

Enhanced Emergency Department Referral Improves Primary Care Access

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Abstract

Objective: People who use the emergency department (ED) as their main source of medical care cite access barriers to primary care as the reason. The purpose of this study was to test an intervention designed to refer regular ED users to primary care.

Study design: A prospective randomized clinical trial.

Patients and Methods: Adults who stated the ED is their regular source of care and have no primary care (n = 189) were randomized to 2 groups: the intervention being studied or usual care. The study took place over 3 months at a northeastern urban hospital.

Results: Subjects in the intervention group were more than twice as likely to keep the primary care appointment compared with the usual care group, and most also received some measure of preventive care. There was no significant difference in ED utilization by these patients in the 12-month period following study entry.

Conclusion: Making an appointment with detailed instructions during a visit to the ED markedly improves show rates at follow-up appointments with a primary care provider and allowed for opportunity to provide important preventive services.

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Many people use the emergency department (ED) as their main source of medical care. Patients often report access barriers to office-based primary care (private or clinic sites), or the convenience of 24-hour availability as reasons for choosing to utilize the ED for their care.¹ Medicaid recipients have been shown to have limited access to outpatient care other than ED care.² Persons without medical insurance may misjudge the cost of an ED visit.³

Healthcare utilization centered around ED use is associated with suboptimal preventive and primary care. Women who do not have a regular source of ambulatory care are less likely to have routine screening for breast and cervical cancers.⁴ In addition, individuals who depend on the ED for their medical care are less likely to receive adequate treatment of chronic conditions such as hypertension.⁵⁻⁷

Managed care systems use a variety of methods to direct patients from EDs to less expensive primary care settings, yet little is known about the optimal way to engage regular ED users in primary care. A few studies have investigated use of interventions to connect ED patients with primary care providers, including extensive patient education by nurses in the ED, referral from ED triage areas directly to office sites, and referral from ED triage to lists of available sites.⁸⁻¹¹ The latter 2 interventions involve turning the patient away from the ED without being seen by a physician. An earlier study at Rhode Island Hospital found that 25% of ED patients do not have a primary care physician, and 25% report using the ED as their regular source of care.⁸ In an attempt to improve the primary care of this population, we tested a novel intervention designed to refer regular ED users to primary care.

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... METHODS ...

A prospective randomized clinical trial of enhanced referral to primary care for ED patients

was done in an urban academic hospital that has 70,000 adult patients using the ED per year. The Medical Primary Care Unit (MPCU), the site of primary care referral in our study, is a hospital-based teaching clinic staffed by residents and attending physicians located in an adjacent building. The study was approved by the hospital Institutional Review Board.

The study was performed from June 1, 1997, through August 31, 1997, 7 days a week between the hours of 8:00 AM and midnight. During study hours, a research assistant approached consecutive patients in the ED waiting area and gave them a brief questionnaire to establish study eligibility. Inclusion criteria were: being 18 years of age or older, self-reporting the use of the ED as a regular source of care, not having a primary care site or physician in the past 12 months, being able to speak either English or Spanish, not having impaired consciousness, and not being immediately triaged to the urgent area. All eligible persons were asked to give informed consent, then were given a brief questionnaire by the research assistant that included questions on demographics, health status, and healthcare utilization. Subjects were then randomized according to a computer-generated randomization code prepared by the primary investigator to either usual care or the intervention being studied.

Usual care consisted of giving the subject the phone number of the MPCU with instructions to call for an appointment. The intervention group received an appointment for a mutually agreeable reserved time in the MPCU within 2 to 3 weeks and were given a handout with the date and time of the appointment, the physician's name, written directions and a map to the MPCU, and information about services provided in the clinic. This handout also noted the clinic policy of caring for patients regardless of their ability to pay or insurance status, and described the availability of free medications through various programs sponsored by pharmaceutical companies. All referral information was given to subjects prior to seeing the ED physician. A notation was placed on the chart to let the ED physician know an appointment was made for the patient. Patients were not held in the waiting room to complete the study (ie, if necessary, the research assistant completed the survey in the treatment area).

The primary outcome measured was whether the appointment scheduled in the MPCU within 1 month of the ED visit was kept. Secondary outcomes included the number of follow-up visits to the MPCU during the 12-month follow-up period; the number

of ED visits over the subsequent 1 month, 6 months, and 1 year; and what preventive health services, if any, were obtained during the MPCU visit(s), such as complete physical examinations, blood pressure checks, Pap smears, and smoking cessation counseling. The number of visits to the MPCU and the ED were determined using Rhode Island Hospital's administrative database. Preventive health services were determined by chart review.

Two-tailed tests were used to calculate outcome differences between treatment groups. Chi-square calculations were used to estimate relative risks. Statistical analysis was done using Stata statistical software. Prior to the study, we estimated a sample size of 180 subjects would be needed to have 80% power to detect a 20% difference in appointment keeping at 1 month (25% vs 20% \pm 12%) and in the number of ED visits (1 vs 2 \pm 2) in the subsequent 12 months. This was based on data from a small internal study at our institution (C. Tennebruso, MD, written communication, February 1997) and on our previous data.⁷

...RESULTS ...

During the enrollment period, 2300 patients registered in the ED. Of these, 1716 did not meet eligibility criteria and 370 were not assessed for eligibility because of immediate triage to urgent area (270) or because of impaired consciousness or a language barrier (100). Of the remaining 214 patients, 25 refused to participate, resulting in a response rate of 88%. Those who refused to participate were not statistically different from the study participants in age, race, or gender. There were 189 subjects enrolled into the study, with 97 in the intervention group and 92 in the usual care group (Table 1).

Demographics

Half of the subjects were female, nearly three quarters were uninsured, and most reported an annual household income of less than \$12,000. Approximately half were white, and most had a high school education or less. There was no significant difference between the 2 treatment groups in any demographic characteristic (Table 1).

Primary Care Measures

Over one quarter of subjects reported not having had a physical examination in 5 years or more, and more than one third of women had not had a Pap smear in 3 years or more. Of the approximate 50%

who were smokers, only one third had been counseled about smoking cessation.

Health Status

Almost two thirds of the subjects reported good, very good, or excellent health on a 5-point Likert Scale. One third stated they had at least 1 chronic medical condition, such as heart disease, lung disease, high blood pressure, or diabetes. Of these patients, 25% reported use of prescription medications.

Utilization of Healthcare

The average number of ED visits for all subjects in the past 12 months was 1.39 ± 2.7 , with 17% of subjects having had 4 or more visits per year. Thirteen percent of subjects reported that they had been refused care in a primary care office in the past. Almost all subjects responded affirmatively when asked if they wanted or needed a primary care physician, but only 10% indicated they had made an attempt to obtain primary care services in the past 12 months. When asked hypothetically if they would skip the current ED visit in exchange for an appointment with a physician within 72 hours, almost two thirds responded that they would.

Primary Outcome

Of those in the intervention group, 23 subjects kept the appointment as originally scheduled and 6 rescheduled and came at a later date within the month, for a total of 29 kept appointments (Table 2). Subjects in the intervention group were more than twice as likely to keep an appointment in the MPCU compared with the usual care group (30% vs 14%, RR=2.12, 95% CI, 1.2 to 3.8, $P=.009$). Of those in the intervention group who kept an appointment ($n=29, 30\%$), 66% ($n=19$) came for a second appointment in the MPCU within 3 months.

Secondary Outcomes

There was no significant difference in ED use between the 2 groups at 1, 6, and 12 months from the initial visit (Table 2).

Those who kept their appointments ($n=29$) were more likely to be female (RR=2.4, 95% CI, 1.1 to 4.8; $P=.01$) and have no chronic disease (RR=1.8, 95% CI, .96 to 3.3; $P=.07$). Keeping appointments was not significantly associated with other patient factors listed in Table 1. All of the 29 subjects who kept their appointments stated on the initial survey that they thought they needed primary care. There was no significant difference in ED visits between those who kept appointments ($n=42$) and all others ($n=147$).

Table 1. Demographics and Primary Care Measures in Intervention and Usual Care Groups

Variable	Intervention n = 97	Usual Care n = 92	P
Demographics			
Female	50%	50%	.61
Age <30 y	53%	53%	.89
Race			
White	56%	50%	.13
Black	27%	21%	
Hispanic	15%	23%	
Asian	0%	1%	
Other	2%	5%	
Income < \$12,000	73%	79%	.38
Education ≤12 years	72%	78%	.71
Children at home < 13 years of age	28%	35%	.30
Employed	44%	48%	.63
Insurance			
None	70%	80%	.14
Medicaid	21%	12%	
Medicare	4%	5%	
Medicaid & Medicare	4%	2%	
Average number of ED visits past year	1.53	1.25	.72
Primary Care Measures			
Last physical exam > 5 years ago	29%	20%	.34
Last Pap smear > 3 years ago	32%	41%	.28
Smoker	55%	50%	.52
Physician counseled to quit smoking	20%	35%	.09
Chronic disease	36%	33%	.62
Chronic disease on medication	27%	21%	.32
Good-excellent health	64%	60%	.95
Want primary care	86%	84%	.72
Would skip visit for scheduled appointment	66%	61%	.47

Of the 29 patients seen in the MPCU, 26 had complete physical examinations, 7 had Pap smears, 3 were offered and refused Pap smears, 9 were counseled about smoking cessation, and 9 were counseled about either safe sex or substance use. Overall, 20 out of 29 had at least one measure of preventive care addressed.

...DISCUSSION ...

Compared with usual ED care, this simple intervention in the ED improved the rates that appointments were kept for primary care visits. While rates of follow-up in primary care were low in both groups, they were significantly higher in the intervention group. Patients who kept their appointments were more likely to be female, to not have chronic illness, and to think they needed primary care. Many patients who initiated primary care returned for subsequent visits, and most received preventive care. While the study was limited to one hospital, the intervention is generalizable to other urban hospitals that care for large numbers of patients who use the ED as their regular source of care.

Other studies have shown some success in either referring patients to primary care from the ED or in improving the use of follow-up care. These interventions used nurses or nurse practitioners to educate patients in the ED and make telephone calls regarding appointments and follow-up. In some studies, patients were turned away from the ED without being seen by a physician after being offered a list of

treatment sites or an appointment elsewhere.⁸⁻¹¹ These interventions tend to be labor intensive and time consuming and may not be well received by patients. Additionally, Medicaid demonstration programs have shown some success in referral to primary care and reductions in ED visits using gatekeeper or case management systems.¹²⁻¹⁴ The intervention in this study required comparatively little time and did not involve turning patients away from the ED without care. While some authors have suggested that patients need not be referred from the ED at all, as the additional cost of seeing them in the ED is low,¹⁵ cost is not the only issue. EDs are not designed to provide preventive services or continuity-of-care for ongoing medical problems, and emergency physicians are not trained in such care. Settings such as the study hospital's MPCU already exist and serve such a role.

Reasons for regular ED use have been previously described, including patients' perceptions that the ED visit costs less or the same as an office visit, their perceptions of having been refused care in the past, and the absence of chronic illness.⁸ Most of the subjects in this study were uninsured or receiving Medicaid. A large Medicaid study showed that access to primary care for Medicaid recipients is limited in urban areas, most commonly because practices do not accept Medicaid or they require a copayment. Many practices direct Medicaid recipients to the ED.² The majority of subjects in this study reported a need and desire to have a primary care provider, yet few report seeking out such care. While this intervention provided patients with access to primary care and resulted in higher show rates than with

usual care, rates were still low compared with the overall appointment compliance rate of 65% at the MPCU. Other studies have suggested that often other barriers to primary care exist such as lack of transportation, which could be a factor for the subjects in this study, as more than 80% live more than 1 mile from the hospital.¹⁶ In addition, patients may not see the need for further care after resolution of the symptoms that prompted the ED visit. It is also possible that subjects sought primary care at another site, although no information was provided to them about other sites.

Patients with no health insurance are less likely to receive preventive

Table 2. Appointment Keeping and ED Visits

Outcome	Intervention n = 97	Usual Care n = 92	RR (95% CI)	P
Kept appointment in MPCU	30%	14%	2.12 (1.17-3.81)	.009
ED visit subsequent 1 month	12%	14%	.866 (.42-1.8)	.70
Subsequent 6 months	41%	35%	1.17 (.81-1.70)	.39
Subsequent 12 months	47%	47%	1.00 (.74-1.36)	.98

screening tests and counseling. Compared with women who have insurance, uninsured women are 1.5 times less likely to get a routine Pap smear.¹⁷ More than one third of the female subjects had not had a Pap smear in 3 or more years, but many who were offered a Pap smear at their follow-up had one done. Approximately one quarter of subjects had not had a physical examination in a primary care setting in 5 or more years, and almost all who came to their appointment had a complete physical examination; in the ED, only a symptom-directed examination would be performed. One quarter of the intervention group subjects had never had their blood pressure checked in an office setting, but all who went to their follow-up visits had at least one blood pressure measurement in the MPCU. Many were also counseled about smoking cessation, safe sex, or substance use, which are preventive care services not routinely offered in the ED.

ED use remained similar between the groups at 1, 6, and 12 months. This may be because health service use behavior is hard to change, or because beliefs about continued primary care access or convenience are ingrained. Alternatively, persons without experience with ambulatory care clinics may not know how to use them optimally. Further patient education regarding use of clinic services, particularly regarding availability of on-call physicians and medications, should be included in descriptions of outpatient clinics.

The intervention in this study has become standard practice in our ED. A number of appointment slots are available each day and are readily accessed by the ED physician who can then give the patient an informational handout when discharged from the ED. While ED utilization did not decrease, the rates of appointment-keeping in primary care were improved, resulting in the provision of important preventive services and advancing our goal of improving healthcare for this population.

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