ORIGINAL ARTICLES: VARIOUS TOPICS

The Urban Safety Net: Can It Keep People Healthy and Out of the Hospital?

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ABSTRACT *There is much discussion and debate over the relative vulnerability and capacity of the health care safety net to care for the growing numbers of uninsured and disenfranchised persons in urban poor communities. In this study, we present findings from a community-based survey of 248 adults identified at eight safety net provider sites in Baltimore, Maryland, to contextualize recent findings that described Baltimore's safety net capacity as having more hospital- and intensive service-based interventions, with higher proportions of the population reportedly unable to get care when needed compared with other cities. The average age of respondents was 41.2 years, most (87.3%) were African American, unemployed (75.8%), homeless (57.0%), and with at least one chronic medical problem (77.8%). Almost one half (47.6%) also reported a chronic mental health condition, and 51.2% reported having difficulty accessing health care services in the past. Overall, 76.9% reported accessing additional community sites for daily sustenance needs, with most of these sites community non-profit or faith-based organizations. In the multiple logistic regression model, only individuals with chronic mental health conditions were significantly more likely to report difficulties accessing health care. The lack of a Community Access Program or other structured efforts to facilitate integration of services among providers in Baltimore and an "all-payer" system that reimburses uncompensated care only for hospital admissions are postulated as two structural elements that may contribute to these findings.*

KEYWORDS *Urban poor, Safety net, Health care access, Uninsured.*

INTRODUCTION

The health care safety net in the United States has been described as "intact but endangered." The precarious financial situation of many providers; the changing financial, economic, and social environment in which these providers operate; and

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the highly localized “patchwork” structure of the safety net¹ all contribute to this vulnerability that directly affects the poor and un- and underinsured.

The Institute of Medicine and others define this safety net as “those providers that organize and deliver a significant level of health care and other health-related services to uninsured, Medicaid, and other vulnerable patients,”^{1(p1)} which has come to include community health centers and other targeted clinics, public hospitals, many teaching hospitals, and some care provided in emergency departments and private physician offices.² However, several researchers and policy advocates have also argued that a broader and more inclusive definition of the safety net is appropriate, particularly for vulnerable and special-need population groups. Social health maintenance organizations have historically assumed an inclusive role for community agencies and social supports in the care of frail elderly.^{3,4} Similarly, community-based ancillary services provided in coordination with medical care have been shown in many studies to improve the care of patients with acquired immunodeficiency syndrome (AIDS).^{5–7} Other working examples of this more inclusive model of safety net providers have been reported in maternal and child health care⁸ and other areas.^{9,10} How the safety net is defined is relevant to the current pressures for cost containment and more efficient utilization of services by poor and uninsured persons.

It is in this context that we review here findings from the *Monitoring the Health Care Safety Net*, released by the Agency for Health Research Quality (AHRQ),² which tracks several key, city-specific indicators of need, capacity, and effectiveness of the health safety net. We compare findings for Baltimore, Maryland, with those of six other urban centers with comparable rates of poverty and uninsured. We then present results from a community-based sample of consumers accessing services at one of eight community-based agencies in Baltimore; these results provide some explanation for the findings noted in the AHRQ report.

METHODS

Comparison of Urban Safety Nets in Seven Cities

Using indices compiled in *Monitoring the Health Care Safety Net* prepared by the AHRQ,² seven urban centers were selected based on comparable population sizes and similar rates of poverty and uninsured. The seven cities include Baltimore; Atlanta, Georgia; Chicago, Illinois; Detroit, Michigan; Oakland, California; Philadelphia, Pennsylvania; and Boston, Massachusetts.

Selected safety net indices were organized by demand¹ (overall percentage uninsured and the percentage uninsured who were below 200% of the federal poverty level, number of AIDS cases per 100,000, percentage between the age of 21 and 64 years with a disability; financial support² (extent of Medicaid coverage using a state-level standardized index of income eligibility, Medicaid expenditures per person below 200% poverty, whether there are community health centers in the area, and whether there is an uncompensated care pool); structure of ambulatory care services³ (outpatient department visits divided by the number of admissions to area hospitals, whether there is a Community Access Program [CAP] grant in that city); health care system⁴ (number of hospital admissions and emergency department visits per 1,000 population); and preventable hospitalization rate for those aged 40–64 years⁵ (observed-to-expected hospital discharge ratio adjusted for physician practice style, area income, and race/ethnic composition). Further elaboration on methods used to develop these indices is available elsewhere.² When data were not available for a specific city, either county-specific data or metropolitan service area data were used.

Survey of Baltimore-Based Consumers of Safety Net Services

A total of 248 adults were interviewed at eight community-based organizations in Baltimore City during June and July 2001. The study was conducted as part of the Soros Service Program for Community Health summer program and was funded by the Open Society Institute. The design and implementation of this survey followed the principles of community-based participatory research,¹¹ with a community advisory board composed of members from the community agencies meeting monthly to define survey topics, review the developed questionnaire, and interpret collected data.

Study Subjects Consecutive adults accessing services at the community-based sites were approached on randomly assigned days for interview. After giving verbal consent, the individuals were interviewed on site in a setting as private as possible. Individuals were excluded if they were younger than 18 years or noticeably intoxicated or incoherent and unlikely to be able to provide reliable answers. The overall participation rate was 82%. Data are not available on nonparticipants.

Study Sites The eight interview sites used for this survey were all participating in the Soros Service Program for Community Health, a summer service-learning program for first-year medical students. All sites were not-for-profit, multiservice facilities with an established policy and community reputation for caring for un- and underinsured poor populations in Baltimore City. No sites were affiliated with or owned by area hospitals or health systems or were government owned or operated.

The sites included four community health centers: two sites primarily serving working poor and uninsured families; one serving the human immunodeficiency virus (HIV)/AIDS community; and one serving persons who are homeless. The remaining sites included two soup kitchens, one drop-in center, and one substance abuse outreach center. Overall, these sites serve approximately 21,000 nonduplicated clients annually.

Survey Instrument The survey instrument was developed and approved by the project steering committee and reflected specific issues and concerns they had identified through their interactions with clients. Questions were also used from previously administered surveys specifically designed for this type of urban poor population.¹²⁻¹⁴ Once the survey questions had been agreed on by the committee, they were piloted extensively in the community prior to administration of the survey.

The question domains included demographics, self-reported medical and mental health comorbidities, previous difficulties accessing care, and questions about other sites or service providers providing care, which services they were receiving at those sites, and which additional services they needed. Questions about other sites of care and the services received were text field based so as not to unduly bias or direct their answers. The interview took approximately 20 minutes to complete and was administered in a face-to-face format by the medical student assigned to that site. The interviewers all received an extensive orientation on how to conduct a research survey. They also participated in weekly debriefings in which issues specific to the survey were discussed.

Community Access Sites Sites identified by respondents as places currently accessed for services were verified by cross-referencing the regional United Way directory, a listing of providers supplied by the Baltimore City Health Department, or by the city telephone directory. Based on listed information and telephone queries,

all sites were subsequently categorized as hospital or health system affiliated, a government agency, or a community nonprofit or faith-based organization. Community sites operated by religiously affiliated hospitals were considered health system/hospital affiliated, whereas sites with an independent board and separate nonprofit status that received grants or funding from a hospital were considered community nonprofit or faith-based organizations. We were unable to distinguish reliably between faith-based community organizations and not-for-profit community organizations that often had a strong faith-based organizational backing or record of support, and we subsequently grouped them together.

Services accessed at these sites were broadly categorized as medical care, including both physical and mental health services; substance abuse care; social services, including case management, entitlement program assistance, legal aid, and the like; food assistance; and housing services, including emergency shelters, transitional housing, and rental assistance.

Analyses Two separate analyses are presented for the community-generated data. First, client-specific health care needs, demographics, and sites of care reportedly accessed are presented. Next, the community safety net sites were considered as a unit of analysis, categorizing the sites based on affiliation and associated client-specific characteristics.

Chi-square and Fisher exact test were used for categorical data; analysis of variance was used for continuous data. Multiple logistic regression analyses were conducted for the dependent variables of¹ reporting difficulty accessing medical care and² expected adverse consequences if the care sites were not available. Independent variables considered in the model were age older than 40 years, male gender, homelessness, no health insurance, having a mental or physical health comorbidity, problems accessing social services, accessing two or more sites, and the affiliation of the accessed sites. Stata 6.0 software (College Station, TX) was used for all statistical analyses.

RESULTS

Comparison of Urban Safety Nets in Seven Cities

As shown in Table 1, the range of poverty rates among the seven cities was between 19.4% (Oakland) and 26.1% (Detroit), and the range of uninsured rates was from 13.8% (Philadelphia) to 19.2% (Chicago). The proportion of individuals below 200% of the federal poverty level who were uninsured was more bimodal in its distribution. Approximately one quarter of uninsured persons in Detroit, Boston, and Philadelphia (24.7%–25.4%) were below this income threshold compared with almost 40% of uninsured individuals in Baltimore, Oakland, and Chicago (36.7%–39.6%; not shown in table). Baltimore's index of Medicaid coverage based on income (1.40) was higher (more generous) than all other cities in this cohort (0.90–1.33), and Baltimore's average Medicaid expenditures per person under the age of 65 years who was below 200% of the poverty level was also the highest among the seven cities (Baltimore \$1,490; other cities ranged from \$1,050 for Detroit to \$1,469 for Boston; not shown in table).

Baltimore also had the highest number of AIDS cases (816) per 100,000 population (other cities ranged from 265 for Detroit to 592 for Philadelphia; not shown in table) and the second highest percentage of disabled persons between the ages of 21 and 64 years (Baltimore 28.1%; other cities ranged from 21.9% for Boston to 32.1% for Detroit; not shown in table). Regarding health services utilization, Baltimore

TABLE 1. Urban health care safety net needs and capacities among seven comparable US cities

	% Below poverty	% Uninsured	Medicaid coverage index	Emergency dept. visits per 1,000 population	Hospital admissions	% No usual source of care	% Unable to get care when needed	Preventable hosp. ages 40–64 obs./exp.ratio	CAP
Baltimore	22.9	17.7	1.40	781	284	17.1	19.8	1.260	No
Detroit	26.1	14.4	1.33	369	123	19.1	13.0	1.049	Yes
Boston	19.5	14.2	1.01	569	271	6.5	12.3	1.195	Yes
Philadelphia	22.9	13.8	0.97	453	196	7.8	11.4	1.082	Yes
Oakland	19.4	16.4	1.17	235	88	11.7	9.0	1.004	Yes
Atlanta	24.4	17.3	1.15	399	152	25.3	10.4	1.011	Yes
Chicago	19.6	19.2	0.90	372	149	24.9	10.9	1.248	Yes

Note: CAP, Community Access Program. Data in the table were abstracted from *Monitoring the Health Care Safety Net*, by John Billings and Robin M. Weinick (AHRQ Publication No. 03=0025, August 2003).

% Below poverty, US Census 2000. % Uninsured, 1999–2001 Current Population Survey, 3-year average. Medicaid coverage index, University of California at Los Angeles Center for Health Policy Research. Emergency department visits per 1,000 population, numerator from 1999 American Hospital Association Annual Survey and denominator from 2001 Claritas (1999 interpolated estimate). Hospital admissions, numerator from 1999 American Hospital Association Annual Survey and denominator from 2001 Claritas (1999 interpolated estimate). % No usual source of care, 1999–2000 National Health Interview Survey, 2-year average. % Unable to get care when needed, 1999–2000 National Health Interview Survey, 2-year average. Preventable hospitalizations ages 40–64 observed/expected ratio, patient discharge data, 1999 HCUP. CAP, Health Resources Services Administration.

had the lowest ratio of outpatient visits to admissions (9.0; other cities ranged from 9.4 for Atlanta to 16.6 for Boston; not shown in table), the highest number of emergency department visits (781) and hospital admissions (284) per 1,000 population, and the highest ratio of observed to expected preventable hospitalizations for ages 40–64 years (1.260). Although 17.1% of Baltimoreans reporting no source for usual care was midrange compared with the other cities (low was Boston at 6.5%; high was Atlanta at 25.3%), 19.8% of individuals reported they were unable to get care when needed. This was substantially higher than the other cities (range 9.0–13.0). Baltimore was also the only city without a CAP grant in its area.

Survey of Baltimore-Based Consumers of Safety Net Services

Demographics As shown in Table 2, the average age of respondents in the community-based survey was 41.2 years; the majority were African American (87.3%) and male (66.3%). Overall, 37.2% had less than a 12th grade education, only one quarter (24.2%) were employed at the time of the interview, and over half (57.0%) were homeless. The average annual income from work, entitlements, or family support was \$7,282, and 32.7% had health insurance, typically Medicaid.

Over three fourths of all respondents (77.8%) reported at least one chronic physical health condition, and 22.6% reported three or more conditions. The top three conditions reported were HIV/AIDS (38.3%), arthritis (29.0%), and hypertension (29.0%). Almost half the sample reported a chronic mental health condition (47.6%), and 9.7% reported three or more co-occurring mental health conditions. Overall, 69.7% of respondents reported they were currently prescribed a medication, and 38.2% reported having been prescribed three or more medications.

Self-Identified Sites for Care Survey respondents identified a total of 174 safety net sites currently accessed for medical and social service needs; only 62 (35.6%) sites were identified by more than one respondent. Overall, 45 (25.9%) sites were affiliated with hospitals or health systems; 92 (52.9%) sites were community non-profit or faith-based organizations; and 37 (21.3%) sites were part of a city or state agency. Among hospital- or health system-affiliated sites, 46.7% were identified as providing medical or mental health care, 22.2% social services, 15.6% substance abuse treatment, and 11.1% food assistance. Overall, 13.0% of community non-profit/faith-based sites were providing medical or mental health care, 23.9% social services, 34.8% food assistance, 7.6% substance abuse treatment, and 18.5% housing support. Among government agencies, 21.6% were providing health services, 24.3% social services, 32.4% substance abuse treatment, 13.5% housing, and one site was providing food assistance (Figure).

Overall 25.4% of respondents reported accessing three or more services at the interview site, most commonly medical services (50.4%), followed by substance abuse treatment (25.0%) and food assistance (25.0%). Although most respondents (76.9%) also identified additional sites that they were accessing, 43.1% did not know of an alternative site for the services they were receiving at the place of interview (Table 2). Those persons reporting a chronic mental health condition were significantly more likely to report accessing two or more sites (76.9% vs. 62.8%, $P=.01$), with no other differences noted. There were no significant differences among respondents accessing hospital-affiliated, community nonprofit/faith-based, or government-run sites (Table 3).

TABLE 2. Client characteristics

Characteristic	
Race (African American)	87.3%
Gender (Male)	66.3%
Education (<12th grade)	37.2%
Employment (temp/PT/FT)	24.2%
Public assistance	
SSDI	25.4%
Food stamps	24.2%
Average annual income (mean)	\$7,282
Homeless	57.0%
Health insurance	32.7%
Chronic medical condition	77.8%
>3 conditions	22.6%
HIV/AIDS	38.3%
Arthritis	29.0%
Hypertension	29.0%
Chronic mental health condition	47.6%
>3 conditions	9.7%
Currently prescribed medications	69.7%
>3 medications	38.2%
Number of different services received at interview site: >3	25.4%
Types of services accessed at interview site	
Medical	50.4%
Mental health	15.3%
Substance abuse treatment	25.0%
Social work/case management	23.8%
Food assistance	25.0%
Housing assistance	13.3%
Legal assistance	3.2%
Proportion currently accessing additional sites for basic sustenance needs	76.9%
Proportion not knowing of alternative sites for care or services currently received	43.1%
Proportion reporting difficulty accessing health care services in the past	51.2%
Dental care	28.6%
Primary care	22.2%
Prescription drugs	18.6%
Specialty care	13.3%
Drug/alcohol treatment	7.7%
Mental health care	6.9%
Principal reason for inability to access health care in the past: no health insurance/cost	63.8%

Note: N = 248; mean age 41.2 years (SD 9.1).

Difficulties Accessing Care Over half the sample (51.2%) reported having difficulty accessing health care services in the past, and 65.0% reported they expected an adverse outcome or event would result, including being homeless, experiencing a deterioration in health, or dying, if the safety net site where the interview was taking place was not available to them. Dental care was the most commonly reported service need (28.6%), followed by primary medical care (22.2%), prescription drugs (18.6%), specialty care (13.3%), drug/alcohol treatment (7.7%), and mental health care (6.9%) (Table 2)

FIGURE. Services received by safety net organization affiliation.

TABLE 3. Demographic and need factors associated with accessing sites affiliated with a hospital/health system or faith-based organization

Characteristic	Affiliation			P
	Hospital/health system % (n = 45)	Faith-based / charitable group% (n = 92)	Government % (n = 37)	
Age	41.0 (SD 9.5)	41.5 (SD 8.3)	40.4 (SD 7.9)	.80
African American	82.9	88.5	89.2	.63
Male	55.8	69.6	67.6	.28
Homeless	59.1	63.3	59.5	.86
No health insurance	52.3	71.0	70.3	.08
Chronic medical problem	77.3	73.1	81.1	.61
Chronic mental health problem	54.6	51.6	46.0	.74
Prescription drugs	76.2	70.0	73.0	.76
Previous problems accessing medical care	38.6	52.7	51.4	.29
Previous problems accessing social services	52.3	53.8	48.7	.87

As shown in Table 4, most respondents having problems with health care access and reporting an expected adverse consequence were male, African American, homeless, without health insurance, with a physical health comorbidity, and taking prescription medications. The majority also reported difficulties accessing social service agencies. However, over two thirds reported they accessed two or more sites for their needs, with most of these sites community nonprofit or faith-based organizations. In the multiple logistic regression model, only having a mental health

TABLE 4. Client-identified problems accessing health care and self-reported consequences if safety net site was not available

Characteristic	Problems with access (%)	OR/95% CI	Adverse consequences	OR/95% CI
Age ≥ 40 years	46.5	1.86 0.89–3.87	47.6	1.51 0.72–3.14
African American	86.7	1.65 0.54–5.00	85.5	0.83 0.25–2.65
Male gender	62.7	0.77 0.35–1.75	63.7	0.68 0.30–1.57
Homeless	64.5	1.99 0.84–4.69	56.9	0.79 0.32–1.93
No health insurance	74.8	1.86 0.81–4.31	72.8	2.15 0.93–4.98
Mental health comorbidity	53.5	2.74 1.26–5.98	50.3	1.04 0.48–2.29
Physical health comorbidity	78.7	1.15 0.46–2.84	79.6	1.50 0.60–3.76
Currently prescribed medication	65.3	0.56 0.23–1.32	72.6	1.64 0.71–3.83
Problems accessing social services	61.4	1.78 0.85–3.73	57.1	1.72 0.79–3.72
Problems accessing medical services	—	—	55.8	1.05
Two or more safety net sites accessed	66.1	0.71 0.5–9.43	67.6	0.48–2.31 0.94
Affiliation of safety net sites accessed				
Hospital affiliated	20.0	1.81 0.73–4.51	25.7	0.99 0.41–2.42
Nonprofit/faith-based	57.7	1.85 0.85–4.01	50.5	0.87 0.39–1.97
Government-affiliated	22.4	0.93 0.39–2.25	23.8	0.78 0.32–1.91

comorbidity was significant (odds ratio [OR] 2.74; 95% confidence interval [CI] 1.26–5.98) for having difficulty accessing health care services; no significant variables were identified when expected adverse consequences was the dependent variable. There was no difference in the proportion reporting an expected adverse consequence based on whether the interview took place at a community clinic or social services agency.

DISCUSSION

Contrasted with six comparable cities, Baltimore spends more money per low-income person on care that is more often emergency department (and hospital inpatient) based. At the same time, it has the highest proportion of respondents reporting they could not get health care when needed and the highest rate of preventable hospitalizations. These findings also were borne out in the community sample, for which

over 75% of individuals accessed two or more sites for their care needs, yet over half reported difficulty accessing medical care when needed, 43% did not know of an alternative site, and 65% predicted an adverse event if the community agency where the interview took place was not available.

Taken together, these findings suggest a disconnection between resources allocated to the care of poor and vulnerable populations and the effectiveness and coordination of those services, with a high level of self-perceived vulnerability resulting. Previous research demonstrated a clinical benefit from integrating social services and ancillary care with the medical model.³⁻¹⁰ However, the findings suggest that the constellation of providers and agencies accessed in Baltimore are not keeping individuals out of emergency departments or from being admitted to the hospital. The significance of being the only city without a CAP grant, a program funded by the Health Resources and Services Administration that builds on existing capacity to help health providers develop integrated systems for the uninsured and underinsured, is unclear.

The findings from both the AHRQ report and the community survey also underscore the degree of need within this population. Baltimore had the highest number of AIDS cases per 100,000 population, and 28.1% of its working age adults were disabled. In the community survey, 77.8% reported at least one chronic physical health condition, 47.6% reported a mental health condition, and 69.7% were currently prescribed a medication, yet only 32.7% reportedly had health insurance. This is significant given the pivotal role insurance appears to play in facilitating coordinated care. The Institute of Medicine report specifically identified poor integration of services and the destabilizing effects of a rapid shift from traditional Medicaid to Medicaid managed-care products as threats to the viability of a community's safety net.¹ A study by Lipson and Naierman found that many safety net providers were responding to demands of Medicaid managed care by vertically and horizontally integrating their services.¹⁵ Similarly, Kwait et al., in their study of 30 HIV providers in Baltimore City (who rely on Ryan White federal funding for much of their care) noted high levels of coordination and communication between providers.¹⁶ In contrast, for uninsured individuals, there is less incentive and perhaps tacit disincentive to redirect care to community agencies. Maryland reimburses area hospitals for uncompensated inpatient care through the state Health Services Cost Review Commission "all-payer" system, which sets inpatient rates based on projected bad debt and charity care levels at each hospital.¹⁷ Comparable reimbursements by the agency do not exist for community-based primary or preventive care.

From a policy perspective, the combination of restricted Medicaid eligibility that excludes the majority of the chronically ill persons identified in this community survey and an uncompensated care reimbursement strategy that is limited to inpatient services creates an environment in which disconnected primary and preventive services and high rates of preventable hospitalizations for the uninsured are the outcome. Short of universal health coverage or a significant expansion of Medicaid coverage, reimbursement incentives that extend beyond categorically needy population groups (i.e., homeless persons, HIV/AIDS) and emphasize community-based primary and preventive health care and case-management models that incorporate nonmedical social services are needed. The potential for proactive policies of this kind to reduce emergency department and hospitalization rates is suggested by the data and needs to be explored further as added rationale for this approach.^{18,19}

The large number of provider sites identified and the scope of services accessed at these sites reflects positively on the collective response of the local health care system, government agencies, and the community-based nonprofit sector to this need. Community-based organizations have traditionally played a critical and not-always-appreciated role in the health and social well-being of urban, inner-city poor persons²⁰ and represented over one half of all the sites identified. Hospital and health-system affiliated sites were identified as resources not only for health care, but also for social services, food, and even housing.^{21,22} The array of agencies and providers identified by this sample reflects an attribute and strength of urbanization and the urban community as defined by Leviton et al.²³ and Vlahov and Galea²⁴ and support the community capacity arguments made by Kretzmann and McKnight in their work in community asset mapping.²⁵

There are several limitations to this study. First, the data presented are self-reported. Actual utilization was not validated or verified and is subject to recall bias. However, our confirmation process of the identified sites does suggest that the respondents were familiar with those providers listed. Similarly, we cannot comment on the pattern or temporal relationship of how the identified networks were utilized. It is possible that some sites were only accessed in the distant past and instead reflect sequential utilization patterns rather than one that is co-occurring. As mentioned, we cannot comment on any outcomes associated with the identified safety networks. Finally, those individuals interviewed in our community sample were already engaged in services. It is unclear whether a comparable sample of individuals not encountered at provider sites would identify similar issues, needs, or experiences.

In summary, these data represent a unique view of the urban network of safety net providers accessed by a very poor and medically vulnerable population. The scope and breadth of these networks reflect the strength of urban communities and neighborhood capacities. However, the findings also suggest opportunities for greater coordination and cooperation among provider groups and the importance of broad-based support.

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