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Where Health and Welfare Meet: Social Deprivation Among Patients in the Emergency Department

James A. Gordon, Carl R. Chudnofsky, and
Rodney A. Hayward

ABSTRACT Context. *As a safety net provider for many disadvantaged Americans, the emergency department (ED) may be an efficient site not only for providing acute medical care, but also for addressing serious social needs.*

Objective. *To characterize the social needs of ED patients, and to evaluate whether the most disadvantaged patients have connections with the health and welfare system outside the ED.*

Design. *Cross-sectional survey conducted over 24 hours in the fall of 1997.*

Setting. *Three EDs: an urban public teaching hospital, a suburban university hospital, and a semirural community hospital.*

Participants. *Consecutive patients presenting for care, including those transported by ambulance. The survey response rate was 91% (N = 300; urban = 115, suburban = 102, rural = 83).*

Main Outcome Measure. *Index of socioeconomic deprivation described by the US Census Bureau (based on food, housing, and utilities).*

Results. *Of all ED patients, 31% reported one or more serious social deprivations. For example, 13% of urban patients reported not having enough food to eat, and 9% of rural patients reported disconnection of their gas or electricity (US population averages both less than 3%). While 40% of all patients had no consistent health care outside the ED (≤ 1 visit/year), those with higher levels of social deprivation had the least contact with the health care system outside the ED ($P < .01$). Although those with higher levels of deprivation were more likely to receive public assistance, still almost one-quarter of patients with high-level social deprivation were not receiving public aid.*

Dr. Gordon is from the Division of Emergency Medicine, Harvard Medical School; the Department of Emergency Medicine, Massachusetts General Hospital; and the Institute for Health Policy, Massachusetts General Hospital/Partners HealthCare System, Boston, Massachusetts. Dr. Chudnofsky is from the Department of Emergency Medicine, Albert Einstein Medical Center, Philadelphia, Pennsylvania. Dr. Hayward is from the Robert Wood Johnson Clinical Scholars Program and Department of Internal Medicine, University of Michigan Health System, Department of Veterans Affairs, VA Medical Center, Ann Arbor, Michigan.

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Correspondence: James A. Gordon, MD, MPA, Department of Emergency Medicine, Massachusetts General Hospital, 55 Fruit Street, CLN 115, Boston, MA 02114-2696. (E-mail: jgordon3@partners.org)

Conclusion. Many ED patients suffer from fundamental social deprivations that threaten basic health. The most disadvantaged of these patients frequently lack contact with other medical care sites or public assistance networks. Community efforts to address serious social deprivation should include partnerships with the local ED.

INTRODUCTION

Health and welfare reform have continued to challenge the capacity of those public agencies and institutions that comprise the social safety net. With the passage of the Consolidated Omnibus Reconciliation Act of 1986 (a federal law requiring that emergency departments [EDs] provide a medical screening exam and necessary emergency medical stabilization for all who present),¹ the hospital ED became the only component of the US health care system mandated by federal law to provide universal medical screening and treatment. At that time, Congress sought to extend broad protection to uninsured patients against the refusal of care by private hospitals. With federal welfare reform a decade later, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 again mandated access to emergency medical care, this time as one of the only components of the entire welfare system guaranteed by law for many of the most disadvantaged.² Although Medicaid beneficiaries and the uninsured already are over-represented in the over 100 million ED visits each year,^{3,4} even more of the uninsured may be forced to seek ED care as community clinics face an increasingly competitive health care marketplace.

While health and social welfare concerns often are interrelated critically among disadvantaged patients,⁵ little is known about the social needs of vulnerable ED populations. More of the disadvantaged may pass through the door of the ED than through any other community institution, yet community efforts to address serious social deprivation, like the lack of food or home heating, typically do not involve the ED. We conducted this study to characterize more fully the social needs of ED patients and to examine whether the most disadvantaged patients lack connections with the health and welfare system outside the ED. We suspected that the ED in fact may be a primary institutional contact for many disadvantaged patients, and that an ED visit may provide a unique opportunity to help direct the most vulnerable patients to available community resources.

METHODS

Study Design

We conducted a cross-sectional survey of consecutive patients presenting to three separate EDs over a 24-hour period (late morning Friday to Saturday) in the fall of 1997. Surveys contained no individual identifiers, thereby protecting respondent anonymity. The study was approved or exempted from review by the institutional review boards at all participating sites.

Setting and Population

Our setting was three Michigan EDs: a public urban teaching hospital ED (65,000 visits/year), a suburban university hospital ED (55,000 visits/year), and a semirural community hospital ED (45,000 visits/year). The sample consisted of consecutive patients presenting for care during the study period, including those transported by ambulance. A self-administered questionnaire was distributed at registration and

collected prior to admission or discharge from the ED, with study personnel available to assist with survey completion as needed (rare). An accompanying parent or proxy was asked to complete the form for children or others who could not answer the questions independently. Institutionalized patients and those with critical illnesses were excluded if a proxy response was unavailable or inappropriate.

Measurements

We designed a survey that included an index of social deprivation previously developed by members of the Census Bureau and the President's Council of Economic Advisors.^{6,7} The index components are contained in the national *Survey of Income and Program Participation*,⁸ which provided us with comparison figures for the general US population. The index is the simple sum of nine variables, each of which represent "rare events, even for the poor"^{7(p3)}: eviction in the past year, gas or electricity turned off in the past year, phone disconnected in the past year, sometimes or frequently not having enough food in the last month, no working refrigerator, no working stove, no working telephone, crowded housing (>1 person/room), and moderate-to-severe housing upkeep problems (≥ 3 of the following: leaking roof or ceiling; toilet, hot water heater, plumbing not working; broken windows; exposed wiring; holes in the floor; cracks or holes in the wall or ceiling; and rats, mice, or roaches). Demographic survey items were drawn from other previously validated national surveys, including the *National Health Interview Survey*,⁹ and the Robert Wood Johnson *Access to Care Survey*.¹⁰

Data Analysis

Nonresponse to any item of the deprivation index was considered absence of that deprivation, yielding the most conservative estimate of social deprivation. Chi-square analyses were used to test for differences among study sites. Using logistic regression, we tested for whether having a source of medical care outside the ED and having contacts with the public welfare system were associated with the number of social deprivations.

RESULTS

A few patients were not identified at triage; however, we were able to distribute surveys to 366 of 410 consecutive patients presenting during the study period. There were 35 patients excluded as ineligible (14 institutionalized patients, 21 patients whose critical illness and lack of an available proxy precluded participation). Of 331 remaining eligible patients who were approached for the study, 300 filled out the survey (91%). Ambulance transports accounted for 30 participants. Proxy responses accounted for 127 responses (42%), of which 92 responders were members of the patient's household, including 66 parents. Survey response rates were similar among sites, with individual ED volume accounting for slight differences among urban, suburban, and rural enrollment.

Sociodemographic Characteristics

Basic patient demographic characteristics are shown in Table 1. The median patient age was 31 years, which was similar among sites. There were nearly equal numbers of males and females, except at the suburban site, where 74% were female. Respondents were predominantly white at the suburban and rural sites, but at the urban site, the majority of the sample were African American. An annual income under

TABLE 1. Demographic characteristics of emergency department (ED) patients

Characteristic	Urban ED, no. (%)	Suburban ED, no. (%)	Semirural ED, no. (%)
Sex (N = 278)*			
Female	59 (55)	70 (74)	38 (49)
Male	48 (45)	24 (26)	39 (51)
Race (N = 278)*			
White	42 (39)	72 (77)	68 (88)
African-American	59 (55)	11 (12)	5 (6)
Other	6 (6)	11 (11)	4 (5)
Age (median years) (N = 271)	— 29	— 32	— 32
Education (median grade) (N = 209 adults)	— 12.0	— 13.5	— 12.0
Annual household income (N = 243)*			
Less than \$10,000/year	35 (40)	6 (7)	21 (30)
\$10,000–\$19,999/year	22 (25)	9 (10)	13 (19)
\$20,000 or more/year	30 (35)	72 (83)	35 (51)
Insurance status (N = 286)*†			
Uninsured	23 (21)	7 (7)	14 (18)
Medicare	14 (13)	15 (15)	9 (12)
Medicaid	44 (40)	5 (5)	20 (26)
Private/commercial insurance	33 (30)	73 (74)	30 (39)
Other/unknown insurance	15 (14)	14 (14)	34 (17)
Public assistance (N = 259)*			
Receives any public aid	66 (65)	15 (17)	35 (51)
Welfare payments	25 (24)	2 (2)	15 (21)
SSI	21 (21)	8 (9)	14 (21)
Food stamps	38 (37)	3 (3)	20 (29)
Public housing	6 (6)	1 (1)	5 (7)

* $P < .05$ by χ^2 analysis comparing proportions among the three ED sites.

†Totals may exceed 100% because respondents could report more than one source of insurance.

\$10,000 was reported by between 30% and 40% of urban and rural patients, but such poverty was rare at the suburban site. Median education level was at least the high school equivalent at all sites, but was higher at the suburban site. Similarly, we saw fairly high rates of being uninsured, having Medicaid, and receiving public assistance (welfare payments, Supplemental Security Income [SSI], Medicaid, food stamps, or public housing) at the urban and rural sites, but much lower rates at the suburban ED.

Emergency Department Portrait of Patient Deprivation

Table 2 depicts the prevalence of selected measures of social deprivation found among ED patients; the measures are stratified by site and compared to national averages. Of all urban patients, 13%—nearly 1 in 7 patients presenting to the ED over 24 hours—reported sometimes or often not having enough food to eat over the past 4 months. The suburban and rural sites were much closer to the national average of just under 3%. About one-quarter of urban and rural patients could not pay the full amount of a utility bill over the past year, resulting in disconnection of gas or electricity for 5% of urban patients, but almost a full 9% of rural patients.

TABLE 2. An index of social deprivation among emergency department (ED) patients

Household characteristic	Urban ED, no. (%), n = 112	Suburban ED, no. (%), n = 98	Semirural ED, no. (%), n = 79	National comparison,† %
Deprivation index: variables				
Not enough food in the past 4 months*	15 (13)	3 (3)	4 (5)	2.6
Evicted in past year	4 (3.5)	1 (1)	3 (4)	0.6
Had gas/electric service turned off in past year*	6 (5.3)	1 (1)	7 (8.9)	2.7
Had telephone service disconnected in past year*	21 (19)	2 (2)	8 (10)	4.9
No working refrigerator	4 (3.6)	1 (1)	3 (3.8)	0.7
No working stove	5 (4.5)	1 (1)	2 (2.5)	0.7
No working telephone*	14 (13)	2 (2)	9 (11)	5.5
Housing with moderate or severe upkeep problems	6 (5.4)	3 (3)	5 (6.3)	6.6
Crowded housing	18 (16)	6 (6.1)	7 (8.9)	6.6
Deprivation index: score				
No deprivations*	62 (55)	83 (85)	54 (68)	82
One deprivation or more*	50 (45)	15 (15)	25 (31)	18
Two deprivations or more*	26 (23)	3 (3)	14 (17)	6.2
Three deprivations or more	11 (10)	2 (2)	7 (9)	2.4

* $P \leq .05$ by χ^2 analysis comparing proportions among the three ED sites.

†Based on national survey data reported in Federman et al.⁶

Telephone service was disconnected for failure to pay in about 19% of urban households and 10% of rural households.

The prevalence of simultaneous index deprivations is also depicted in Table 2 (index "score"). Of all ED patients, 31% (including almost half of urban patients and one-third of rural patients) reported one or more serious social deprivations. Almost one-quarter of urban patients and one-fifth of rural patients reported two or more serious deprivations, and almost 10% of both urban and rural ED patients reported three or more serious deprivations. While the index scores for those patients at the suburban ED closely parallel those of the general US population, the index scores for the urban and rural sites were significantly above the national averages.

The Emergency Department as a Primary Institutional Contact

We wondered whether ED patients with serious social deprivation were connected with other helping professionals or institutions or whether the ED was a primary institutional contact. The Figure depicts connections of ED patients with the health and welfare system as a function of social deprivation. Among all patients, a substantial number (40%) did not have consistent health care outside the ED (≤ 1 visit/year); in fact, those with higher levels of deprivation had the least contact with the health care system outside the ED ($P < .01$). Those with higher levels of deprivation were more likely to receive public assistance; still, almost one-quarter of patients with three serious deprivations were not receiving public aid.

FIGURE. Connections of emergency department patients with the health and welfare system.

*Regression analysis shows both trends significant at $P < .01$.

COMMENTS

Many of the ED patients we studied, especially in the urban and rural settings, are not merely poor or uninsured, but suffer from fundamental social deprivations that threaten basic health. They do not have enough food to eat, cannot afford heating, and have no phone to stay in touch. Some may argue that the ED population needs more stable access to the health and welfare system—that such patients should have regular sources of health and social care through which linkages to appropriate services should be provided. But, many ED patients continue to experience barriers to convenient primary health care¹¹ and find that existing welfare networks can be difficult to access without assistance or referrals.¹² Indeed, many of the most disadvantaged patients in our study not only lacked contact with other medical care sites, but also lacked contact with public assistance networks. By linking disadvantaged ED patients with needed health and welfare services at the time of their visit, the ED encounter may provide a unique opportunity to help the most vulnerable patients to access available community resources.¹³

Some hospitals have already begun to treat the ED visit as a valuable opportunity for expanded service coordination,^{14,15} and some authors have suggested multidisciplinary discharge planning.¹⁶ Models like an ED-based “social triage center”¹⁷ build upon the current model of medical social work and case management, formalizing and expanding the ED as an outpost of the local public health and welfare office and establishing it as an integrated community resource. Although some efforts at social screening and intervention have been introduced successfully in the ED,^{18–20} social workers and vital services are often absent at crucial times.²¹ Yet, the potential impact of an effective social triage service—including fewer “social” hospital admissions, fewer return ED visits, and more efficient use of nurse and physician time—can offset program expenses substantively.^{22–25}

Because our survey method did not include an analysis of deprivation rates in

communities outside each individual ED, it is possible that our ED deprivation rates merely reflect the needs of surrounding populations. Moreover, we did not set up formal comparisons to identify and evaluate for the effectiveness of prior institutional contacts. Nonetheless, we were able to identify the ED as a main contact point for health care among a group of patients with high-level social deprivation, many of whom were not receiving public assistance. If the medical profession is dedicated to promoting health and not just reacting to disease, then helping to mitigate serious social deprivation among our patients should be a high priority. Innovative approaches to integrating social services and health care in the ED may provide some of the most promising solutions.

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