Retrospective Analysis of Absenteeism within Primary Care and Psychiatry Divisions at a FQHC: A Quality Improvement Project

Miani Giron

The Diane and Dorothy Brooks Foundation and the David Geffen School of Medicine at UCLA

Learning Objective

- Explore various patient sociodemographic factors and clinic scheduling practices for statistical association with absenteeism at a federally qualified health center (FQHC)
- Identify most at-risk sub populations within an at-risk patient population that could benefit most from increased efforts to maximize appointment adherence

Background

Absenteeism in the clinical setting refers to routine appointment non-adherence, this term is used interchangeably with "nonattendance", "missed appointments", and "no-shows". Absenteeism constitutes a complex challenge worthwhile investigation given its adverse effects on patient health outcomes and its subsequent exacerbation of health disparities.

Methods

Appointment-level data between July 14, 2019 and February 20, 2020 were extracted from the electronic medical record (EPIC)**.** A scheduled appointment was identified as "missed" if the medical record indicated an end of day appointment status of "no show". Chi-square Test for Independence was utilized to individually analyze the following six categorical variables for a relationship with missed appointment status: age group, sex, ethnicity, race, housing status, and booking lead time.

Results

This analysis consisted of 23,146 patients (mean age=45, 42.1% male) that generated 63,587 primary care appointments, and 247 patients (mean age= 44, 48.2% male) that generated 1,188 psychiatric appointments from 07/14/2019 to 02/20/2020. The no-show rate for psychiatry and primary care appointments were 19.95%. and 18.4%, respectively. Analysis of missed primary care appointments yielded the following results: age group, $\chi2$= (4, n = 63587) = 588.850, sex, $\chi2$ (2, n = 63587) = 55.138, ethnicity ,$\chi2$ (2, n = 63587) = 628.516, race, $\chi2$ (4, n = 63587)= 607.193, housing status, $\chi2$ (1, n = 63587) = 76.487, and booking lead time, $\chi2$ (2, n = 63580) = 2178.148, all p<.000. Analysis of missed psychiatry appointments yielded the following results: age group, $\chi2$ (3, n = 1188) = 17.068, p =.001, sex, $\chi2$ (1, n = 1188) = 0.946, p =.331, ethnicity, $\chi2$ (2, n = 1888) = 2.63, p=.268, race, $\chi2$ (4, n = 1188) = 9.843, p =.043, housing status, $\chi2$ (1, n = 1188) = 19.523, p =.000, and booking lead time, $\chi2$ (2, n = 1188) = 9.853, p = .007.

Figures/Tables

Table 1: Sociodemographic Profile of Unique Patients Scheduled at Saban Community Clinic

		Primary Care (Total)	Psychiatry (Total)	Primary Care (Nonattenders)	Psychiatry (Nonattenders)
Sample size (n)		n=23,146	n=247	n=7,546	n= 106
Age mean ± SD		45± 16	44 ± 12	44 ± 16	43 ± 12
Age Group	≤ 22 years	8.88%	2.43%	8.7%	3.8%
	23-38 years	24.91%	35.22%	27.8%	38.7%
	39-54 years	34.35%	36.03%	35.3%	34%
	55-76 years	30.67%	26.32%	27.1%	23.6%
	≥ 77 years	1.19%	0%	1.1%	0%
Sex	Females	57.9%	51.8%	57.5 %	47.2%
	Males	42.1%	48.2%	42.5 %	52.8%
Ethnicity	Hispanic	57.6%	28.3%	57.1 %	36.8 %
	Non-Hispanic	34.6%	64%	30.6 %	56.6 %
	Unspecified	5.9%	7.7%	6.6 %	6.6 %
Race	Asian	6.3%	6.1%	4.9 %	3.8%
	Unspecified	9.9%	10.2%	11.1%	14.1 %
	Black	10%	10.1%	11.1 %	11.3 %
	White	73%	73.3%	72 %	69.8 %
	Other	0.8%	0.4%	0.9 %	0.9%
Housing status	Housed	96.9%	93.9%	96.5 %	90.6 %
	Unhoused	3.1%	6.1%	3.5 %	9.4 %

Table 2: Significant Factors Associated with Increased No Show Rates

	Primary Care, No Show Rate	No Show Rate	Psychiatry, No Show Rate	No Show Rate
Age Group	23- 38 years old	24%	≤ 22 year old	41%
Housing Status	Unhoused	26%	Unhoused	40.6%
Ethnicity	Unspecified	24%	-	-
Race	Black/African American	23%	Black/African American	27%
Booking Leadtime	≥ 3 days	22%	≥ 3 days	21%
Sex	Male	20%	-	-

Discussion

The data supports that the patients within each department have distinct risk factors. This supports the need for efforts to maximize appointment adherence to primary care and psychiatry appointments to be appropriately tailored to its target audience. Interventions to reduce the frequency of missed appointments within each department must prioritize certain risk factors differently.

In summary, risk factors for nonattendance in primary care (in descending order) include, homelessness, younger age (38 years and under), unspecified ethnicity, Black/African American race, booking leadtime of three or more days, and male sex. The risk factors for nonattendance in psychiatry (in descending order) include, younger age (38 years and under), homelessness, Black/African American race, and booking leadtime of three or more days. Interestingly, sex nor ethnicity were identified as being significant risk factors for missed psychiatry appointments as they were for primary care appointments.

This study's results are consistent with the findings that younger age, low socioeconomic status, and longer booking leadtime are the factors most consistently associated with nonattendance.[3] The finding that Hispanic ethnicity is not a determinant of absenteeism for psychiatry appointments is inconsistent with results from Kruse et al, which support that being Hispanic is one of the five predictors of nonattendance in the psychiatric outpatient setting.[13]

Interestingly, the available systematic reviews of predictors of nonattendance give no mention to housing status as a predictor. This study adds homelessness to the list of determinants of absenteeism.

The risk factors listed above represent the patient/appointment factors that need to be considered when clinic efforts to decrease the frequency of missed appointments are made. In other words, it is necessary to deploy special efforts to engage patients with attributes identified as increasing the incidence of absenteeism.

The other major takeaway of the study is the need to acknowledge clinic factors that negatively impact nonattendance rates, such as the speed in which patients can be seen by a provider. In addressing the problem of medical absenteeism, it is equally important to appropriately identify and address associations beyond patient demographics.

Limitations

Limitations in methodology include the reliance on the assumption that information entered into the electronic medical record is accurate and free of human error, and reliance on a member of the clinic's analytics department for the generation of large data reports. Furthermore, the analytics department did not have the capability to retrieve the prior no-show rate of each patient included in the study, thus this potential determinant was not available for analysis. Additionally, Epic does not distinguish between late cancelations (less than 24 hours) and no shows. Lack of statistical techniques that test differences between two unrelated sample's categorical variables on a nominal scale also posed a limitation in testing significant differences across samples.

Generalizability may be limited since the study was conducted at a single federally qualified health center.

Conclusion

There is a significant relationship between absenteeism and the six variables studied in the primary care division. Within the psychiatry division, a significant association with absenteeism was detected for age group, race, housing status, and booking lead time, however, a significant relationship with nonattendance was not evidenced for sex or ethnicity. The insights provided through this study may inform the design of future interventions and modifications of clinic scheduling practices that seek to reduce the frequency of absenteeism.

References

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