Appendix
Receipt of Social Needs Assistance and Health Center Patient Experience of Care
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Appendix Table 1. List of Questions for Study Outcomes

Outcome	Question	Responses
Enrolled in social services	During the last calendar year, did you or anyone in your household receive… Food stamps? WIC? TANF? Section 8 Housing? Any other assistance from the government?	1. Yes 2. No 3. Refusal 4. Don't Know
Usual source - CHC Usual source - ED	What is the place or places that you usually go when you are sick or you need care?	1. This health center 2. Clinic or health center offering a discount to low income or uninsured people 3. Other clinic or health center 4. Doctor's office or HMO 5. Hospital emergency room 6. Hospital outpatient department 7. There is no usual place Other
Routine checkup in last year	About how long has it been since your last general check up or physical?	1. Never 2. Less than 1 year ago 3. At least 1 year but less than 2 years 4. At least 2 years but less than 3 years 5. At least 3 years but less than 4 years 6. At least 4 years but less than 5 years 7. 5 or more years ago 8. Don't know/Missing/Skipped
Perceived quality of care based on provider rating - best	Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this doctor?	0 to 10
Willingness to recommend	Would you recommend the health center to your family and friends? Would you say yes definitely, yes somewhat, or no?	1. Yes – definitely 2. Yes – somewhat 3. No 4. Don't know/Missing/Skipped

CHC, community health center; ED, emergency department; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children; TANF, Temporary Assistance for Needy Families.

Appendix
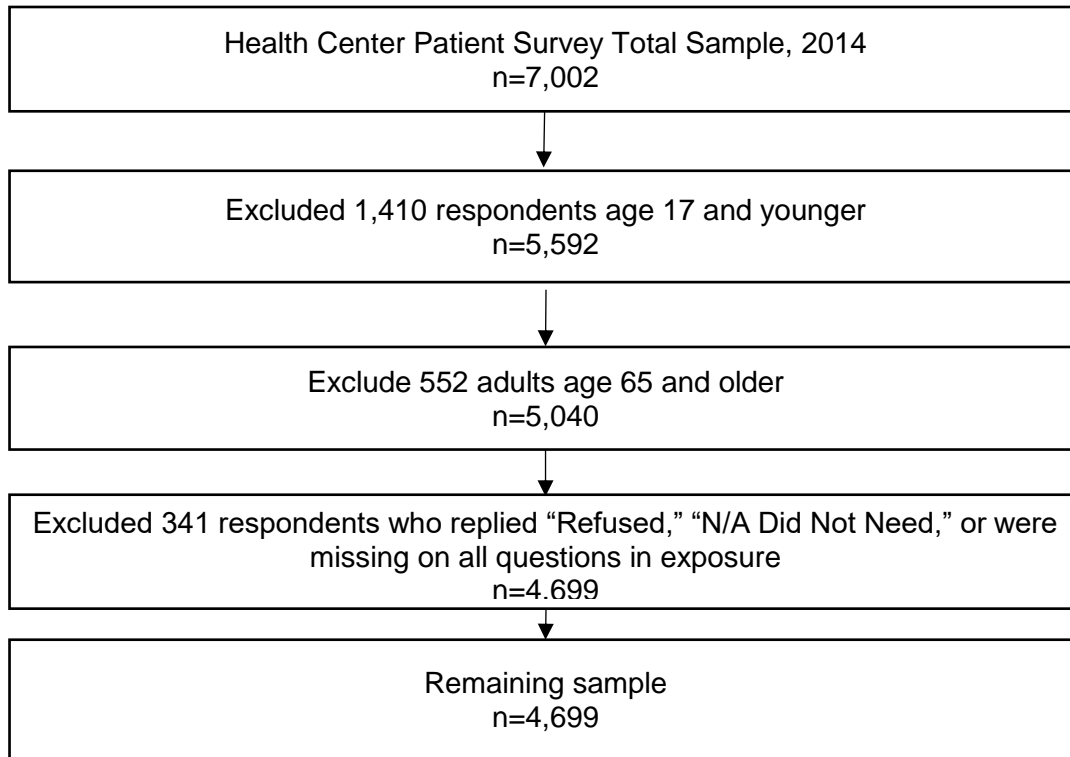**Receipt of Social Needs Assistance and Health Center Patient Experience of Care**
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Appendix Table 2. List of Survey Questions to Measure Receipt of Social Needs Assistance

Type of assistance	Question	Responses
Apply for government benefits	Has anyone at the health center ever helped you apply for any government benefits you needed?	1. Yes 2. No
Transportation	Has anyone at the health center ever helped you get transportation to medical appointments or provided you with vouchers?	3. N/A – Have not needed these services
Housing	Has anyone at the health center ever helped you with basic needs such as finding a place to live?	4. Don't know
Employment	Has anyone at the health center ever helped you with basic needs such as finding a job?	
Childcare	Has anyone at the health center ever helped you with basic needs such as finding childcare?	
Food insecurity	Has anyone at the health center ever helped you with basic needs such as helping obtain food?	
Clothing	Has anyone at the health center ever helped you with basic needs such as helping obtain clothing or shoes?	
Other	Has anyone at the health center ever helped you with other kinds of problems?	

CHC, community health center; ED, emergency department.

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Appendix Figure 1. Inclusion and exclusion criteria of study sample.

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┌─────────────────────────────────────────────────────────────┐
│           Health Center Patient Survey Total Sample, 2014    │
│                          n=7,002                             │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│        Excluded 1,410 respondents age 17 and younger         │
│                          n=5,592                             │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│            Exclude 552 adults age 65 and older               │
│                          n=5,040                             │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│  Excluded 341 respondents who replied "Refused," "N/A Did Not Need," or were │
│              missing on all questions in exposure            │
│                          n=4.699                             │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│                      Remaining sample                        │
│                          n=4,699                             │
└─────────────────────────────────────────────────────────────┘
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Source: Authors' analysis of Health Resources and Services Administration 2014–2015 Health Center Patient Survey data.
Notes: Counts represent unweighted sample.

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Appendix Table 3. Characteristics of Health Center Patients Who Reported Not Needing Social Services, 2014–2015

Characteristic %	Did not need social services (n=341)	Received social needs assistance (n=2,109)	*p*-value	Did not receive social needs assistance (n=2,590)	*p*-value
Age, years					
18–34	48.2	37.4	0.08	38.6	0.13
35–44	13.5	21.1	**0.04**	21.8	0.03
45–54	13.4	24.4	**0.02**	21.6	0.04
55–64	25.0	17.2	0.12	18.0	0.10
Race/ethnicity					
White	43.2	38.5	0.49	53.8	0.12
Hispanic	23.8	28.4	0.44	24.2	0.95
Black	23.9	24.9	0.88	15.9	0.15
Asian	3.6	3.2	0.68	1.4	0.13
Other	5.5	5.1	0.85	4.6	0.72
Female	38.4	67.7	0.40	64.7	0.65
Income as % of federal poverty level (FPL)					
≤100% FPL	43.1	65.0	**0.01**	55.2	0.12
101%–138% FPL	12.4	27.9	0.09	16.8	0.23
139%–199% FPL	12.9	9.0	0.33	13.0	0.98
≥200% FPL	31.7	7.0	**<0.01**	15.0	**0.04**
Limited English proficiency	32.8	30.7	0.74	25.0	0.19
Health insurance type					
Uninsured	27.9	31.2	0.66	37.3	0.26
Public	34.9	50.8	**0.03**	41.5	0.41
Private	36.7	17.3	**0.02**	20.9	0.06
High school diploma or more	71.9	61.9	0.05	65.6	0.22
Rural residence	40.5	36.5	0.68	56.1	0.14
Other patient characteristics					
Married	41.5	23.8	**<0.01**	28.3	**0.04**
Non-U.S. born	26.1	21.8	0.46	18.5	0.18
Experiencing homelessness	0.6	5.6	**<0.01**	1.0	0.30

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Sexual minority	2.6	8.3	0.08	4.2	0.48
Self-reported fair or poor health status	41.3	46.7	0.37	39.3	0.73
Diagnosis of medical conditions					
Diabetes	12.5	19.8	0.07	21.3	**0.04**
Hypertension	44.0	42.3	0.81	41.1	0.67
Coronary heart disease	1.6	2.2	0.77	2.2	0.72
Chronic obstructive pulmonary disease	3.8	8.4	0.19	7.3	0.27
Angina	2.6	2.2	0.81	2.5	0.93
Stroke	2.7	6.1	0.26	4.6	0.47
Asthma	11.4	17.2	0.16	16.2	0.23
Depression	10.2	19.0	**0.04**	14.3	0.29
Generalized anxiety	22.0	33.3	**0.03**	28.8	0.17
Other mental health conditions	17.0	27.3	**0.03**	20.3	0.44
Limited activities of daily living	13.3	26.6	**0.02**	21.4	0.13
Patient type					
Community health center	93.0	86.0	**0.02**	92.8	0.94
Public housing primary care	0.9	1.9	0.12	0.9	0.92
Migrant health center	2.4	4.1	0.14	3.3	0.36
Health care for the homeless	3.8	8.0	0.14	3.0	0.66
Care continuity					
Has received care at health center for 5 or more years	41.1	45.7	0.55	34.9	0.35
CHC visits in the last 12 months					
0	2.3	4.2	0.48	5.4	0.24
1–4	65.2	44.2	**<0.01**	53.5	0.08
5 or more	32.6	51.7	**0.02**	41.1	0.38
Medicaid expansion state as of 2014	45.3	62.1	0.48	43.4	0.29

Notes: Boldface indicates statistical significance ($p<0.05$) based on Pearson's Chi-square test. Approximately 4.5 million respondents received assistance, 8.5 million respondents did not receive assistance, and 1.9 million refused, were missing values, or responded not applicable for all items related to receipt of assistance in accessing social services. Percentages were calculated using analytic survey weights that reflect the distribution of health center patient characteristics nationwide. Some numbers may not sum to 100 because of rounding.

CHC, community health center.

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Appendix Table 4. Characteristics of Health Center Patients, by Type of Social Needs Assistance Received, 2014–2015

Characteristic %	CHC assistance applying for government benefits (n=1,437)	No CHC assistance applying for government benefits (n=3,445)	p-value	CHC assistance accessing basic needs (n=1,338)	No CHC assistance accessing basic needs (n=3,253)	p-value
Age, years						
18–34	39.0	38.1	0.85	36.3	38.8	0.63
35–44	22.8	20.4	0.42	17.5	22.2	0.17
45–54	19.7	22.9	0.29	31.6	20.8	**<0.01**
55–64	18.6	18.7	0.98	14.6	18.2	0.18
Race/ethnicity						
White	38.8	52.2	**0.01**	35.1	52.0	**<0.01**
Hispanic	33.5	23.3	**0.01**	21.9	26.0	0.30
Black	21.2	17.9	0.35	32.7	15.0	**<0.01**
Asian	3.2	1.6	**0.03**	2.4	1.8	0.47
Other	3.4	0.5	0.25	7.9	4.2	0.12
Female	65.3	66.2	0.82	67.2	65.3	0.70
Income as % of FPL						
≤100% FPL	61.7	57.1	0.10	73.6	55.8	**<0.01**
101%–138% FPL	20.8	15.9	**<0.01**	15.8	17.3	0.66
139%–199% FPL	17.6	26.9	0.58	4.8	13.3	**<0.01**
≥200% FPL			**<0.01**	5.7	13.6	**0.03**
Limited English proficiency	35.0	24.8	**0.01**	22.9	26.9	0.28
Health insurance type						
Uninsured	34.3	35.3	0.85	23.8	37.0	**0.01**
Public	47.8	43.8	0.44	58.8	42.1	**<0.01**
Private	17.1	20.4	0.22	16.9	20.5	0.30
High school diploma or more	61.5	65.3	0.24	64.1	63.2	0.85
Rural residence	39.5	52.1	**0.03**	31.6	54.3	**<0.01**
Other patient characteristics						
Married	27.7	26.8	0.79	18.6	29.0	**<0.01**

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Non-U.S. born	25.3	17.9	**0.04**	17.0	19.5	0.51
Experiencing homelessness	4.4	1.9	**<0.01**	10.1	1.0	**<0.01**
Lesbian, gay, or bisexual	8.5	4.5	**0.03**	9.7	4.4	**0.01**
Self-reported fair or poor health status	46.7	40.7	0.11	49.9	41.1	**0.04**
Diagnosis of medical conditions						
Diabetes	19.9	21.0	0.79	17.2	22.1	0.20
Hypertension	41.9	41.0	0.84	43.4	41.8	0.73
Asthma	17.8	16.0	0.58	21.9	15.6	**0.03**
Coronary heart disease	1.7	2.2	0.65	3.8	1.9	0.13
Chronic obstructive pulmonary disease	8.2	7.6	0.78	11.6	6.9	0.06
Angina	2.5	2.5	0.97	2.9	2.3	0.60
Stroke	6.3	4.7	0.42	6.0	5.0	0.48
Depression	18.0	15.2	0.27	21.0	14.7	0.05
Generalized anxiety	30.3	29.7	0.84	40.0	28.5	**<0.01**
Other mental health conditions	24.0	22.3	0.61	35.1	20.2	**<0.01**
Limited activities of daily living	26.1	22.3	0.29	30.2	22.0	**0.02**
Patient type						**<0.01**
Community health center	86.0	91.7	**<0.01**	81.8	92.1	**<0.01**
Public housing primary care	2.2	1.0	**0.02**	2.2	1.1	0.09
Migrant health center	4.6	3.1	0.06	3.4	3.8	0.66
Health care for the homeless	7.2	4.2	**0.01**	12.6	3.1	**<0.01**
Care continuity						
Has received care at health center for 5 or more years	43.8	37.2	0.07	49.5	36.8	**0.01**
CHC visits in the last 12 months						
0	4.8	4.8	0.98	3.5	5.5	0.20
1–4	43.1	53.3	**0.01**	43.3	51.0	0.07
5 or more	52.1	42.0	0.15	53.2	43.5	**0.02**
Medicaid expansion state as of 2014	61.8	46.0	**<0.01**	68.2	45.1	**<0.01**

Notes: Boldface indicates statistical significance (*p*<0.05) using Pearson's Chi-square test. Approximately 3.3 million respondents received assistance applying for government benefits and 9.8 million respondents did not receive assistance applying for government benefits. Approximately 2.3 million respondents received assistance accessing basic needs and 9.9 million respondents did not receive assistance accessing basic needs. Percentages were calculated using analytic survey weights that reflect the distribution of health center patient characteristics nationwide. Some numbers may not sum to 100 because of rounding.

CHC, community health center; FPL, federal poverty level

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Appendix Table 5. Regression Models Without Inverse Probability of Treatment Weights

Outcome	Observations, n	Adjusted estimates Difference (95% CI)
Enrolled in social services	4,332	5.5 (–0.07, 11.7)
Usual source - CHC	4,386	**6.6 (1.8, 11.3)**
Usual source - ED	4,299	**–3.5 (–6.5, –0.5)**
Routine checkup in last year	4,357	–4.8 (–11.8, 2.2)
Perceived quality of care based on provider rating - best	4,382	**10.6 (5.4, 15.8)**
Willingness to recommend	4,384	**6.0 (1.9, 10.0)**

Notes: Boldface indicates statistical significance (*p*<0.05). Authors defined "enrolled in social programs" outcome if respondent or someone in household received one of the following: food stamps, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); Temporary Assistance for Needy Families (TANF); Section 8 Housing; or any other assistance from the government. Unadjusted rates apply survey weights only. Adjusted estimates use logistic regression and do not include inverse probability of treatment weights. Models adjust for age, gender, race/ethnicity, household income measured as a percentage of the federal poverty level, English proficiency, health insurance type (uninsured, public, or private), highest level of education attained, urban versus rural location, marital status, being born in the U.S., experiencing homelessness, sexual minority status, self-reported fair or poor health status, diagnosis of medical conditions (diabetes, hypertension, coronary heart disease, chronic obstructive pulmonary disease, angina, stroke, asthma, depression, generalized anxiety, or other mental health conditions [panic disorder, schizophrenia, or bipolar disorder]), patient type (e.g., general CHC patients, public housing, migrant and seasonal farm workers, or health care for the homeless), if they had visited this particular CHC for five years or more, number of CHC visits in the last year, and Medicaid expansion status as of 2014. Adjusted differences were calculated using "Margins" command in Stata and are reported as absolute percentage point differences.

CHC, community health center; ED, emergency department.