Understanding the Primary Care Experience in a Student-Run Free Clinic

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Abstract

Background: Over 100 student-run free clinics (SRFCs) operate in the United States (US), typically serving uninsured populations. To date, there has been no effort to compare the patient-reported primary care experience in SRFCs to those of mainstream primary care (PC) clinics serving similar populations. In this study, we surveyed patients at Equal Access Birmingham (EAB), an SRFC, and compared our results to those from two PC clinics serving homeless-experienced clientele.
Methods: We surveyed 60 EAB patients with the validated "Primary Care Quality-Homeless" survey. It generates an overall score and 4 subscale scores (clinician-patient Relationship, perceived inter-provider Cooperation, Accessibility/Coordination, Homeless-Specific Needs). We compared EAB's ratings to those published for a Veterans Affairs (VA) mainstream PC (n=150) clinic and a homeless-tailored non-VA Health Care for the Homeless (HCH) program (n=195).
Results: EAB's ratings were similar to those of the mainstream VA clinic (p>0.4). EAB scored lower than the homeless-tailored non-VA HCH program in each subscale, though the difference did not achieve statistical significance. EAB patients most often praised the staff's interpersonal skills. Items in which >25% of respondents gave a negative rating concerned wait times (29%), coordination of care (65%), and perceptions of provider skill (43%).
Conclusions: Despite constrained resources, an SRFC scored comparably to a mainstream VA PC setting. SRFCs will play a continuing role in care of uninsured individuals, and while these data suggest SRFC patient experiences are mostly favorable, additional resources may be required to approximate the care experience achieved in clinics tailored for homeless persons.

Introduction

Despite health care access gains conferred by the Affordable Care Act (ACA), large gaps in access to care persist, most notably in states that declined the ACA's expansion of Medicaid.[1] In Medicaid-declining states, prior research has shown that volunteer clinics, including student-run free clinics (SRFCs), play a role in addressing primary care (PC) problems for low-income populations lacking insurance. In 2010, 1007 free clinics, 110 of which were SRFCs, cared for 1.8 million individuals.[2] A 2014 survey identified SRFCs at 106 medical schools in the United States (US), although many SRFCs operated in multiple locations.[3] Of these free clinics, a majority provided medications, health education, chronic disease management, acute care, and laboratory services.[4] In selected examples, the quality of care provided by SRFCs for chronic conditions, such as hypertension and diabetes, has been shown to meet national guidelines.[2,5,6]

Although SRFCs may enhance patient care and medical education, there has been little

effort to assess patient experience in SRFCs or to compare the SRFC patient experience to that delivered by publicly funded providers such as federally qualified health centers or clinics of the US Department of Veterans Affairs (VA). One study of satisfaction in SRFCs focused on service mechanics but lacked information regarding key aspects of PC (accessibility, coordination, etc.) assessed in instruments like the Primary Care Assessment Survey.[7–9] Separately, satisfaction measures, which assess whether care matches patient expectations, differ in principle from measures in which patients report on their experience of care delivery. One study deployed the Patient Experience Questionnaire to evaluate perceptions of an SRFC-delivered, one-time needs assessment following hospital admission, but the authors did not compare experiences of SRFC patients to those of other sites.[10,11]

For this study, we collected PC experience surveys from patients at Equal Access Birmingham (EAB), an SRFC from which nearly 20% of people experiencing homelessness in Birmingham sought care in 2013.[12] For comparison, we selected ratings from two sites, a PC VA clinic and a nationally-regarded Healthcare for the Homeless (HCH) program, where the same survey had been administered in a prior study.[13] For communities that entrust the care of low-income populations to volunteer clinics, this comparison might illustrate some of the tradeoffs involved. We hypothesized the SRFC would obtain ratings better than those of a nearby VA PC clinic and similar ratings to those of a well-regarded HCH program (Boston Health Care for the Homeless Program).

Methods

Research volunteers administered surveys during clinic check-in. Surveys were collected from June 2015 until March 2016, when the primary author transitioned to clinical rotations. The Institutional Review Board at the University of Alabama at Birmingham (UAB) approved this study.

Site

The study was conducted at EAB, UAB School of Medicine's SRFC, located in a day shelter for low-income and homeless persons in downtown Birmingham. The study included two sites of comparison. One was a PC VA clinic from Birmingham. We had reason to believe the SRFC could match the VA clinic ratings, as the SRFC's location (in a shelter), tangible assistance (food, clothes), and dedicated staff approximate some aspects of "tailoring" of service for this population, which has performed well in other studies.[13] The other comparator, a nationally-regarded HCH program,[13,14] would represent the highest attainable standard.

Recruitment

Recruitment sought all English-speaking adult (>18 years) patients receiving PC from the SRFC from June 2015 to March 2016. Persons who seemed mentally altered and thus could not engage in informed consent were not recruited. Patients who completed at least one visit prior to the day of survey were recruited at the SRFC in the waiting area prior to seeing the physician.

From June 2015 to March 2016, the SRFC saw 65 patients. Among them, 78.5% agreed to the survey. Of the 14 patients who declined to participate, three had to leave due to time constraints, two were not interested, and the remainder did not specify a reason. Participants received a token incentive (a "goodie bag" with socks or similar items) after participation.

Survey Administration

The Primary Care Quality-Homeless (PCQ-H) survey is a validated survey consisting of 33 items with four subscales: patient-clinician Relationship (15 items, focused on trust and ease of communication with clinicians, α=0.92), perceived Cooperation among clinicians (three items regarding perception of cooperation among care team members, α=0.75), Access/Coordination (11 items covering clinic accessibility and ease of obtaining recommended services, α=0.87), and Homeless-Specific Needs (four items addressing housing, clothing and staff attitudes toward homeless clients, α=0.76).[15] Items solicit Likert-type responses to statements regarding the provider or clinic (e.g., "If I could not get to care, this place would reach out to try to help me get care"). Since homelessness was not an entry criterion for the SRFC, the four Homeless-Specific Needs items were left optional. Other patient characteristics controlled for in prior studies were collected.[13,16–18]

These included housing, race, gender, employment, and general self-reported health, producing a 47-item survey.[19–21] Patients were given the option of completing the survey independently, or face-to-face with a team member, in case of visual impairment or challenges to literacy.

For one survey, the respondent met pre-specified criteria for survey non-engagement. This was based on checking the same response for all items (i.e., regardless of whether the items were negatively or positively worded) and completing all 47 items in less than 180 seconds. Such response patterns may have reflected a primary interest in obtaining the study incentive.

In addition to the 47-item survey, two open-ended items asked what respondents liked most and what they liked least about the clinic. The authors sought this qualitative data to further clarify responses to the survey, and to provide specific feedback for the SRFC leadership team.

Analysis

Analyses entailed comparison of SRFC patients' PC experiences to previously published results from homeless-experienced patients at a VA PC clinic and HCH program.[13]

First, Likert-type responses were treated numerically (range 1-4, 4 being most favorable). Mean and standard deviation were calculated for PCQ-H subscales, and for an average total of all items ("Overall score"). Second, because patient questionnaires tend to obtain positively skewed results, we devised a categorical "unfavorable experience indicator" based on offering two or more frankly unfavorable responses (i.e., agreeing with a negative item, or disagreeing with a positive item) for the Relationship, Cooperation, and Access/Coordination subscales, or one or more such responses for the Homeless-Specific Needs subscale, as in prior work.[13,22] Resultant variables were compared with Fisher exact and t-tests.

A formal multivariable model combining the new SRFC survey responses with the previously published VA PC clinic and HCH responses was precluded by applicable data security and ethics rules. A proxy for such comparison was developed by presenting the multivariable-adjusted mean totals for each scale from the SRFC sample using the SPSS procedure multiple linear regression, adjusting for gender, Black race, and general self-reported health. For illustration we present these adjusted results alongside the published multivariable-adjusted scores for each of the four subscales, absent formal statistical comparison.

All responses to open-ended questions were scored by the first author, and categories were created at the discretion of the first author.

The authors performed all statistical analyses using SPSS software for Windows (IBM Corp.; version 25.0; Armonk, NY).

Results

Characteristics of the study sample

The final study sample was comprised of 50 respondents. The SRFC sample did not differ from the previously reported VA sample collected in the same community, but the HCH program had a higher percentage of White (49.4%) respondents compared to the SRFC (28.0%) (Appendix A).

The survey sample was predominantly unemployed (62.0%), Black (58.0%), and male (54.0%) (Table 1). At least one night of homelessness in the previous six months was reported by 54.0% of respondents, although 62.0% reported a stable place to live on the day of survey collection. Most respondents (78.0%) described the SRFC as their site for regular primary care. Most reported suboptimal health, with 72.0% of the sample endorsing "good," "fair," and "poor" health.

Survey responses from the SRFC

Unadjusted mean scores for the four subscales were favorable (Table 2). Ratings averaged the highest for the Relationship (3.18 ± 0.40) and lowest for the Cooperation subscales (2.77 ± 0.57) on a 1-4 scale. Ratings were similar to homeless-experienced veterans at a VA PC clinic for all four subscales.[13] However, when ratings were compared across all sites, the HCH program outscored the other sites for the Relationship and Cooperation subscales, and for the Overall average score (all p<.01) (Table 2). For SRFC respondents, unfavorable responses were more common for perceptions of the clinical Relationship (46.0%) and Homeless-Specific site

Table 1. Characteristics of participants in evaluation of primary care experiences for vulnerable patients in a student-run free clinic

Characteristics	All Patients, n (%)
Total number of respondents	50 (100.0)*
Gender	
Male	27 (54.0)
Female	20 (40.0)
Prefer not to say	3 (6.0)
Race	
White	14 (28.0)
Black	29 (58.0)
Mixed	1 (2.0)
Prefer not to say	6 (12.0)
"Are you employed right now?"	
Yes	16 (32.0)
No	31 (62.0)
Prefer not to say	3 (6.0)
"Have you spent one or more nights on the street, in a shelter, or in a transitional program in the last 6 months?	
Yes	27 (54.0)
No	21 (42.0)
Prefer not to say	2 (4.0)
"Do you currently have a stable place to stay?"	
Yes	31 (62.0)
No	16 (32.0)
Prefer not to say	3 (6.0)
Survey completion time	
<15 minutes	44 (88.0)
>15 minutes	3 (6.0)
Prefer not to say	3 (6.0)
"...how often did you feel confused about what the questions were asking?"	35 (70.0)
Never (none of the questions)	35 (70.0)
Sometimes (a few of the questions)	11 (22.0)
Frequently (more than half of the questions)	1 (2.0)
Prefer not to say	3 (6.0)
"Did you trust the statement that your answers are confidential and would not be shared with anyone in the clinic?"	
Yes	43 (86.0)
No	3 (6.0)
Prefer not to say	4 (8.0)
Primary Care Provider	
EAB	39 (78.0)
Other (or not PCP)	7 (14.0)
Prefer not to say	4 (8.0)
"How long have you been coming to EAB?"	
>6 months	23 (46.0)
<6 months	24 (48.0)

Prefer not to say	3 (6.0)
Self-reported health status	
Excellent	4 (8.0)
Very good	5 (10.0)
Good	16 (32.0)
Fair	17 (34.0)

Due to survey responses being optional, some individuals chose not to answer every question. When a question was left blank, it was included in the "Prefer not to say" cohort.
EAB: Equal Access Birmingham; PCP: primary care provider

Table 2. Primary care quality-homeless survey scores compared across sites

	SRFC (n=50)*	VA (n=150)	HCH Program (n=195)	p[†]
Unadjusted PCQ-H Subscale Scores Compared, Mean (SD)				
Subscale Scores				
Relationship	3.18 (0.40)	3.13 (0.49)	3.32 (0.41)	<0.01**
Cooperation	2.77 (0.57)	2.75 (0.70)	2.97 (0.52)	<0.01**
Access/Coordination	3.04 (0.35)	3.12 (0.44)	3.17 (0.40)	0.13
Homeless-Specific Needs	3.11 (0.47)	3.05 (0.51)	3.17 (0.46)	0.07
Overall scores	3.10 (0.36)	3.08 (0.44)	3.22 (0.39)	<0.01**
Multivariable-adjusted PCQ-H Subscale Scores, Mean (SE)				
Subscale scores, adjusted[‡]				
Relationship	3.17 (0.063)	3.26 (0.09)	3.45 (0.09)	-
Cooperation	2.75 (0.090)	2.89 (0.14)	3.15 (0.13)	-
Access/Coordination	3.04 (0.044)	3.24 (0.09)	3.29 (0.08)	-
Homeless-Specific Needs	3.08 (0.081)	3.31 (0.10)	3.38 (0.09)	-
Unfavorable Experience Indicator (%) Comparison				
Unfavorable experience[§]				
Relationship	46.0	41.3	25.3	<0.01**
Cooperation	22.0	30.4	17.1	0.02
Access/Coordination	40.0	34.0	25.8	0.08
Homeless-Specific Needs	42.0	34.0	32.0	0.15

*Each survey item was optional, and some patients did not complete every item on the survey. As a result, some SRFC subscale scores were completed with an n<50. However, every score for the SRFC had n>40; [†]Analysis of variance (ANOVA) for comparison of all 3 continuous scores. Additional post-hoc Tukey HSD test pairwise comparisons are indicated with an asterisk for contrasts between VA and HCH <.05. Pairwise comparisons between SRFC and VA, and between SRFC and HCH program were nonsignificant (all p>.10). Comparison of the categorical "unfavorable experience" is with the chi-squared test; [‡]SRFC responses are adjusted for gender, Black race, employment status, one or more nights of homelessness in past six months, and self-reported health-status in the SRFC patient population. Multivariable-adjusted responses for VA and HCH cohorts are from prior publication[14] and were adjusted for age, gender, Black race, having had one's own domicile (apartment or house) in two weeks, psychiatric symptoms, drug and alcohol risk, general self-reported health, and low income status. Because multivariable-adjusted scores were adjusted for different variables, in different models, no statistical comparison is offered for the adjusted means; [§]Unfavorable experiences based on offering two or more frankly unfavorable responses (i.e. agreeing with a negatively worded item, or disagreeing with a positively worded item) for the Relationship, Cooperation, and Access/Coordination subscales, or one or more such responses for the Homeless-Specific Needs subscale, as previously established.[13] Percentages were generated for SRFC (n=47), VA (n=138-150), and HCH program (n=187-194) patients separately. **Indicates statistical significance.*
SRFC: Student-Run Free Clinic; VA: Veterans Affairs; HCH: Health Care for the Homeless; PCQ-H: Primary Care Quality-Homeless; SD: standard deviation; SE: standard error; HSD: Honestly significant difference

Table 3. Items drawing the highest proportion of frankly unfavorable responses among SRFC patients

Item	Frankly Unfavorable Response (%)*
The primary care and other healthcare providers need to communicate more with each other.	56.4
I can get into touch with my provider when I need to.	45.2
I worry about whether my primary care provider has the right skills to take good care of me.	38.3
At this place, I always have to choose between my healthcare and other challenges in my life.	38.1
If I walk into this place without an appointment, I have to wait too long for care.	29.3
Staff at this place treats some patients worse if they think they have addiction issues.	27.3

*Frankly Unfavorable item response based on categorical "Strongly Agree" or "Agree" with a negatively worded item, or "Strongly Disagree" or "Disagree" with a positively worded item.
SRFC: Student-Run Free Clinic

Table 4. Aspects most liked by SRFC patients

Aspects most liked about clinic*	Frequency (n=41)
Staff is friendly and helpful (interpersonal care)	25
Convenience	7
Free medicines/services	6
Nondescript positive statements ("everything is good")	2
Facilities	1

*Qualitative responses of patients were categorized subjectively at the discretion of the authors.
SRFC: Student-Run Free Clinic

Needs (42.0%) than for the other two subscales (Table 2). The SRFC site did not differ from the VA regarding unfavorable experience prevalence. However, an unfavorable relationship experience was more common at the SRFC site compared to the HCH site (p<0.01) (Table 2).

Unfavorable experiences as the SRFC

Investigation of individual items found six where more than 25% of SRFC respondents responded unfavorably (Table 3). These included unfavorable perceptions of inter-provider communication (56.4%), ease of contact with provider (45.2%), provider caregiving skills (38.3%), challenges of competing priorities in seeking health care (38.1%), long wait times (29.3%), and provider treatment of patients with addiction issues (27.3%). Conversely, several items obtained a very low (<5%) unfavorable response percentage. Among these were patients' beliefs that they could be honest about substance use, that they could obtain care without missing meals or a place to sleep, that their health needs were never doubted, that they could work out disagreements with their provider, that the care provider would make decisions based on a patient's best interest, that they received information about available services, that staff seems to like working with people who have been homeless, and that the clinic still found a way to help patients if they missed an appointment (Appendix B).

Responses to open-ended questions

Qualitatively favorable statements (n=41) focused on interpersonal skills of students (n=25), convenience (n=7), and free service cost (n=6) (Table 4). Unfavorable statements (n=21) touched on "long wait times" (n=8), facility limitations (n=2), disruption from other patients (n=2), and lack of stronger pain medications (n=2). See

Appendix C.

Discussion

This study examined care ratings from patients in a SRFC compared to those from homeless-experienced patients at a nearby VA PC clinic and a long-established HCH program. Contrary to our hypothesis, SRFC ratings did not differ significantly from those of the VA PC clinic. In analysis of variance (ANOVA), mean scores and the likelihood of unfavorable responses for the Relationship and Cooperation subscales differed in ways that favored the HCH program.

The HCH program seemed to outperform the SRFC and the VA PC clinic in this study, much as it outperformed VA clinics in a prior study.[13] It is unclear which aspects of the HCH program led to this difference, but the HCH program does incorporate multidisciplinary teams, outreach to multiple locations, and capacity to respond to tangible patient needs. These services have been shown to matter for persons who are homeless, and the SRFC only offered some of them due to limited experience and resource base.[23] The SRFC had operated for three years with a $25,000 budget, compared to the HCH program, which opened in the mid-1980s and exceeded $30,000,000 in revenue in 2016. The SRFC scored comparably to a VA PC clinic, suggesting similar patient experiences.

We believe the features of the SRFC service model can explain our findings. The SRFC operated once weekly, which may explain the 45.2% unfavorable responses to the item evaluating ease of contacting SRFC providers (Table 3). Because the SRFC's volunteer attending physicians took time to teach students, wait times were substantial. Furthermore, medical students perform the initial evaluation of a patient, which might account for the 38.3% unfavorable rating of perceived provider skill (Table 3). Qualitative responses favored the staff's interpersonal skills (Table 4), possibly reflecting the extra time between clinicians and patients. Patients rated coordination of care less favorably, with 56.4% reporting that their providers needed to communicate better with each other (Table 4). This may reflect the SRFC's distance from the university hospital and limited referrals to specialty clinics, as

the latter only accept referrals from traditional primary care providers. Unfavorable perceptions of SRFC wait times and accessibility were also present in a 2010 patient satisfaction study in a South Carolina SRFC.[7]

Finally, a high percentage of SRFC patients reported having to "choose between health care and dealing with other challenges in my life," a problem well-documented in homeless health research.[24] Still, positive observations predominated among the free text comments (41 positive and 21 negative).

Since the completion of this study, the SRFC has attempted to address wait times by adding an additional clinic and physician per week. The SRFC transitioned to the electronic medical record (EMR) of its affiliated academic medical center, allowing SRFC providers to see recommendations of consultants after SRFC patients were hospitalized.

Limitations

One survey administrator also served as a provider, and ratings could have been influenced by favorable memories or social desirability bias. However, most patients (86%) affirmed trust in the survey's confidentiality. In addition, recruitment in the clinic waiting area could bias toward satisfied "return customers" and underrepresent respondents who disliked the clinic. This form of selection bias may be less likely because many respondents were uninsured (80.2%) in a state with few options for indigent care.[25] Statistical power was limited, as fewer participants were recruited at the SRFC site (n=50) than the HCH program (n=195) and VA PC clinic (n=150) given the SFRC's limited funding and research personnel. Finally, ethical restrictions on sharing of data files from the previously published VA study meant that comparative analyses could not include statistical models adjusted for patient characteristics. However, some reassurance is gained from a prior report that patient characteristics did not meaningfully influence site comparisons in a study of 602 respondents.[13]

Implications

This study found that an indigent population attending an SRFC rated care at least as favorably as homeless-experienced patients attending a

VA PC clinic. However, respondents in both settings rated care somewhat worse than a well-established HCH program. Future studies should assess what SRFCs achieve beyond patient visits, and whether SRFCs can deliver primary care experiences approaching that of publicly-funded providers. Future comparisons of PCQ-H scores among multiple SRFCs could suggest which characteristics of SRFCs enhance patient experiences. This study suggests some systemic limitations to what SRFC's can achieve, including logistical barriers that impede referrals of patients to specialty clinics. Thus, the present data may identify a ceiling to the primary experience scores attainable by clinics staffed wholly by volunteers. Though the SRFC's longer wait times appear to have inconvenienced patients, they did provide opportunity for this volunteer survey.

SRFCs stand to gain by evaluating the PC experiences of their patients to identify opportunities for improvement in light of their unique challenges. The present study underscores that such clinics are likely to remain relevant to low-income populations.

Disclosures

Dr. Kamal has worked with the student-run free clinic that is referenced in this manuscript.

References

1. Garfield R. The Coverage Gap: Uninsured Poor Adults in States that Do Not Expand Medicaid – An Update. [Internet]. San Francisco (CA): Kaiser Family Foundation. [Accessed 11 March 2018]. Available from: /files.kff.org/attachment/issue-brief-the-coverage-gap-uninsured-poor-adults-in-states-that-do-not-expand-medicaid-an-update-2 LINK

2. Ryskina KL, Meah YS, Thomas DC. Quality of diabetes care at a student-run free clinic. J Health Care Poor Underserved. 2009;20(4):969-81. LINK

3. Smith S, Thomas R III, Cruz M, et al. Presence and Characteristics of Student-Run Free Clinics in Medical Schools. JAMA. 2014;312(22):2407-10. LINK

4. Darnell JS. Free clinics in the United States: a nationwide survey. Arch Intern Med. 2010;170(11):946-53. LINK

5. Butala NM, Murk W, Horwitz LI, et al. What is the quality of preventive care provided in a student-run free clinic? J Health Care Poor Underserved. 2012;23(1):414-24. LINK

6. Zucker J, Gillen J, Ackrivo J, Schroeder R, Keller S. Hypertension management in a student-run free clinic: meeting national standards? Acad Med J Assoc Am Med Coll. 2011;86(2):239-45. LINK

7. Ellett JD, Campbell JA, Gonsalves WC. Patient satisfaction in a student-run free medical clinic. Fam Med. 2010;42(1):16-8. LINK

8. Hargraves JL, Hays RD, Cleary PD. Psychometric properties of the Consumer Assessment of Health Plans Study (CAHPS) 2.0 adult core survey. Health Serv Res. 2003;38(6 Pt 1):1509-27. LINK

9. Safran DG, Kosinski M, Tarlov AR, et al. The Primary Care Assessment Survey: tests of data quality and measurement performance. Med Care. 1998;36(5):728-39. LINK

10. Kent F, Keating J. Patient outcomes from a student-led interprofessional clinic in primary care. J Interprof Care. 2013;27(4):336-8. LINK

11. Steine S, Finset A, Laerum E. A new, brief questionnaire (PEQ) developed in primary health care for measuring patients' experience of interaction, emotion and consultation outcome. Fam Pract. 2001;18(4):410-8. LINK

12. Vitta S, Kertesz S. Results of a Community Survey of Access to Care in Birmingham (Survey of 2013).; 2015. LINK

13. Kertesz SG, Holt CL, Steward JL, et al. Comparing homeless persons' care experiences in tailored versus nontailored primary care programs. Am J Public Health. 2013;103 Suppl 2:S331-9. LINK

14. O'Connell JJ, Oppenheimer SC, Judge CM, et al. The Boston Health Care for the Homeless Program: a public health framework. Am J Public Health. 2010;100(8):1400-8. LINK

15. Kertesz SG, Pollio DE, Jones RN, et al. Development of the Primary Care Quality-Homeless (PCQ-H) instrument: a practical survey of homeless patients' experiences in primary care. Med Care. 2014;52(8):734-42. LINK

16. Kontopantelis E, Roland M, Reeves D. Patient experience of access to primary care: identification of predictors in a national patient survey. BMC Fam Pract. 2010;11:61. LINK

17. Paddison C, Elliott M, Parker R, et al. Should measures of patient experience in primary care be adjusted for case mix? Evidence from the English General Practice Patient Survey. BMJ Qual Saf. 2012;21(8):634-40. LINK

18. Salisbury C, Wallace M, Montgomery AA. Patients' experience and satisfaction in primary care: secondary analysis using multilevel modelling. BMJ. 2010;341:c5004. LINK

19. DeSalvo KB, Bloser N, Reynolds K, He J, Muntner P. Mortality prediction with a single general self-rated health question. A meta-analysis. J Gen Intern Med. 2006;21(3):267-75. LINK

20. Idler EL, Kasl SV. Self-ratings of health: do they also predict change in functional ability? J Gerontol B Psychol Sci Soc Sci. 1995;50(6):S344-53. LINK

21. Miilunpalo S, Vuori I, Oja P, Pasanen M, Urponen H. Self-rated health status as a health measure: the predictive value of self-reported health status on the use of physician services and on mortality in the working-age population. J Clin Epidemiol. 1997;50(5):517-28. LINK

22. Wensing M, Grol R. Single and combined strategies for implementing changes in primary care: a literature review. Int J Qual Health Care J Int Soc Qual Health Care. 1994;6(2):115-32. LINK

23. Goyer C. Key Elements of Integrated Care for Persons Experiencing Homelessness: A Guide for Health Care for the Homeless Providers. National Health Care for the Homeless Council; 2011. LINK

24. Gelberg L, Gallagher TC, Andersen RM, Koegel P. Competing priorities as a barrier to medical care among homeless adults in Los Angeles. Am J Public Health. 1997;87(2):217-20. LINK

25. Hess M, Layfield S, Beg MA, Bodie B, Kennel T. Equal Access Birmingham Demographic Data. Published online 2016. LINK