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Differences Between Emergency Department and Urgent Care Users for Low-Acuity Health Needs: A Public Opinion Analysis

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54

MAIN TEXT

55

56 The emergency department (ED) is a commonly utilized healthcare setting for many Americans
57 when unexpected health challenges arise.¹ Though vital, the ED is viewed as an expensive site of
58 care, especially for conditions that could be managed in less resource-intensive settings.² Prior
59 estimates have suggested that a sizable proportion of ED visits are for low-acuity complaints that
60 could be treated in cheaper alternatives, such as urgent care (UC) centers or retail clinics.² Over

61 the past decade, these alternatives to the ED for unexpected, low-acuity visits have rapidly
62 emerged in the market.³ Policymakers and payers have shown enthusiasm to redirect low-acuity
63 ED patients towards these alternatives given the proposed dual benefits of reducing crowded ED
64 volumes and overall healthcare costs.⁴

65
66 Though policies have been crafted to realize these proposed benefits, some efforts have been
67 controversial, especially those that penalize patients retrospectively for seeking ED care for
68 conditions later deemed to not be actual emergencies.⁵ Further, it is unclear whether or not the
69 introduction of UCs in proximity to EDs is associated with decreasing rates of low-acuity ED
70 visits.^{6,7} Prior work has suggested that the rise in UCs have been primarily concentrated in high-
71 income areas, thereby calling into question if these alternatives are equitably distributed.⁸
72 Missing from these prior analyses, however, are end-user perspectives as to why they choose one
73 site of care versus another. We aim to fill this gap by leveraging a unique public opinion survey
74 that allows us to characterize respondents who used EDs compared to UCs for low-acuity health
75 needs, identify factors associated with the use of EDs versus UCs for low-acuity health needs,
76 and summarize low-acuity ED users' reasons for opting for the ED versus an alternative.

77 Data come from the "Patients' Perspectives on Health Care in the United States" survey, a
78 randomized, probability-based telephone poll conducted by the Harvard T.H. Chan School of
79 Public Health, Robert Wood Johnson Foundation, and National Public Radio.⁹ The survey was
80 fielded by the research firm SSRS in 2015, using a random-digit dialing method for cell phones
81 and landlines. Interviews were conducted among U.S. adults, ages 18 years and above, in both
82 English and Spanish. The dataset consisted of a national sample (n=1,002) as well as samples of
83 approximately 1,000 individuals from 7 states chosen for their diverse demographic, geographic,
84 and political contexts (Florida, Kansas, New Jersey, Ohio, Oregon, Texas, and Wisconsin;
85 n=7,036). The broad survey, which has been used for other published work, had an overall
86 response rate similar to other national polls of 13%.¹⁰

87 The variables constructed as primary outcomes were self-reported 1) utilization of EDs and/or
88 UCs, 2) rationale for choice of ED over alternatives; and, 3) health acuity when making this
89 choice ("To get treatment for a 'major health problem (like a broken bone, cut or high fever)' or
90 'for a minor health problem (like a sprain or toothache)' or 'some other reason'"). Respondents

91 were categorized as having a low-acuity health need if they chose anything but “major health
92 problem” (Supplement).

93

94 Independent variables included household income, whether or not a respondent had a regular
95 provider, health insurance, self-reported health (dichotomized as excellent/good or fair/poor),
96 having a chronic illness (yes/no), and resided in a Medicaid expansion state. Covariates
97 associated with health care utilization, including age, gender, race/ethnicity, geographical area,
98 employment status, and education, were included.¹⁰

99

100 For all analyses, we collated the state-level responses into a combined 7-state sample, which was
101 analyzed separately from the smaller national sample. We re-weighted the 7-state sample to
102 reflect its aggregate proportion of the national population based on the 2014 U.S. Census
103 American Community Survey.¹⁰ Results focus on the combined 7-state sample given its larger
104 sample size, and lack of substantive differences with the smaller national sample (Supplement).

105

106 We summarize the characteristics of respondents who use both EDs and UCs, regardless of
107 health acuity level. Among the low-acuity user subgroup, we compare differences in
108 characteristics between both sites of care using chi-squared tests. We then conducted
109 multivariable logistic regression modeling to identify characteristics of low-acuity users that may
110 independently predict seeking care at the ED versus UC. Lastly, we summarize why low-acuity
111 ED users opt for the ED versus alternatives. Statistical significance was set at p-values below
112 0.05. Analyses were conducted using Stata 14.0, StataCorp LP, College Station, Texas. The
113 study was exempted from review by the Harvard Office of Human Research Administration.

114

115 Nearly half of survey respondents (48%) reported accessing care at the ED and/or UC within the
116 past two years. Approximately one-third of adults reported using EDs (32%), while 26%
117 reported using UCs within that time period; their user profiles differed across a variety of
118 socioeconomic factors (Supplement). More than half of ED users (54%) reported seeking ED
119 care for a low-acuity health need; the majority of UC users (84%) had a low-acuity complaint.

120

121 As compared to low-acuity UC users, a greater percentage of low-acuity ED users identified as
122 non-white (44% ED vs. 30% UC, $p<0.001$), less likely to have a college degree (49% ED vs.
123 65% UC, $p<0.001$), more likely to be very low-income ($< \$30k$ annual income) (46% ED vs.
124 29% UC, $p<0.001$), less likely to be privately insured (33% ED vs. 51% UC users, $p<0.001$),
125 more likely to be chronically ill (48% ED vs. 36% UC, $p<0.001$), and had poor-to-fair self-
126 reported health (33% ED vs. 20% UC, $p<0.001$). Results from the national survey were similar,
127 though less often statistically significant (Supplement).

128

129 The adjusted model suggested that a number of factors independently predicted low-acuity ED
130 use versus the UC, including being uninsured (OR 1.85 [95% CI: 1.04, 3.27], $p\text{-val}=0.04$),
131 identifying as black (OR 1.78 [95% CI: 1.11, 2.87], $p\text{-val}=0.02$), being unemployed (OR 1.66
132 [95% CI: 1.12, 2.45], $p\text{-val}=0.01$), and having lower-incomes ($< \$30k$) (OR 2.67 [95% CI: 1.63,
133 4.38], $p\text{-val}<0.001$) (**Table 1**).

134

135 When asked why they chose the ED versus other alternatives, a plurality of low-acuity ED users
136 (33%) reported access concerns (i.e., “other facilities were not open”, “too far away”, or they
137 were “unable to secure another appointment”), 13% felt that the ED was the only place they
138 could be treated, 11% were brought to the hospital by ambulance, 8% felt the ED had the
139 equipment or staff they needed, and 8% felt they might need hospital admission (Supplement).

140

141 This study leverages a unique public opinion survey to assess self-reported low-acuity health
142 usage of EDs versus alternatives and reasons for this care-seeking behavior. We found that
143 nearly half of the U.S. adult population reports recently using EDs and/or UCs, and the groups
144 who utilize these sites of care differ across a range of socioeconomic factors. Further, over half
145 of ED users self-report turning to the ED for a low-acuity health complaint, despite increasing
146 pressures from payers and policymakers to shunt patients away from the ED for low-acuity
147 health needs.² Those who rely on EDs and UCs for low-acuity health needs differ, suggesting
148 that the least resourced and most vulnerable in society are particularly reliant on the ED for all
149 types of care – regardless of acuity. These findings complement a growing evidence base that the
150 availability of ED alternatives for low-acuity visits are unevenly distributed in communities, with
151 the poorest areas being least likely to benefit from this emerging “alternative” market.^{7,8}

152

153 Our findings should be interpreted considering several well-known limitations related to survey
154 research, including non-response bias, ordering effects, and language bias. Recall bias is
155 important to acknowledge given our method for defining low-acuity ED users (i.e. based on self-
156 report after learning of their ED workup outcome); however, other retrospective or prospective
157 mechanisms for defining low-acuity ED usage also have challenges. Further, this survey required
158 access to a phone and thus may have biased our findings relevant to vulnerable populations
159 towards the null. Also, though comparable to other national polls, this survey's response rate was
160 low; therefore, we employed weighting procedures that adhere to best practices in probability-
161 based sampling polling methods.^{9,10} Further, nearly a third of low-acuity ED respondents chose
162 "some other reason" when asked why they opted for the ED versus an alternative, even after
163 being presented with reasons that are commonly thought of as why patients make this choice.
164 Since the survey structure did not permit for respondents to expand upon this answer, further
165 research will be helpful for elucidating care-seeking behavior among low-acuity ED visits.
166 Lastly, though unique, these data are from 2015 and merit contemporary follow-up analyses.

167

168 Looking ahead, policymakers are likely to promote sustained efforts that redirect patients with
169 low-acuity needs away from the ED towards lower-cost alternatives in an effort to better
170 optimize the perceived value of these healthcare settings. In this policy context, patients should
171 have meaningful access (e.g., availability in their neighborhood and during extended hours,
172 treatment regardless of ability to pay, access to triage consultants such as through certain
173 insurers) to alternatives sites of care before they are penalized for opting for the ED for low-
174 acuity needs. As the COVID-19 pandemic's impact on ED care-seeking behavior has
175 demonstrated, it is more important than ever to understand why, when, and where patients elect
176 to receive timely care.

177

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REFERENCES

- 179 1. Singer AJ, Thode HC, Pines JM. US Emergency Department Visits and Hospital Discharges
180 Among Uninsured Patients Before and After Implementation of the Affordable Care Act.
181 JAMA Netw Open 2019;2(4):e192662–e192662.

- 182 2. Trueger NS, Chua K-P, Hussain A, Liferidge AT, Pitts SR, Pines JM. Incorporating
183 Alternative Care Site Characteristics Into Estimates of Substitutable ED Visits. *Med Care*
184 2017;55(7):693–7.
- 185 3. Dolan S. Urgent Care Clinics in 2019: Industry Trends & Market Stats - Business Insider
186 [Internet]. *Bus. Insid.* 2019 [cited 2019 May 26]; Available from:
187 <https://www.businessinsider.com/urgent-care-industry-trends>
- 188 4. Weinick RM, Burns RM, Mehrotra A. Many Emergency Department Visits Could Be
189 Managed At Urgent Care Centers And Retail Clinics. *Health Aff (Millwood)*
190 2010;29(9):1630–6.
- 191 5. Jaffe TA, Kocher KE, Ghaferi AA. Potentially Avoidable Emergency Department Use:
192 When Policy Expects Patients to be Physicians. *Ann Emerg Med* 2018;72(3):256–8.
- 193 6. Carlson LC, Raja AS, Dworkis DA, et al. Impact of Urgent Care Openings on Emergency
194 Department Visits to Two Academic Medical Centers Within an Integrated Health Care
195 System. *Ann Emerg Med* [Internet] 2019 [cited 2019 Sep 23]; Available from:
196 <http://www.sciencedirect.com/science/article/pii/S0196064419305347>
- 197 7. Allen L, Cummings JR, Hockenberry J. Urgent Care Centers and the Demand for Non-
198 Emergent Emergency Department Visits [Internet]. National Bureau of Economic
199 Research; 2019 [cited 2020 Feb 9]. Available from: <http://www.nber.org/papers/w25428>
- 200 8. Le ST, Hsia RY. Community characteristics associated with where urgent care centers are
201 located: a cross-sectional analysis. *BMJ Open* 2016;6(4):e010663.
- 202 9. Robert Wood Johnson Foundation. Patients' Perspectives on Health Care in the United States
203 [Internet]. 2016 [cited 2018 Jul 14]. Available from:
204 [https://www.rwjf.org/en/library/research/2016/02/patients--perspectives-on-health-care-in-](https://www.rwjf.org/en/library/research/2016/02/patients--perspectives-on-health-care-in-the-united-states.html)
205 [the-united-states.html](https://www.rwjf.org/en/library/research/2016/02/patients--perspectives-on-health-care-in-the-united-states.html)
- 206 10. Sommers BD, McMurtry CL, Blendon RJ, Benson JM, Sayde JM. Beyond Health Insurance:
207 Remaining Disparities in US Health Care in the Post-ACA Era. *Milbank Q* 2017;95(1):43–
208 69.

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TABLE

212 **Table 1.** Logistic Regression Results Predicting Emergency Department (ED) Use for Low-
 213 Acuity Health Reason (versus Urgent Care) Within the Past Two Years (2014-2015), Adjusted
 214 Odds Ratio [95% Confidence Interval], Combined 7-State Sample

215

Variables		7-State Sample Low Acuity Users (n=1,986) Prob> F: <0.000
Has Regular Care Provider	<i>Yes</i>	--
	<i>No</i>	0.94 [0.62, 1.41]
Main Source of Health Insurance	<i>ESHI</i>	--
	<i>Medicare</i>	1.31 [0.78, 2.20]
	<i>Medicaid</i>	1.49 [0.80, 2.76]
	<i>Other Insurance</i>	1.03 [0.67, 1.60]
	<i>Uninsured</i>	1.85* [1.04, 3.27]
Chronically Ill	<i>No</i>	--
	<i>Yes</i>	1.29 [0.94, 1.78]
Fair/Poor Health	<i>No</i>	--
	<i>Yes</i>	1.00 [0.69, 1.46]
Gender	<i>Male</i>	--
	<i>Female</i>	1.00 [0.74, 1.34]
Race/ Ethnicity	White (NH)	--
	Black (NH)	1.78* [1.11, 2.87]
	Hispanic	0.86 [0.55, 1.36]
	Other	1.51 [0.84, 2.72]
Age (years)	<i>18-29</i>	--
	<i>30-49</i>	1.08 [0.69, 1.68]

		7-State Sample
		Low Acuity Users (n=1,986)
Variables		Prob> F: <0.000
	<i>50-64</i>	0.88 [0.57, 1.37]
	<i>65+</i>	0.78 [0.43, 1.38]
Education	<i>≤ High School</i>	--
	<i>Some college+</i>	0.84 [0.61, 1.16]
Employment	<i>Full-Time</i>	--
	<i>Part-time</i>	0.92 [0.57, 1.49]
	<i>Unemployed</i>	1.66* [1.12, 2.45]
Household Income	<i>≥\$100,000</i>	--
	<i>\$50,000-\$99,999</i>	1.59* [1.02, 2.46]
	<i>\$30,000-\$49,999</i>	3.12*** [1.92, 5.06]
	<i><\$30,000</i>	2.67*** [1.63, 4.38]
Household Location	<i>Urban</i>	--
	<i>Suburban</i>	1.14 [0.81, 1.62]
	<i>Rural</i>	1.19 [0.81, 1.74]
Lives in Medicaid Expansion State	<i>No</i>	--
	<i>Yes</i>	1.01 [0.76, 1.34]

216 *Note:* NH=non-Hispanic; ESHI=employer-sponsored health insurance. Reference groups (--), in order of categories:
217 Has a regular care provider; Employer/Spouse Employer Sponsored Health Insurance (ESHI), Not Chronically Ill,
218 In Good/Excellent Health, Male, non-Hispanic White, Age 18-29, High school education or less, Employed full-
219 time, Household Income >\$100,000, Urban household location, and for state-analysis: does not live in Medicaid
220 expansion state. Responses of “Don’t Know” or “Refuse to Answer” to any of the above covariates were considered
221 missing data and excluded from modeling. In terms of total observations, the n=1986 reflects the total number of
222 low-acuity users that were included in the final model; this comes from the total pool of n=7,036 respondents in the
223 combined 7-state sample and includes the smaller subset of low-acuity ED or UC users. Model is significant at P-
224 value: *p<0.05, **<0.01, ***<0.001. Results from the smaller national model are included in the Supplement.