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Retention of Medicare Patients: Approaches for Federally-Qualified Health Centers

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BACKGROUND

Access to healthcare services for Medicare patients remains a public health issue and little is known for beneficiaries who use FQHCs (Chang et al., 2016). In 1989, Congress established the Federally Qualified Health Centers (FQHCs) program with the objective of supporting community health centers with primary care services delivery in low-income areas (Lavelle et al., 2018). FQHCs are based on the FQHC Prospective Payment System (PPS) for medically necessary primary health services and qualified preventive health services furnished by an FQHC professional (Lavelle et al., 2018). By 2011, the number of FQHCs exceeded 5000 in the United States (Chang et al., 2016); the number of Medicare beneficiaries seen at FQHCs experienced a dramatic increase between 2001 to 2011 (from 745,000 to nearly 1.6 million)(Goldman et al., 2012). Older adults from low socioeconomic status (SES) and other groups will experience challenges in Social Security and Medicare, for families, businesses, and health care providers.

(U.S. Census Bureau, 2014). According to the Centers for Disease Control and Prevention, the aging population of Americans aged sixty-five years in 2016 accounted for 49 million US adults (15% of the population). It is estimated that by 2060, this number may reach 98 million, or

nearly 25% of US residents (Centers for Disease Control and Prevention, 2019). Thus, it is important to link Medicare patients to services provided by FQHCs not only to insure that they are receiving proper treatment or referral to specialty care, but also FQHCs depend on Medicare patients for their operation and sustainability (Centers for Medicare & Medicaid Services, 2018; Chang et al., 2016). Due to the mandated comprehensive care Medicare beneficiaries receive during their visits, FQHCs are capable of detecting and preventing health problems early because they offer a unique opportunity for patients to receive comprehensive, coordinated care in their communities (Leos, 2012). Functioning as a "one-stop shop" for health care needs, FQHCs may potentially be an ideal place for older adults to receive quality geriatric care. Although there has been a number of studies focusing on populations under age 65 (Bhatia et al., 2013; Falik et al., 2001; Mcclaskey, 2010), there is little research on the topic. There is no study of older adults who rely on FQHC services from a population-based perspective (Chang et al., 2016). Medicare patients suffering from multiple chronic diseases, unable to access FQHCs in their communities, or seek specialty care are some examples of public health issues older adults may face over the years. Research has shown that many Americans who survive to age 65 can expect to need and use long-term services and supports (LTSS) with an average cost of $138,000 in future LTSS costs ((*Long-Term Services and Supports for Older Americans: Risks and Financing Research Brief | ASPE*, n.d.)). Therefore, the purpose of this article is to address the barriers that Medicare patients face to have access to healthcare services in their community. Since it is crucial to understand characteristics and service use of Medicare beneficiaries who use FQHCs, this article will make recommendations for federally qualified health centers to consider when proposing, implementing, or designing geriatric care programs.

METHODOLOGY

In the United States, community health centers provide primary care for 1 in 7 Medicaid enrollees (National Association of Community Health Centers, NHCHC, 2014; Gao, 2017). For this article, we used data collected through anonymous internal and external surveys of pre-Medicare and Medicare-eligible adults ages 50 and older. Internal surveys were distributed to every patient upon check-in at the CHN Lower East Side and Washington Heights sites in New York City. It is indisputable that the sample group is representative of not the general population, but a specific sub-group, namely a particularly vulnerable population of community health center patients in New York City. In comparing socioeconomic factors with the national average, we can see a stark lack of education in the sample, we can see that the population that this sample represents faces several challenges.

STATISTICS

The data consists of categorical responses to a survey questionnaire with a sample size $N=123$. The data was transformed from an Excel file provided by Survey Monkey into a Pandas

DataFrame for analysis. The study is on a cross-sectional survey where respondents were chosen from a convenience sampling of patients at two local community health centers in New York City. The design of the questionnaire has yielded nominal data of interest, and some ordinal data that shows little importance.

Due to the nature of the convenience sampling from two health centers, we cannot infer proper randomness in our sample, and as such we have not accurately identified a population to which we are able to generalize our findings. Nonetheless, further investigation of the patients of community health centers is warranted, and while our findings may be limited, they show some interesting and important aspects to consider for future research. The design of the questionnaire included categorical and ordinal response questions which were binned prior to conducting the survey, nullifying its usefulness in quantitative analysis. As the primary purpose of this survey was to aid in investigation, there is great potential for a follow-up survey on a similar sample with new questions designed to measure the degree of effect of these concerns.

An alpha value of 0.05 was considered significant in determining similarity when compared with the general population of the United States. Statistical analysis was performed using modules in the Python v. 3.7. Jupyter notebook files containing the exploratory data analysis, along with the survey data can be found at the GitHub repository for the work (Lindeman, 2020)

Target Study Population

Our internal and external surveys targeted adults aged 50-64, identifying the specific health care needs, concerns, and utilization trends of Medicare-eligible and pre-Medicare patients. Our findings resulted in practical solutions Community Healthcare Network (CHN) may consider when proposing, implementing, or designing geriatric care programs for older adults. These recommendations may also apply for other similar clinics and health centers in the United States. The recommendations serve as an opportunity to address gaps in care and identify actionable and innovative ways in which geriatric health services can be delivered.

Of the questions posed to our sample, many bring interesting insights into hurdles that affect our respondents. Significant deviations from the overall US population were observed, identifying challenges to this population.

Racial Bias

Our sample is overwhelmingly skewed towards the Hispanic patients. The racial makeup of our sample differs strongly from the US general population (*U.S. Census Bureau QuickFacts: United States*, n.d.) as listed in Table 1..

Table 1.

Sample and US Population Racial Makeup.

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Race	Percent Distribution in Sample	Percent Distribution in US Population	t-statistic	p-value (rounded to 3 places)
Hispanic	56.56	18.5	-400.57	0.001
Black	20.49	13.4	-364.85	0.001
Asian	13.93	5.9	-185.83	0.001
White	9.84	60.1	-2250.87	0.001

TABLE 1 Sample and US Population Racial Makeup

Note. Data for Racial Distribution in the United States from U.S. Census Bureau (n.d.).

Education

The most striking characteristic of our sample is the undeniably low educational achievement across all categories. In comparing the education of the sample with that of the US population, a new DataFrame was created from the answers to the question 'What is your highest level of education?'. This returned an array for each category, which we compared with the US national statistics on education from March 1995 (Day & Curry, 1996). The choice of using such an old dataset is a naive way to help control for the increase in education across the general population, and the assumption that the sample attained its peak education before the age of 25 years, shown in Figure 1. It is worth noting that according to the 1995 data, metropolitan residents are significantly more likely (82.9% vs. 76.9%) to have at least completed high school, along with having attained a bachelor's degree (25% vs. 14.8%) when compared with non-metropolitan residents, further indicating the comparatively uneducated nature of our sample.

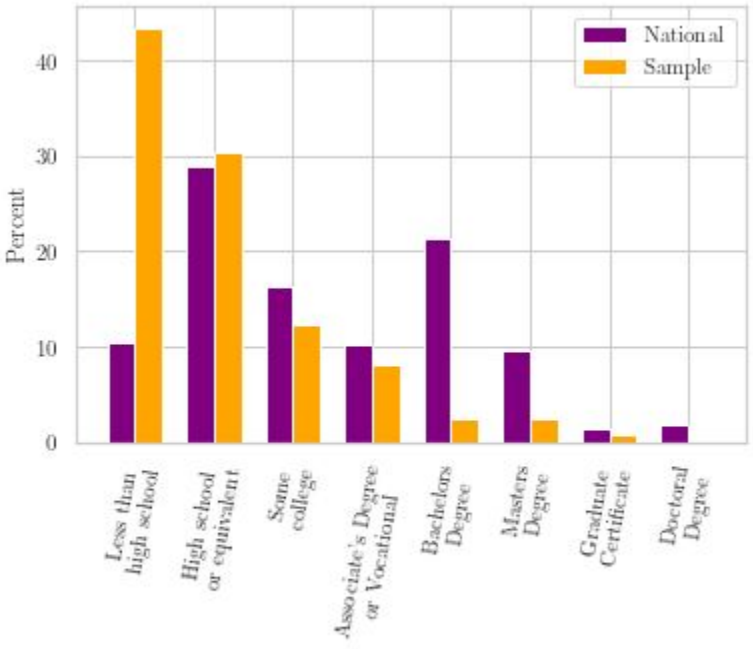

FIGURE 1 National and sample educational attainment from survey, $n = 122$, Pearson Chi-Square $p < .01$

Figure 1. National and sample educational attainment from survey, n=122, Person Chi-Square $p<0.01$. Data for the United States from Day, J., & Curry, A. (1996).

The result of comparing education levels yielded a significant difference from the national average. The sample population has a dramatically higher incidence of having not completed high school, and significantly lower incidence of education across all other levels. This is further confirmed by a one-sample t test, resulting in $p<\alpha$, indicating that the sample is significantly different from the greater population.

Disease Incidence

The incidence of disease within the sample shows no significant similarity to the US population at large, though a particularly higher incidence of both diabetes and high blood pressure should be noted. The lower incidence of chronic kidney disease, COPD, IBD, IBS, and vertigo is unexplained, and without statistics on the incidence of disease for this particular age group, we expect limited power in extrapolation of the data. In attempting to find similarity with national averages, 1-sample t-tests were performed on incidence of seven conditions against data from various sources, the results of which are shown in Table 2. While three of the results were representative of the general population, four were significantly different.

Table 2.

Sample and US Population Incidence of Chronic Disease (not controlled for age or other factors)

Health Condition	Incidence Within Sample	Incidence in US Population	t-statistic	p-value (rounded to 3 places)
Diabetes (high blood sugar)	28.23	10.5	-251.77	0.01
Arthritis (swelling of the joints)	22.59	23	-604.1	0.01
Heart Disease	11.3	12.1	-420.08	0.01
Depression	11.3	7.1	-244.86	0.01
High blood pressure	53.23	45	-988.41	0.01
Chronic Kidney Disease	2.42	15	-1080.97	0.01
Chronic Obstruction of Pulmonary Disease (COPD)	1.62	6.2	-544.43	0.01
Chron's Disease/Inflammatory Bowel Disease (IBD)	0.81	1.3	-160.2	0.01
Ulcerative Colitis/ Irritable Bowel Syndrome (IBS)	0.81	10	-1239	0.01
Vertigo	0.81	5.4	-668.6	0.01

TABLE 2 Sample and US Population Incidence of Chronic Disease not controlled for age or other factors

Note. Data for Diabetes from Diabetes Statistics (n.d.), for Arthritis from Arthritis | CDC (n.d.), for Heart Disease from FastStats, for Depression from Depression Statistics - Depression and Bipolar Support Alliance (n.d.), for High Blood Pressure from Estimated Hypertension Prevalence, Treatment, and Control Among U.S. Adults | Million Hearts® (n.d.), for Chronic Kidney Disease from CDC (2019), for COPD from Elfein, John (2019), for IBD from AHRQ Quality Indicators Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions (2001), for IBS from AHRQ Quality Indicators Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions (2001), for Vertigo from Agrawal, et al. (2009)

Factors in Choice

Considering the desires of patients is essential in providing care. The survey asks for respondents to list those concerns important to them in choosing a provider. There are 11 answers to choose from, and respondents are encouraged to check all that apply. Over 85% of respondents indicated that the location and language of the provider was important in choosing a provider. This may indicate that patients have limited access to choose providers, as accessibility and comprehension are necessary for effective care. It is equally possible that this need is being met but is nonetheless a concern for patients and should be followed up with clearer questions regarding their access to providers who speak the patient's primary language.

Without considering the general logistical concerns of location and speaking the same language (109 and 107 responses), we see several interesting concerns, particularly those of cost of care (and insurance), as well as convenience issues that may indicate necessity for some patients, such as evening and weekend hours, and the ability to receive primary and specialty treatment at the same facility. The primary consideration here is that the difference between convenience and necessity is the resources available to the person concerned, and factors such as transportation or other assistance may be limited or restricted to weekend or evening hours, as illustrated in Figur 2.

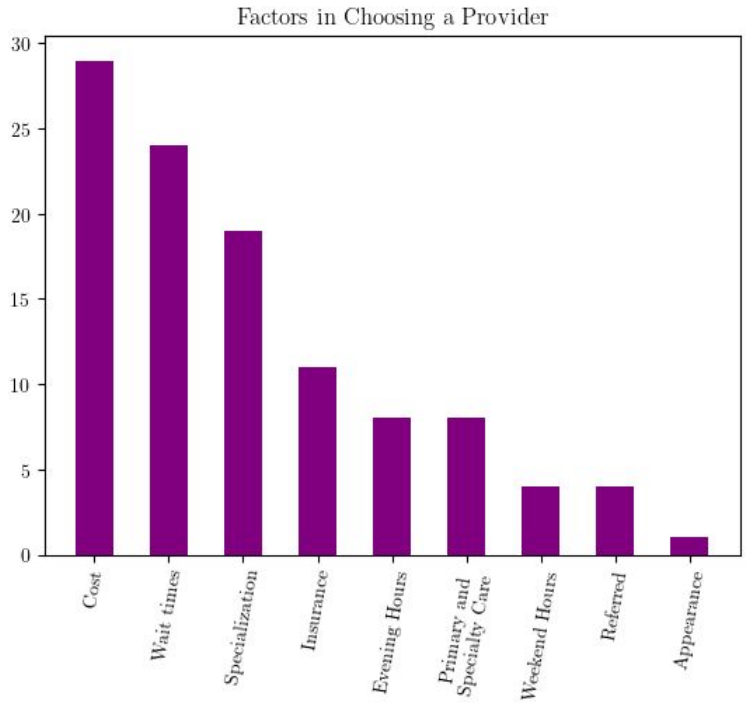

FIGURE 2 Important services as indicated by survey
n = 123
Language and Location removed

Figure 2. Importance Services as indicated by survey responses, n=123, 'Language' and 'Location' removed.

LIMITATIONS

Categorical Responses

By presenting the survey answers as categorical, this was primarily a fact-finding mission. The responses recorded give insight into concerns within the population that warrant further investigation. Without quantitative data, establishing a concrete baseline for the efficacy of any intervention is highly limited. Additionally, binning survey answers in the collection process nullifies the power of the quantitative variables.

Uniqueness

The study provides insight to unmet needs in a community health center patient cohort. This information is essential to understand service demand and increase awareness of these shortfalls. Nonetheless, limitations need to be recognized; the estimates of incidence rates come from a relatively small sample, due to limitations in design and access to participants. That said, this preliminary data highlights some unmet needs in the community and deserves further investigation on a larger scale, preferably with access to diagnosis reports from official sources.

Comparing the sample to the national average fails to adequately control for the impact of the results as the age, race, and ethnicity of the sample are not representative of the national population. Further, sampling from only two community health centers in NYC means that our population for generalization being community health center patients in NYC is unlikely to be properly represented, as peculiarities in the communities sampled may obscure trends in the population. This is an area of importance for CHN in particular, but should not be extrapolated.

Answers of preferences are of value in identifying problems experienced by the sample, however we cannot assume that these conditions and concerns can be applied to a wider community writ large without being able to identify the larger population more precisely. Further qualitative measures and root cause analysis may be more effective at discerning solutions to overcoming the issues faced by these patients.

DISCUSSION

A more thorough identification of the population as a whole will be essential in determining the robustness of any inquiry into the needs of a sample of said population: that of geriatric CHN patients. This can be achieved by acquiring a truly random sample selection from the population. By administering the survey to a proper sample we can be assured that it is

representative of the population and will be able to more accurately assess the value of implementing treatments to the provide services.

In the follow-up study, survey questions should be modified to produce the most robust data, particularly by allowing for free-response answers to questions with a reasonable expectation of response. For instance, in querying the age of patients (Q18), we understand that a free-response will yield an integer which creates a condition amenable to further quantitative analysis, yet allows for categorization (e.g. senior, adult, child) if desired. The following questions from the original survey should be re-framed to allow for free responses:

2, 3, 18

Questions that ask for the most important factor should not allow for multiple responses from the same respondent, as in Q6. This question (6) is of particular interest as it identifies potential shortfalls in the current system and should certainly be investigated further. We propose that 4 new questions are posed in place of Q6:

1. “Which of these are most important to you when choosing a doctor?” (choose 1)

2. “Are any of the following also important to you when choosing a doctor?” (choose many)

3. “Which, if any, of the services you’ve identified are not being met?” (choose many from selection)

4. “Which unmet need is most distressing for you as a patient?” (choose 1 from selection)

In this way we will be able to identify the most important considerations for each participant, identify unmet needs, and identify other, possibly important but less urgent, needs that CHN patients have. 35% of respondents state that they are most likely to get help with a health problem at the emergency room. Greater clarification would be highly valuable in determining whether this is a result of greater incidence of injury in the sample or if some other factor is causing patients to seek treatment at emergency departments (ED). While visits to the ED of persons over age 65 is 56,803 per 100,000 in the general US population (*Trends in Hospital Emergency Department Visits by Age and Payer, 2006-2015 #238*, n.d.), this does not specify that ED visits are a source of primary care, or that these are unique visitors. The EDs, especially in overwhelmed circumstances like the current COVID-19 pandemic, benefit from any treatment that would reduce unnecessary visits, such as for check ups and general care, so further investigation of this issue may be valuable in freeing up ED resources.

RECOMMENDATIONS

Supporting community health centers (CHCs) and their services for patients—especially older adults—are essential for rural and inner-city communities. CHCs are often prepared to provide

culturally appropriate health care at little to no cost to patients accessing these services (Leos, 2012).

The following points are some lessons learned from the implementation of CHN Geriatric program and may be used for other similar community health care centers:

1. **Medication Intake:** Internal data show the program may help in reducing patients' medication intake. With the assistance of the nursing staff members, patients were able to follow proper doses and avoid taking the wrong prescriptions.

2. **Marketing Healthcare Services:** CHN and many community health centers in New York City offer a myriad of health care services and programs in addition to primary care. However, even though patients utilizing the resources had access to other multidisciplinary doctors (e.g., foot doctor, dentist, eye doctors), many did not use other services. Due to low health literacy, some patients did not understand the importance of certain services that are beneficial for their overall health and well-being. Thus, a continuum effort to mail brochures and employ other marketing strategies are important for being current and future patients.

3. **Glucose Machine Usage:** Some patients were not aware of how to use glucose machines and/or may not be aware of that option. Some diabetes patients did not know how to use glucose machines. To solve this issue at CHN, brochures and provide patients ample opportunities to use these innovative methods for monitoring under the supervision of a health care provider.

4. **Documentation:** Proper documents and build rapport. The nurse was able to follow-up and get referrals from their health providers. Moreover, files of patients were scanned and added to the patient's file.

5. **Language Barrier:** Hiring staff and/or ensuring this is accessible to interpretive services should be part of any new programs.

6. **Privacy:** Assuring there is a space that ensures patients' privacy is critical. This is important especially for open spaces (e.g., computer labs, cafeteria, etc).

CONCLUSION

Addressing the barriers that Medicare patients face to have access to healthcare services remains a public health issue in the United States, particularly in Federally Qualified Health Centers (FQHCs). The data collected and presented in this paper shows a unique population that presented a set of variables that demand further investigation.

The framework for follow-up study includes more comprehensive data acquisition by including coding for each location the respondents were visiting in order to control for concerns of patients of particular clinics. The study should include better randomization, particularly by sampling a larger number of clinics, to provide better power of the analysis. Many questions in the original survey have yielded little to no interesting data, allowing future surveys to be more concise without losing informative value. Candidate questions for elimination include [4, 5, 8, 9, 18]. In the case of eliminating Q18, subjects should be qualified by ascertaining that they are 65 years of age or older. In the case of not eliminating Q18, the response should be open ended as a continuous variable, to be most useful. Likewise, Q2 and Q3 should be asked for continuous variable response to be meaningful. Qualitative investigation of troubling responses, as in dissatisfaction with service, should be undertaken to ascertain which needs are being blatantly unmet, as asked in Q5.

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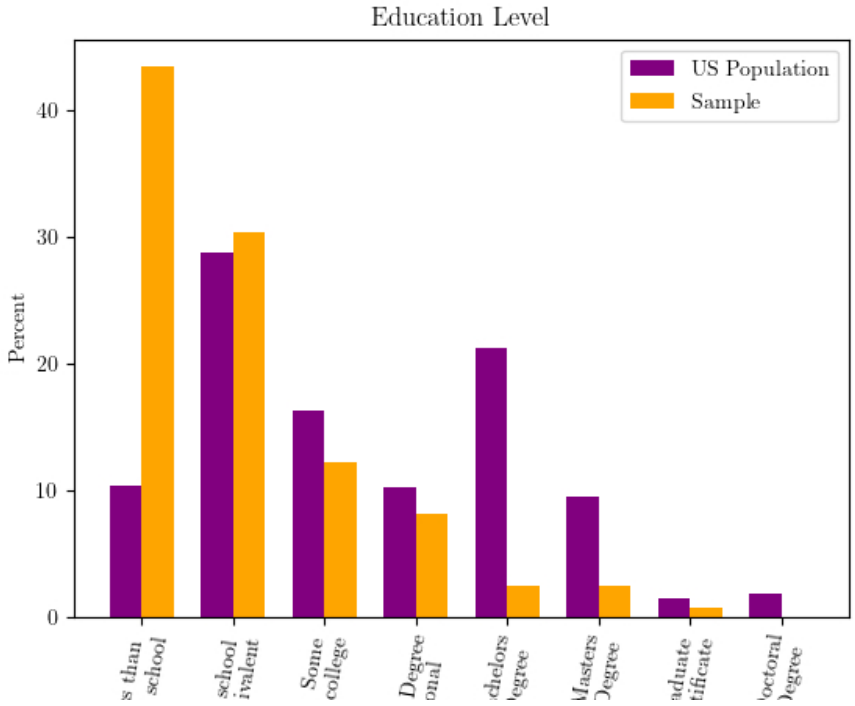

Figure 1 : National and sample educational attainment,n = 122, Pearson Chi-Square < 0.01

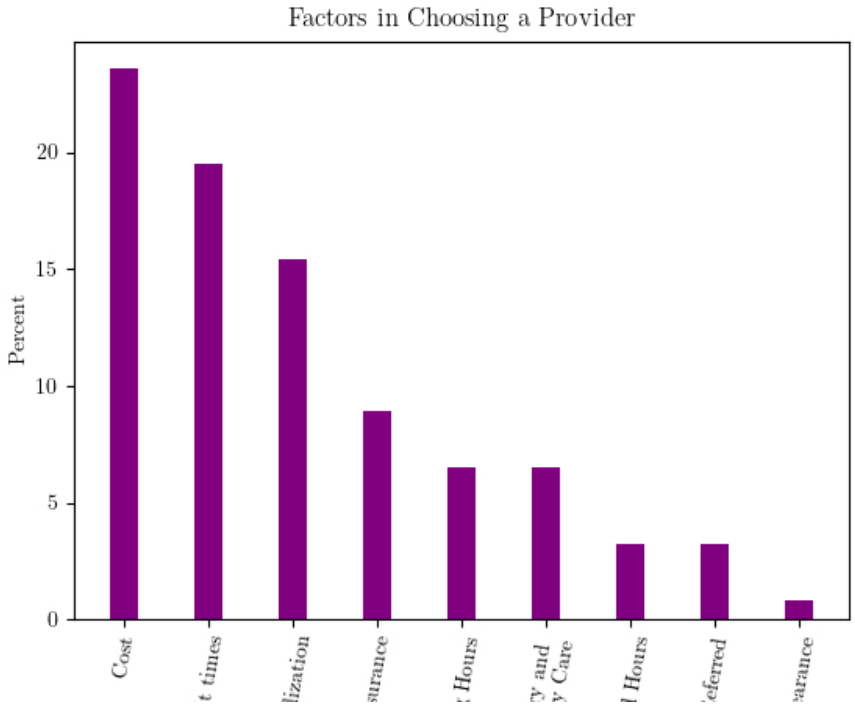

Figure 2: Important Services as Indicated by Surveyn = 123(Language and Location removed)

Race	Percent Distribution in Sample	Percent Distribution in US Population	t-statistic	p-value (rounded to 3 places)
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