED visit." If an article did not contain any of the factors listed in the table, it was not included in the table. Only statistically significant findings are reported ($P < .05$). Nonsignificant findings are reported as "no association."

Access. Access refers to the ability of the patient to obtain timely care outside the ED. Four articles found an association between poor access (eg, difficulty in obtaining healthcare, not having a regular physician) and nonurgent ED use.[1,16,48,50] Only 1 article (which focused exclusively on a population of homeless adults) identified no association between poor access and likelihood of having a nonurgent visit.[45] Furthermore, a Harris Interactive survey reported that ED physicians felt that waiting times for appointments with PCPs and limited access to physicians on weekends were the leading reasons for nonurgent ED use.[16] In a descriptive study of nonurgent ED patients, authors reported that the most significant barrier to getting care outside the ED was inability to get an appointment at a clinic.[35]

Referral/Advice. Referral/advice refers to being counseled to go to the ED by a provider. Two articles (1 with a comparison group and 1 on only nonurgent ED users) suggested that healthcare provider referral may be a substantial driving force in nonurgent attendance.[9,34] One article found that about half of the nonurgent patients who presented during business hours were advised to go there by a PCP.[9]

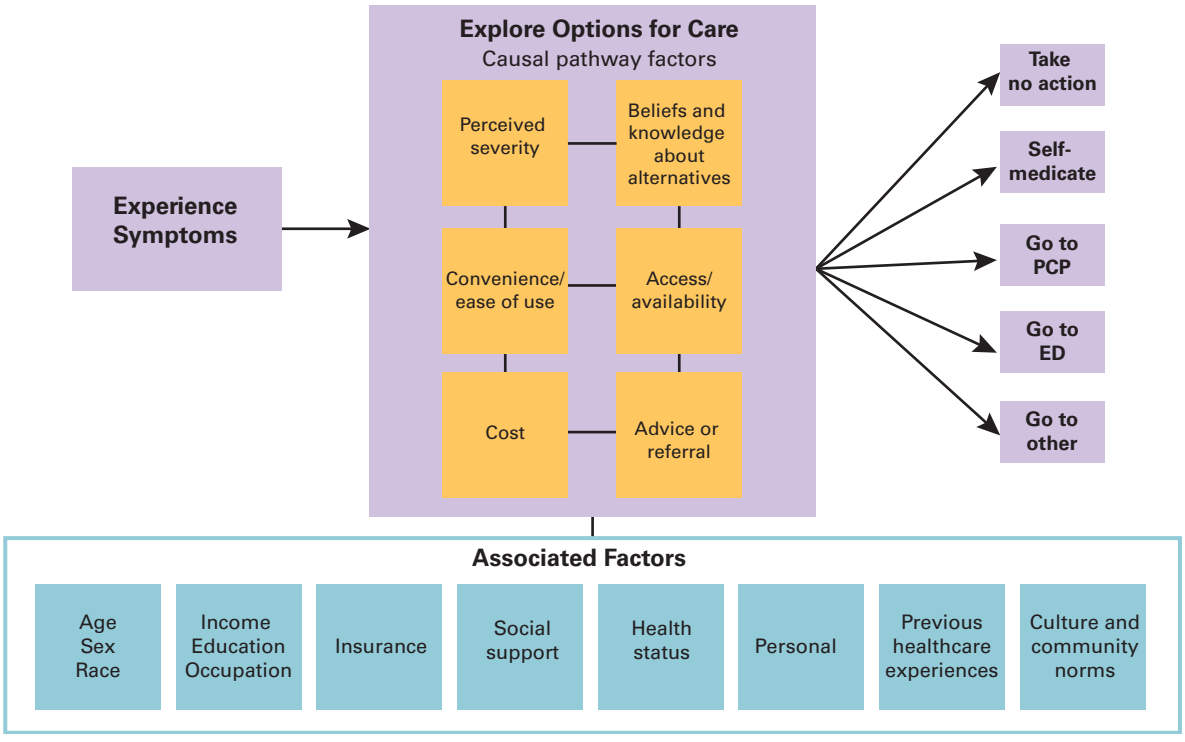
Beliefs and Knowledge About Alternatives. A total of 3 articles (2 with comparison groups and 1 on only nonurgent

Table 4. Miscellaneous Factors Associated With Nonurgent Use (n = 16)[a]

	Factor						
Reference	Marital Status	Health Status	Previous Healthcare Experiences	Convenience	Access	Referral/ Advice	Beliefs and Knowledge About Alternatives
Cunningham,[12] 1995		Poor health greater likelihood than excellent health (OR 2.17)	Average number of visits in an outpatient setting other than the ED higher for persons with nonurgent ED visits versus persons with only outpatient physician visits (5.6 vs 4.8)				
Davis,[41] 2010		Adult without chronic conditions greater likelihood than those with a chronic condition (ORs 1.11-1.67)					
Harris Interactive,[16] 2005	No association	No association		Nonurgent ED users (27%) more likely to not want to miss work than all ED users (15%)	Having a regular physician more likely among nonurgent ED users vs all ED users (35% vs 27%)		Nonurgent ED users (20%) more likely than all ED users to think other places are more expensive than the ED (12%)
Han,[45] 2003	No association		No recent hospitalization associated with higher odds of nonurgent ED visit (OR 1.85) More frequent ED visits associated with increased odds of nonurgent ED visit (OR 1.16) No association (number of primary care visits)		No association (self-reported difficulty getting healthcare)		
Petersen,[48] 1998	No association	No association			Persons without a regular physician greater likelihood than those with one (OR 1.6)		
Sarver,[50] 2002		Poor health greater likelihood than good health (OR 2.94)			Persons who said it was difficult to obtain an appointment with their usual source of care more likely (9%) than those who said it was not difficult (5%) Persons with a wait time of more than an hour at their usual source of care more likely (9%) than those with no appointment needed (5%)		Dissatisfaction with regular source of care associated with nonurgent visit (OR 1.13)
Shesser,[34] 1991	No association						
Young,[1] 1996					Patients with a usual source of care more likely to be assessed as urgent (55%) compared with those without (46%)	Referred to the ED more likely to be assessed as urgent (61%) than not referred (49%)	

ED indicates emergency department; OR, odds ratio.
[a]The majority of findings reported in the table are completed by adding the phrase "to have a nonurgent ED visit." If an article did not contain any of the factors listed in the table, it was not included in the table. Only statistically significant findings are reported (P <.05). Nonsignificant findings are reported as "no association."

Figure 2. Conceptual Model of Nonurgent Emergency Department Use



ED indicates emergency department; PCP, primary care physician.

ED users) directly addressed beliefs about alternatives. One article reported that 76% of nonurgent ED users chose the ED because they felt they would receive better care there.[3] A Harris Interactive survey reported that nonurgent ED users were more likely to think that other places were more expensive than the ED.[16] Finally, another article found that persons who were not satisfied with their regular source of care were more likely to make a nonurgent visit to an ED.[50]

DISCUSSION

Due to the heterogeneity and limitations of the articles, it is challenging to summarize what drives the decision to seek ED care for nonurgent conditions. The limited evidence suggests that younger age, greater convenience of the ED compared with other ambulatory care alternatives, referral to the ED by a healthcare provider, and negative perceptions of non-ED care sites all play a role in decisions to seek care in the ED for nonurgent problems. Other factors appear unrelated to nonurgent ED use, or more commonly, the results are inconclusive due to inconsistencies across studies or because the factors have rarely been studied. Because of the weak evidence base, we argue that all of the factors assessed in the literature are candidates for future research.

We believe a key limitation of these prior studies is the lack of a robust theoretical framework on what drives nonurgent ED use. To potentially guide future work, we created a theoretical model of the decision-making process and factors that may influence a patient's decision to visit the ED for a nonurgent condition. We based the model on review of included studies, as well as qualitative studies and commentaries.[6,7,22,24,26,27,30,31,52] Qualitative studies that used patient interviews and focus groups were important to include because they generated hypotheses regarding reasons for use that can be probed in future empirical work.

The model depicted in **Figure 2** suggests that a patient arrives at a decision to seek care in an ED by consciously or unconsciously weighing several considerations. First, the patient experiences acute symptoms—either a new problem or a flare-up of a chronic condition that is not immediately debilitating or clearly emergent (eg, chest pain, signs of stroke). The patient then considers various options including going to the ED, going to another location, or not seeking care.

In our model, the decision to go the ED is influenced by an array of causal pathway factors and associated factors. While *all* of the factors depicted in the model likely influence nonurgent ED use, the causal pathway factors act as independent predictors. In contrast, we believe associated factors influence

ED use via one of the causal pathway factors. For example, while certain models suggest that gender may be associated with nonurgent use, there is no a priori explanation as to why gender would be influential. We believe that gender, an associated factor, could possibly impact the decision to seek care in the ED for a nonurgent condition by affecting the perceived severity of the condition and beliefs and knowledge about alternatives (both causal pathway factors). In our review, the distinction between causal pathway and associated factors is also important, as almost all interventions to decrease nonurgent ED use focus on causal pathway factors.

Although our model does not directly address healthcare supply because we focused on the perspective of the individual patient, one could imagine that the availability (or lack thereof) of options, including a limited supply of providers or an extended wait to be seen, could raise or lower the threshold for seeking care. In addition, while features of the healthcare system such as overall access to care or societal context are not the focus of our framework, they play a role in an individual's decision making by influencing their knowledge, beliefs, and attitudes about alternative locations for care.

The literature we reviewed on nonurgent ED use has several key limitations. First, descriptive studies of just nonurgent ED visits are hard to interpret. For example, although the self-perceived severity of their problem was high among patients who visited the ED for what others judged to be nonurgent, we do not know whether perceived severity is similar among those who go to other care sites. Second, the comparison of urgent with nonurgent ED visits used in the vast majority of studies might be flawed. Urgent problems (eg, chest pain) are qualitatively different than nonurgent problems (eg, sore throat). The more relevant question is: why does the patient with a self-recognized nonurgent problem choose the ED rather than seek care at an alternative location or simply stay home? Only 2 studies compared nonurgent ED visits with nonurgent PCP visits.[33,37] However, we cannot draw conclusions based on these papers because they did not evaluate similar independent variables. Ideally, future studies would also include patients who became ill with a time-limited condition but chose not to seek care. Third, studies disproportionately focused on associated factors (eg, age, sex) that are easy to measure and classify but do not provide a causal mechanism for driving nonurgent ED use and are difficult or impossible to modify. We hope that our theoretical model can guide future work to assess the frequency and relative importance of different causal factors.[33,37] Fourth, there are problems in clarifying the relationship between predictors of nonurgent ED use and the definition of nonurgent use itself. For example, based on current research it is unclear whether older adults are in fact less likely to go to the ED for minor conditions *or* whether their visits are more likely to be deemed "urgent" because they are frail or have multiple comorbid conditions. Lastly, health services research often makes broad generalizations about populations. Because nonurgent ED users are likely a diverse group, the better approach might be to try to break up nonurgent ED users into different strata.[34] For example, some individuals may be using the ED due to habit, preference, or lack of education regarding alternatives. The ideal intervention might vary by the different strata. Prior to applying them, the precise issues or challenges need be identified so that the correct intervention(s) is applied to encourage or enable desired behavior by patients.

It is widely presumed that redirecting nonurgent visits to alternate settings is a desirable policy goal, if for no other reasons than to reduce healthcare spending and enable EDs to focus their efforts on more acutely ill and injured patients. However, efforts to deter nonurgent ED use could produce unintended consequences. Imposition of steep copayments and deductibles to discourage ED use might deter some patients from timely care-seeking for serious or even life-threatening problems. Even steering patients to alternate settings from the ED triage desk is not without risk. Some studies have shown that as many as 3% to 5% of patients triaged as nonurgent require immediate hospitalization after further evaluation in the ED.[1] Another unintended consequence to consider is increased utilization; efforts to encourage alternatives to the ED (eg, retail clinics) might induce patients who previously would have stayed at home to seek care. Likewise, it is only acceptable to discourage nonurgent use in communities where patients have real alternatives, such as accessible PCPs. High rates of nonurgent ED visits can in fact be an indicator of poor primary care access, as suggested by the ED Use Profiling Algorithm that classifies ED visits by whether they could be treated elsewhere or, although emergent, could have been prevented by earlier access to primary care.[53]

LIMITATIONS

The major limitation of this review is that the validity of findings is limited by the quality of included articles. Few studied used multivariate statistics, so we are unsure whether the identified factors are associated with nonurgent ED use controlling for other factors. Also, the diverse (and controversial) criteria used to define nonurgent visits limit the comparability of findings. As described above, no 2 studies used the same exact definition of nonurgent visits, identifying nonurgent visits prospectively at triage (eg, based on symptoms) and/or retrospectively (eg, based on ultimate diagnosis). While nonurgent visits seem to represent a significant fraction of all visits, prudent layperson standards that now broadly apply to all health plans

require insurers to cover emergency services if a prudent layperson believed he or she was experiencing a medical emergency (regardless of the final diagnosis).[54] The standard, advocated by the American College of Emergency Physicians for more than 2 decades, conflicts in principle with the 11 articles that defined urgency based on retrospective review of medical records.

CONCLUSIONS

Despite the significant policy interest in deterring nonurgent ED use, our literature review highlights both the limited understanding of what drives nonurgent ED use and flaws in most of the published studies. If health plans, policy makers, and providers want to reduce use of the ED for nonurgent problems, they must ensure that their interventions are evidence-based and tailored to address the needs and concerns of the populations they are designed to serve.

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eAppendix. Definitions of Nonurgent Visits

Among articles that reviewed medical records retrospectively, criteria used to define nonurgent visits included admission to hospital,[32,34,40,45,50] diagnoses,[33,40,41,51] vital signs, complaint,[32,34,45] timing of visit,[32,40] arrival to emergency department (ED) (eg, nonambulance),[34,40] procedures and/or tests ordered,[41,44,50] patient's ability to wait for evaluation or care,[43,46,51] comorbidities,[32,45] whether visit was for an accident/injury,[50] triage evaluation,[51] or referral.[34] Among articles that determined level of urgency at triage, criteria included vital signs,[3,9,35,48,49] ability of patient to wait for evaluation or care,[1,36,38,39] expectations of procedures/treatments/resources,[3,9,35] symptoms,[9,48,49] age,[48] responsiveness,[3] level of distress,[3] medical history,[48] duration of symptoms,[48] referral,[49] and complaint.[49] Among articles that asked patients to retrospectively self-report the urgency of their visit, criteria included whether patient could have been seen by a primary care provider,[16,42] admission to hospital,[12] whether visit was for an accident/injury,[12] procedures performed,[12] referral,[12] arrival to ED,[12] perceived seriousness of condition,[12] ability of patient to wait for evaluation or care,[16] and timing of visit.[16]