Patient Perceptions of In-home Urgent Care via Mobile Integrated Health

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ABSTRACT

OBJECTIVES: Emergency department (ED) crowding poses a severe public health threat, and identifying acceptable means of treating medical conditions in alternative sites of care is imperative. We compared patients' experiences with in-home urgent care via mobile integrated health (MIH) vs urgent care provided in EDs.

STUDY DESIGN: Survey, completed on paper, online, or by telephone. We surveyed all patients who received MIH care for an urgent health problem (n = 443) and consecutive patients who visited EDs for urgent care (n = 1436).

METHODS: Study participants were members of a managed care plan who were dually eligible for Medicare and Medicaid, 21 years or older, and treated either by MIH or in an ED for nonemergent conditions around Boston, Massachusetts, between February 2017 and June 2018. The survey assessed patients' perceptions of their urgent care experiences.

RESULTS: A total of 206 patients treated by community paramedics and 718 patients treated in EDs completed surveys (estimated 66% and 62% response rates, respectively). Patients treated by MIH perceived higher-quality care, more frequently reporting "excellent" (54.7%) or "very good" (32.4%) care compared with ED patients (40.7% and 24.3%, respectively; $P < .0001$), and were significantly more likely to report that decisions made about their care were "definitely right" compared with patients treated in the ED (66.1% vs 55.6%; $P = .02$).

CONCLUSIONS: Patients appear satisfied with receiving paramedic-delivered urgent care in their homes rather than EDs, perceiving higher-quality care. This suggests that in-home urgent care via MIH may be acceptable for patients with nonemergent conditions.

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Emergency departments (EDs) are "an impressive public health success story," according to the National Academy of Medicine, providing emergent care for traumatic, cardiovascular, and cerebrovascular events that saves lives and limits long-term disability.[1] Throughout the COVID-19 pandemic and other times of crisis, EDs also serve as the safety net, particularly for persons lacking a usual source of or timely access to care.[1] Consequently, EDs are increasingly crowded with patients with emergent and nonemergent needs, raising the imperative to identify approaches for providing care in alternative settings.

Mobile integrated health and community paramedic (MIH/CP) programs offer an opportunity to expand emergency medical service providers' scope of practice to evaluate and treat patients within their homes or institutional residences (eg, nursing homes) whenever appropriate rather than solely during transport to EDs. Countries around the world employ MIH/CP programs to effectively deliver care.[2-9] However, MIH/CP has not been widely implemented in the United States and is typically used to target specific health conditions (eg, heart failure) or narrowly circumscribed populations (eg, frequent 911 callers, underserved rural areas).

We developed an MIH/CP urgent care model that aimed to reduce preventable ED use and improve urgent, nonemergent care experiences. The program sends specially trained paramedics to evaluate and treat patients with urgent care problems between 6 PM and 2 AM within their homes or institutional residences. Our MIH/CP program is a collaboration between a local ambulance service provider and a nonprofit health insurer–managed health care delivery system in Massachusetts providing fully integrated care (from tertiary care to long-term services and support) to its membership, most of whom are eligible for both Medicare and Medicaid. At the time of this study, our program operated under a Special Project Waiver authorized by the Massachusetts Department of Public Health Office of Emergency Medical Services, covering a catchment area surrounding greater Boston.

The purpose of this study was to learn about how patients perceive their urgent care experiences, comparing the views of persons receiving urgent care via an MIH/CP program vs perceptions of

persons visiting EDs. Because this was a new MIH/CP program, we also aimed to understand how patients experienced various aspects of their services. It is important to assess patients' comfort with receiving care in their residences rather than receiving transportation to EDs. If patients express reluctance to receiving in-home care, the MIH/CP approach to urgent care may not offer a viable alternative to ED-based care.

TAKEAWAY POINTS

- Patients receiving paramedic-delivered urgent care appear to be more satisfied than patients receiving care in emergency departments.
- The majority of patients treated by community paramedics also reported that they would prefer future urgent care in the home with paramedics.
- Mobile integrated health and community paramedicine present a patient-accepted alternative to emergency department–based urgent care.

METHODS

This research was reviewed and approved by the institutional review boards of both Mass General Brigham (Boston, MA) and University of Massachusetts Boston. It was funded by Patient-Centered Outcomes Research Institute.

Survey Instruments

No existing survey instruments served our purposes, and we therefore developed our own questionnaires. We involved patient stakeholders in survey design, working closely with the Disability Policy Consortium in Malden, Massachusetts, an organization of disability rights activists promoting inclusion, independence, and empowerment of all individuals with disabilities. We held in-depth, open-ended conversations with 2 lead Consortium staff members, one representing persons with significant physical disability and the other representing persons in recovery from serious mental illness, about urgent care experiences of persons with complex health needs. Based on those interviews, we designed a semistructured interview protocol to gather in-depth experiential information from Commonwealth Care Alliance members who had recently received urgent care services. We enlisted Disability Policy Consortium staff members to conduct, audio-record, and transcribe interviews, ultimately conducting 4 interviews with persons treated in their homes and 5 persons treated in EDs. The researchers conducted thematic analyses of these transcripts to identify topics for survey questions.

We worked with experts at the Center for Survey Research at the University of Massachusetts Boston to develop a survey that would require no more than 10 to 15 minutes to complete. We created distinct but overlapping surveys for each group in order to limit respondent burden and minimize skip patterns. Under supervision from the researchers, staff conducted cognitive testing of the draft instruments, interviewing 3 paramedic-treated and 4 ED-treated patients. We revised the draft surveys based on the cognitive testing and created English-language and Spanish-language versions.

Survey Samples

We interviewed Commonwealth Care Alliance members who were dually eligible for Medicare and Medicaid, were 21 years or older, spoke English or Spanish, and had recently (within the prior week) received urgent care services from either community paramedics or an ED. Some members experience more frequent urgent health problems and consequently have more frequent urgent care visits. To reduce respondent burden among those patients with multiple urgent care visits during the study period, we screened all candidate cases against individuals already in the sample following 2 rules: (1) an individual could not be surveyed more than once within a 2-month window; and (2) an individual could not be surveyed more than twice. We identified patients for surveys within 1 week of their urgent care visits.

Within these parameters, we surveyed all persons receiving MIH/CP visits, using paramedic logs. Because members did not always notify Commonwealth Care Alliance when they visited EDs, we used the commercial PatientPing software to identify plan members who had visited the ED during the previous day.[10] Before referring candidate cases, clinicians screened each PatientPing-identified encounter to identify urgent care visits that MIH/CP might otherwise have handled (ie, eliminate true emergency and nonurgent care).[11]

Survey Procedures

We conducted the survey from February 2017 through June 2018. For the fewer than 1% with a valid email address, we emailed the survey description and invitation, promising a $5 incentive for survey completion. For other candidates, we sent a first-class envelope containing an invitation letter, the paper questionnaire, a business reply envelope, and a $5 incentive. If surveys were not returned within 10 to 14 days, we began telephoning survey candidates, using bilingual interviewers for Spanish speakers. On average, our interviewers made 6 to 8 attempts until the interview was completed or the case was deemed ineligible (eg, individual deceased, too sick to participate). When candidates declined participation, our interviewers attempted to identify reasons and, as appropriate, obtain participation by scheduling a convenient interview time.

Response Rates

Not counting ineligible duplicate cases, there were 443 MIH/CP cases and 1436 ED cases targeted for surveys. We received 206 completed MIH/CP surveys and 718 ED surveys (**Table 1**). Among patients treated by community paramedics, 8% refused participation, 4% had died, and 65% were hospitalized or too ill to participate. Among ED referrals, 10% refused participation, 3% had died, and 66% were hospitalized or too ill to participate. In calculating response rates,

TABLE 1. Demographic Characteristics of Survey Respondents by MIH/CP or ED Treatment

Demographic characteristic	Treatment category: MIH/CP n=206	Treatment category: ED n=718	Total N=924	*P*
Age				<.0001
n	202	701	903	
Mean (SD) in years	66 (17)	58 (14)	60 (15)	
	n (%)	n (%)	n (%)	
Sex				.7282
Male	71 (34.6%)	238 (33.3%)	309 (33.6%)	
Female	134 (65.4%)	476 (66.7%)	610 (66.4%)	
Race				.0003
White	61 (52.1%)	202 (59.1%)	263 (57.3%)	
Black or African American	34 (29.1%)	41 (12.0%)	75 (16.3%)	
Other[a]	21 (17.9%)	49 (14.3%)	70 (32.2%)	
Hispanic/Latino				.0005
Yes	15 (13.3%)	101 (29.9%)	116 (25.7%)	
Education				.0809
Eighth grade or less	34 (17.3%)	97 (13.9%)	131 (14.6%)	
Some high school but did not graduate	27 (13.7%)	97 (13.9%)	124 (13.8%)	
High school or GED	55 (27.9%)	203 (28.9%)	258 (28.7%)	
Some college or 2-year degree	46 (23.4%)	216 (30.8%)	262 (29.1%)	
4-year college graduate	16 (8.1%)	54 (7.7%)	70 (7.8%)	
More than 4-year college degree	19 (9.6%)	35 (5.0%)	54 (6.0%)	
Language				.0036
English	188 (91.3%)	596 (83.0%)	784 (84.8%)	
Spanish	18 (8.7%)	122 (17.0%)	140 (15.2%)	
Survey mode				.0002
Mail	89 (43.2%)	376 (52.4%)	465 (50.3%)	
Phone	112 (54.4%)	341 (47.5%)	453 (49.0%)	
Web	5 (2.4%)	1 (0.1%)	6 (0.6%)	

ED, emergency department; GED, General Educational Development; MIH/CP, mobile integrated health and community paramedic.

[a]Other includes Asian, Native Hawaiian/Pacific Islander, American Indian/Alaska Native, and other.

we included in the denominator a proportion of cases for which we could not determine eligibility. We estimated response rates at 66% for MIH/CP cases and 62% for ED cases.[12]

Analysis

We conducted all analyses using SAS software version 9.4 (SAS Institute). We used descriptive statistics to look at frequencies of responses. Comparisons were done via χ^2 test (categorical) and 2-sample *t* test (continuous) as appropriate.

RESULTS

Table 1 shows patients' demographic characteristics for the 206 MIH/CP visits and 718 ED visits. Patients treated by community paramedics were significantly older than patients seen in the ED, with a mean (SD) age of 66 (17) vs 58 (14) years ($P < .0001$). MIH/CP patients were also significantly more likely to be Black or African American (29.1% vs 12.0%; $P < .0001$). There were no significant differences between MIH/CP and standard care patients' education levels.

In-home Urgent Care Experiences

Table 2 reports responses from all 206 patients treated by MIH/CP, then separately for patients who were (23.8%) or were not (59.7%) ultimately transported to the ED. The 34 respondents with missing variables had difficulty recalling the event. Nearly all patients treated by community paramedics felt the paramedic explained their health problem in an understandable way (94.5%) and treated them with courtesy and respect (99.4%). MIH/CP-treated patients reported that the paramedic did an excellent (54.6%) or very good (32.8%) job caring for their health problem. Patients ultimately transported to the ED reported no statistically significant difference in their perception of how well the paramedic performed in caring for their health problem compared with those patients who received all treatment in their homes ($P = .07$). Furthermore, among patients ultimately transported to the ED, almost all (97.9%) felt that the paramedic understood their health problem. More patients transported to EDs (15.2%) reported that the paramedic did not explain things about their health care problem in a way they could understand compared with patients not transported to EDs (1.7%; $P < .0006$).

ED Urgent Care Experiences

Table 3 shows responses from the 718 ED patients about their urgent care experiences. The majority of patients receiving urgent care in EDs felt that the ED staff explained their health problem in an understandable way (86.3%) and treated them with courtesy and respect (92.7%).

Patients treated in EDs reported moderate levels of anxiety prior to care, with 38.0% reporting that they were very anxious (19.0%) or extremely anxious (19.0%) while awaiting care. After arriving in the ED, the vast majority (93.0%) of patients reported that the ED doctors and nurses focused on their health problem rather than their disability (7.0%).

Perceptions of MIH/CP Compared With ED Care

Table 4 shows results for questions answered by both MIH/CP and ED patients. Patients treated by community paramedics perceived higher-quality care, more frequently reporting "excellent" (54.7%) or "very good" (32.4%) care compared with ED patients (40.7% and 24.3%, respectively; $P < .0001$). Further, patients treated by community

paramedics were significantly more likely to report that decisions made about their care were "definitely right" compared with patients treated in the ED (66.1% vs 55.6%; $P = .02$). Patients treated by community paramedics and patients treated in EDs were asked to respond with their views on the MIH/CP program or a hypothetical MIH/CP urgent care program (for those in the standard care group who did not have the option of a community paramedic visit). Patients treated by community paramedics reported that being treated in an ED would be more stressful (66.7%) than being treated at home (7.4%), whereas ED patients hypothesized rates of 44.0% and 13.8%, respectively ($P < .0001$). Significantly more (67.2%) MIH/CP patients than patients receiving ED care (35.9%; $P < .0001$) would prefer future in-home urgent care by community paramedics. Patients treated by community paramedics were more likely than patients receiving ED care to say that in-home treatment by a paramedic saved more time than going to the ED (73.6% vs 53.1%; $P < .0001$) and less likely to say that in-home treatment would also carry a higher risk of becoming sicker (9.2% vs 24.1%; $P < .0001$).

TABLE 2. Experiences of Patients Treated by MIH/CP

Question	MIH/CP intervention (n = 206) n (%)	Sent to ED (n = 49) n (%)	Not sent to ED (n = 123) n (%)	*P*
Was there someone with you that night, like a friend, family member, or personal care attendant?				
Yes	107 (63.7%)	26 (55.3%)	81 (66.9%)	.1597
No	61 (36.3%)	21 (44.7%)	40 (33.1%)	
How anxious, if at all, did you feel while you waited for the paramedic to arrive?				
Not at all anxious	46 (27.5%)	11 (23.9%)	34 (29.1%)	.3100
Not very anxious	37 (22.2%)	6 (13.0%)	30 (25.6%)	
Somewhat anxious	52 (31.1%)	18 (39.1%)	32 (27.4%)	
Very anxious	26 (15.6%)	9 (19.6%)	17 (14.5%)	
Extremely anxious	6 (3.6%)	2 (4.3%)	4 (3.4%)	
How angry, if at all, did you feel while you waited for the paramedic to arrive?				
Not at all angry	146 (87.4%)	43 (91.5%)	103 (85.8%)	.2898
Not very angry	8 (4.8%)	1 (2.1%)	7 (5.8%)	
Somewhat angry	9 (5.4%)	1 (2.1%)	8 (6.7%)	
Very angry	3 (1.8%)	1 (2.1%)	2 (1.7%)	
Extremely angry	1 (0.6%)	1 (2.1%)	0 (0.0%)	
How much pain, if any, were you in while you waited for the paramedic to arrive?				
None at all	39 (23.2%)	13 (27.1%)	26 (21.7%)	.1660
Not very much	28 (16.7%)	4 (8.3%)	24 (20.0%)	
Some	46 (27.4%)	17 (35.4%)	29 (24.2%)	
A great deal	55 (32.7%)	14 (29.2%)	41 (34.2%)	
Did the paramedic understand your health problem?				
Yes	165 (98.2%)	46 (97.9%)	119 (98.3%)	.8348
No	3 (1.8%)	1 (2.1%)	2 (1.7%)	
How well do you think the paramedic did in caring for your health problem that night?				
Excellent	93 (54.7%)	22 (45.8%)	71 (58.2%)	.0730
Very good	55 (32.4%)	18 (37.5%)	37 (30.3%)	
Good	14 (8.2%)	7 (14.6%)	7 (5.7%)	
Fair	6 (3.5%)	0 (0.0%)	6 (4.9%)	
Poor	1 (0.6%)	1 (2.1%)	0 (0.0%)	
Very poor	1 (0.6%)	0 (0.0%)	1 (0.8%)	
Did the paramedic have the medication or equipment on their truck needed to treat your health problem?				
Yes	130 (81.8%)	33 (73.3%)	97 (85.1%)	.0838
No	29 (18.2%)	12 (26.7%)	17 (14.9%)	
If not, was the paramedic able to go out and get the medication or equipment needed to treat your health problem?				
Yes	8 (24.2%)	3 (27.3%)	5 (22.7%)	.7739
No	25 (75.8%)	8 (72.7%)	17 (77.3%)	
Did the paramedic explain things about your health problem in a way you could understand?				
Yes	156 (94.5%)	39 (84.8%)	117 (98.3%)	.0006
No	9 (5.5%)	7 (15.2%)	2 (1.7%)	
Did the paramedic treat you with courtesy and respect?				
Yes	169 (99.4%)	47 (100.0%)	122 (99.2%)	.5353
No	1 (0.6%)	0 (0.0%)	1 (0.8%)	

ED, emergency department; MIH/CP, mobile integrated health and community paramedic.

DISCUSSION

Patients with complex health and socioeconomic needs appear more satisfied receiving paramedic-delivered urgent care treatments in their homes and institutional residences rather than in EDs. They also perceived higher-quality care compared with the ED, with nearly 9 of 10 patients treated by community paramedics reporting excellent or very good quality care.

The majority of patients treated by community paramedics also reported that they would prefer future urgent care in the home with paramedics, should the need arise. Interestingly, when patients who received ED care for their urgent need were presented with a hypothetical MIH/CP urgent care program, far fewer (nearly one-third) expressed a similar preference. This difference is striking for 2 reasons. First, among the general population of patients who have received recent urgent care in an ED, more than one-third speculated they would want a hypothetical in-home model rather than ED-based care. This suggests that patients are open to receiving urgent care in alternative

TABLE 3. Standard Care Patient Experiences

Standard care survey questions	Standard care (n = 718) n (%)
Did you take an ambulance to the ED?	
Yes	284 (52.3%)
No	259 (47.7%)
How anxious, if at all, did you feel while you waited for the ambulance?	
Not at all anxious	51 (21.1%)
Not very anxious	32 (13.2%)
Somewhat anxious	67 (27.7%)
Very anxious	46 (19.0%)
Extremely anxious	46 (19.0%)
How angry, if at all, did you feel while you waited for the ambulance?	
Not at all angry	186 (74.7%)
Not very angry	31 (12.4%)
Somewhat angry	15 (6.0%)
Very angry	10 (4.0%)
Extremely angry	7 (2.8%)
How much pain, if any, were you in while you waited for the ambulance?	
None at all	47 (18.6%)
Not very much	22 (8.7%)
Some	67 (26.5%)
A great deal	117 (46.2%)
Did the ambulance EMTs treat you with courtesy and respect?	
Yes	251 (97.3%)
No	7 (2.7%)
Overall, how satisfied were you with your care from the ambulance EMTs?	
Extremely satisfied	137 (54.4%)
Very satisfied	94 (37.3%)
Somewhat satisfied	12 (4.8%)
Not very satisfied	4 (1.6%)
Not at all satisfied	5 (2.0%)
After you arrived at the ED, about how many minutes did you have to wait to receive care for your health problem?	
Mean (SD)	30 (44)
Did the doctors and nurses focus on the health problem that brought you to the ED that night or did they focus on your age or any disability that you have?	
Focused on my health problem	449 (93.0%)
Focused on my disability	34 (7.0%)
Did doctors, nurses, and other hospital staff explain things about your health problem in a way you could understand?	
Yes	461 (86.3%)
No	73 (13.7%)
During your time in the ED, did the doctors, nurses, and other hospital staff treat you with courtesy and respect?	
Yes	498 (92.7%)
No	39 (7.3%)

ED, emergency department; EMT, emergency medical technician.

settings to the ED. Second, once patients experienced the MIH/CP program, an additional third of patients preferred the alternative to the standard care model. Collectively, this demonstrates that there is both a desire for and satisfaction with the provision of urgent care in alternative settings.

MIH/CP programs are poised to meet this demand and offer opportunities to potentially avoid preventable ED transports and associated hospital admissions. Using Medicare claims from 2005-2009 and linking ambulance transports with ED diagnoses, Alpert and colleagues estimated that 15.6% of 911 emergency medical service (EMS) transports for Medicare beneficiaries were for low-acuity conditions that could have been treated outside EDs. These patients generated slightly more than $1 billion annually in Medicare costs; managing these patients in lower-intensity settings could save an estimated $560 million annually.[13] Similarly, Weinick and colleagues estimated that 13.7% to 27.1% of persons across all age ranges seen at EDs could appropriately receive care at freestanding urgent care centers or retail clinics, resulting in concomitant health care system cost savings that would likely only be further compounded with the implementation of MIH/CP programs.[14]

Existing MIH/CP programs in the United States have not been rigorously evaluated among a wide population.[15,16] Programs that have been studied are reducing ED use (one by 58.2% among frequent 911 callers), generally within narrowly defined populations.[17-19] One MIH/CP program in Houston, Texas, found a 56% reduction in transports to the ED for nonurgent, primary care–related complaints and found no statistical difference in mortality or patient satisfaction.[20] A community paramedic program sponsored by Northwell Health in New York published an observational study of nearly 1600 patients who reported unanimous satisfaction but no further detail regarding patients' perceptions or experiences.[21]

Our data offer insight into why patients who experienced care from community paramedics prefer the alternative care model to ED care. Patients treated by community paramedics believed that in-home treatment saved them time compared with going to the ED and that in-home treatment carried a lower risk of their illness worsening. Overall, patients who experienced the program perceived in-home care as less burdensome than ED-based care. There is strong evidence regarding the negative impact of ED crowding on clinical outcomes, mortality rates, treatment times, and rates of patients leaving against medical advice without having received treatment.[22,23] The long wait times of crowded EDs and impaired communication with ED staff reduce patient satisfaction with ED care.[24-26] As such, crowded EDs can be perceived as uncomfortable, inefficient, and even dangerous places to obtain care.

Increasingly, EDs are used as a timely way to access care. The causes of urgent care needs are diverse, ranging from mild trauma to exacerbations or complications of acute and chronic physical and mental health conditions. Some populations are more prone to experience urgent care needs than others due to demographic factors (especially older age), the extent and nature of underlying physical and mental health conditions, attributes relating to

"physiologic reserve" (eg, frailty, disability), and other risk factors. Medicaid recipients use EDs for nonurgent care 4 times more often than uninsured Americans. As the US population grew 12% from 1993 to 2003, ED use rose 26%.[1] Based on the 2011 National Hospital Ambulatory Medical Care Survey, just 10.7% of ED visits were for emergencies, 42.3% required urgent care, 35.5% required semiurgent care, and 66.6% were told to seek follow-up care with a physician or clinic.[27] It is imperative to better match patients' clinical needs with the appropriate care setting in order to combat the issue of ED crowding.

Historically, CMS and other payers would not reimburse out-of-hospital care (eg, assessments, treatments) without bundling patient transport to EDs.[28] As such, EMS systems grew to depend more heavily on ED transport for even nonemergent conditions to support their operations.[1,29,30] Recognizing the value of an expanded role for paramedics even before the COVID-19 pandemic, in August 2019 CMS announced the Emergency Triage, Treat, and Transport model, a 5-year payment model aimed at providing greater flexibility to ambulance teams to address emergency health care needs.[31] This change expands the historic requirement that patients who are evaluated by paramedics must be transported to EDs and further provides a framework to develop MIH/CP programs.

Our findings suggest a promising paramedic-based urgent care alternative that would be acceptable to complex, high-cost patients. Although future research must determine whether longer-term clinical outcomes between an MIH/CP urgent care program and standard ED care are comparable, the response from patients raises the prospect that nonemergent care can be treated in alternative environments with ultimate improvements to patient satisfaction.

TABLE 4. Patient Follow-up and Preferences

Follow-up and preference	MIH/CP intervention n (%)	Standard care n (%)	*P*
How well do you think the paramedics/ED did in caring for your health problem that night?			
Excellent	93 (54.7%)	220 (40.7%)	<.0001
Very good	55 (32.4%)	131 (24.3%)	
Good	14 (8.2%)	89 (16.5%)	
Fair	6 (3.5%)	63 (11.7%)	
Poor	1 (0.6%)	15 (2.8%)	
Very poor	1 (0.6%)	22 (4.1%)	
Looking back on that night, do you think the decisions made about your care were right?			
Definitely	125 (66.1%)	378 (55.6%)	.0183
Probably	49 (25.9%)	194 (28.5%)	
Probably not	10 (5.3%)	63 (9.3%)	
Definitely not	5 (2.6%)	45 (6.6%)	
For these next questions, please think about a health problem like the one you had that night and what is different about being treated at home by a paramedic instead of going to the ED for that problem. If you had a problem like that again, where would you prefer to be taken care of?			
Prefer to be taken care of by a paramedic at home	131 (67.2%)	250 (35.9%)	<.0001
Prefer to be taken care of in the ED	33 (16.9%)	298 (42.8%)	
Do not have a preference	31 (15.9%)	149 (21.4%)	
Which do you think would increase the chance that you would get sicker?			
Higher chance of getting sicker being treated by a paramedic at home	16 (9.2%)	152 (24.1%)	<.0001
Higher chance of getting sicker going to the ED	66 (37.9%)	169 (26.7%)	
About the same chance of getting sicker	92 (52.9%)	311 (49.2%)	
Which do you think is more stressful?			
Treated at home by a paramedic is more stressful	14 (7.4%)	91 (13.8%)	<.0001
Going to the ED is more stressful	126 (66.7%)	291 (44.0%)	
Both are equally stressful	49 (25.9%)	279 (42.2%)	
Which do you think would save you time?			
Being treated at home by a paramedic would save me time	142 (73.6%)	352 (53.1%)	<.0001
Going to the ED would save me time	13 (6.7%)	133 (20.1%)	
Both take about the same amount of time	38 (19.7%)	178 (26.8%)	

ED, emergency department; MIH/CP, mobile integrated health and community paramedicine.

Limitations

This study has important limitations as part of a real-world implementation. ED data were limited and anonymized, lacking time stamps and facility characteristics. As such, potential confounders and subgroup analyses could not be analyzed. The survey groups had several demographic differences, and it is unclear what impact these differences had on the analysis. Additionally, although we excluded repeat surveys to reduce respondent burden, the perspective of the subgroup of patients with multiple encounters was unaccounted for. This survey was also conducted before the COVID-19 pandemic, which facilitated a more rapid expansion of MIH/CP across Massachusetts and may have altered patient perceptions of MIH/CP. As a result, patient experience data related to these programs have greater significance.

Results come from a single health care delivery system in Massachusetts during a pilot under a Special Projects Waiver. Although patients were not randomly assigned to MIH/CP vs ED care, clinicians reviewed cases for clinical comparability, and the rates of deaths and hospitalizations/being too sick to answer were very similar across the 2 groups. The study also only explores how an urgent care community paramedic program appeals to a low-income, medically complex patient population. Future analyses with larger sample sizes would allow more robust subgroup analyses, such as patients transported to the ED following MIH evaluation. Nevertheless, this

study contributes valuable information regarding the experiences of patients receiving community-based care from paramedics.

CONCLUSIONS

Patients report high levels of satisfaction and perceived higher quality receiving paramedic-delivered urgent care in their homes rather than going to EDs. The overwhelmingly positive feedback that patients reported for paramedic care exceeded expectations, nearing complete satisfaction. MIH/CP represents an alternative care model for delivering urgent care with the prospect of enhancing efficiency while maximizing patient satisfaction. Knowing that patients consider this care model acceptable suggests that it has potential as a capacity management tool, optimizing care delivery and reducing ED crowding. With MIH/CP representing an alternative pathway accepted and even preferred by patients, our analysis of the program's impact on ED utilization will be forthcoming. As MIH/CP programs expand, continued rigorous investigation and assessment are needed to explore the clinical outcomes, broader health care utilization, and feasibility of implementation in other regions and health care systems. ■

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