Summer 8-2023

Decreasing No-Show Rates in an Outpatient Specialty Clinic

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N660 Practicum: Quality Improvement and Outcomes Management

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August 4, 2023

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Abstract

Problem: Non-attendance or no-shows of patients in an outpatient clinic is a prevalent occurrence that impacts the quality of patient care and cost utilization in the clinic.

Context: A collaborative effort was undertaken with the clinic nurse manager to implement a quality improvement intervention to reduce patient no-shows in the optometry and otolaryngology clinics. The electronic health record EPIC data analysis revealed language variability in the occurrence of no-shows, indicating the need for improvements.

Interventions: Tools were employed to gather comprehensive information regarding the factors contributing to patient no-shows and identify potential strategies for enhancing communication within the clinic, thereby reducing instances of missed appointments. In addition, patients who did not attend their appointments offered suggestions on communication strategies that could effectively reduce the number of missed appointments in the future.

Measures: The data collection encompassed the patient reasons for no-shows. Individuals who failed to attend their appointments provided recommendations regarding communication strategies that could effectively discourage future instances of missed appointments.

Results: The data analysis indicated that the most common reason for no-shows was the patients' failure to recall their scheduled appointments. To minimize the occurrence of missed appointments, patients commonly recommended receiving text messages one to two days before their scheduled appointment. A positive correlation was identified between patients who did not have access to MyChart, a platform that enables the transmission of appointment reminders via text messaging, and an increased frequency of missed appointments.

Conclusion: The optimal approach for reducing patient no-show rates entails providing patients with comprehensive education on the utilization of MyChart, a platform that offers text messaging in advance of their scheduled appointments. Empowering patients by equipping them with the necessary tools to access MyChart ensures they can effectively manage their healthcare.

Keywords: no-show rates, outpatient clinic, patient perception

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Personal Leadership Statement

The culmination of my life experiences and education has led me to become who I am today. I strive to live a life of authenticity, not only as a person but also as a nurse leader. Living authentically means being true to myself in relationships. It involves acting, behaving, and feeling in ways that align with my values and internal states. Establishing a valuing personal connection is crucial in my personal and professional life. These interactions offer opportunities for both professional and personal growth. While authenticity is a vital trait, as a nurse, improving the lives of others gives me the experience of achieving a sense of satisfaction rooted in the recognition that my conduct contributes to improving the lives of others.

As a nurse leader, my vision of leadership is a transformative process that includes providing unwavering dignity and respect to patients, developing systems, prioritizing individual needs, and recognizing and appreciating the work carried out by nurse. As a nurse leader, I believe that honesty and forward-thinking are essential qualities that can inspire and propel a vision of unlimited possibilities for the future. Being a nurse leader means being the glue that holds the team together and drives the goals of the team and the organization. My vision for leadership in the future of nursing is a dynamic process that empowers me to be an influential agent of change, inspiring hope for everyone involved in the healthcare field.

It is essential as a nurse leader to explore quality improvement projects as they can enhance patient healthcare outcomes, ultimately improving the quality of life for individuals. Following a discussion with the nurse manager regarding quality issues, it was determined that interventions were required to reduce the number of patients who missed appointments. This conclusion was based on the analysis of patient no-show data. The selected quality improvement project focused

on decreasing no-show rates for a vulnerable population in a specialty outpatient clinic. This project exemplifies nurse leadership qualities, particularly a dedication to continuous learning. The project was driven to improve patients' continuity of care and overall health by implementing interventions to reduce no-show rates.

The quality improvement project aligns with my altruism, commitment, diligence, and faith values. Incorporating these values establishes a framework that provides support and enhances the idea's credibility that improving quality outcomes can significantly benefit patients. When improvements are made to help patients, this positive paradigm shift ripples throughout the microsystem, ultimately impacting the whole organization.

Background

Health care is dynamic with the ebb and flow of system processes that open the door for inconsistencies in the delivery of services and cost utilization. Delayed and interrupted assessments and treatments impact patient health outcomes. Investigating avenues to enhance care delivery offers opportunities to optimize the patient's health and well-being.

One factor affecting the quality of healthcare delivery is no-shows. A no-show occurs when a patient fails to appear for a scheduled appointment without prior notice (Marbouh et al., 2020). No-show rates ranged from 12% to 80% in various healthcare settings. (Marbouh et al., 2020). Lower socioeconomic levels, more complex medical needs, mental illness, and longer appointment wait times are all factors in patients not showing up for their scheduled appointments (Shimotsu et al., 2015). Recent data from the urban hospital outpatient clinic indicated a 22.89% no-show rate for optometry and otolaryngology patients (see Appendix A, No-show rates). This health gap highlighted the need to improve no-show rates.

Problem Description

No-shows hinder patient quality outcomes and impede healthcare operational processes. Together, these two factors result in lost revenue for the organization. Missed appointments have been connected to unfavorable consequences that impact patient care. Data from clinic's microsystem electronic health record, EPIC, indicated language variations in the distribution of no-show rates in the optometry and otolaryngology clinic over one year. A gap analysis of this microsystems project demonstrated the current no-show rate at 22.89% for these clinic groups (see Appendix B, Gap Analysis). Targeted top clinic users were English-speaking, Cantonese-speaking, and Spanish-speaking patients. The overall rate of non-attendance among patients who primarily speak English was 2272, accounting for 29.48% of the total. The total rate of missed appointments among patients who speak Spanish was 1131, accounting for 21.70% of the total. Among patients who speak Cantonese, the total number of missed appointments was 155, accounting for 8.39% of the total. Present data warranted interventions to decrease no-show rates for these population groups. Reminder appointment calls were not given to optometry and otolaryngology patients. They could be one of the causes of no-shows, but no investigation had been conducted to determine the exact causes of no-shows. The desired state was to reduce the no-show rate by 20% after two months of data collection determining the causes of no-shows.

The Clinical Nurse Leadership's characteristics offered opportunities to communicate, collaborate, and engage with team members to facilitate change to enhance patient outcomes. In addition, patient engagement via direct communication added value to this project. Integrating patient perspectives offered personal insight to strengthen care delivery in the clinic's microsystem.

Determining the relationship between patient and patient no-shows allowed insight into providing an intervention to curtail missed appointments and enhance patient care quality. Combining USF's Jesuit tradition of value and service with the hospital's mission of quality and compassionate care, this quality improvement project assisted with improving the health and well-being of the community.

Setting

This quality improvement project occurred in an adult outpatient clinic at an urban safety-net hospital. Optometry and otolaryngology are among the services offered at the specialty care clinic. During a standard five-day workweek, 200 patients were seen at the clinic daily. The patient population was racially, ethnically, and linguistically diverse, and many were deemed vulnerable.

Specific Project Aim

The specific aim was to decrease the no-show rate of adult outpatient optometry and otolaryngology English-speaking, Spanish-speaking, and Cantonese-speaking patients by 20% from a baseline data of 22.89% from May 2023 to July 2023 (see Appendix C, Project Charter).

Available Knowledge

PICOT Question

The PICOT inquiry provided a launching point for information searches connected to evidence-based practice. The PICOT question that guided the search was, by July 2023, what intervention reduces no-show rates by 20% in the optometry and otolaryngology clinic in an urban adult specialty outpatient clinic?

Search Strategy

A comprehensive and systematic search approach included essential terms associated with patient no-shows to locate journal articles across several databases. The University of San Francisco's online library was used to obtain specific inclusion criteria using the following keywords: *no-show rates, outpatient clinic, and patient perception.* These keywords were entered into databases: C.I.N.A.H.L., PubMed, and Cochrane. The peer-review box option was selected to guarantee that each article had additional credibility. Specific articles were selected based on title relevancy with time frames from 2016 to the present. Inclusion criteria included patients between 18 and 85 years of age. Exclusion criteria included pediatric settings. An evaluation of the evidence of the literature was conducted (see Appendix D, Evaluation Tables).

Synthesis of Literature

High patient no-show rates pose a significant risk for healthcare systems. As a result, the healthcare community is increasingly interested in determining the causes of no-show behavior and mitigating its effects (Ferro et al., 2020). Various social issues contributed to no-shows.

In a mixed-method cross-sectional study conducted at a community health center by Bosher et al. (2021), no-show rates were greater among younger patients and patients of color. Family difficulties, personal concerns, and societal barriers were all causes that contributed to no-shows (Boshers et al., 2021). Greig et al. (2022) also found that no-show rates were affected by age, ethnicity, race, medical condition, and socioeconomic status. No-shows were influenced by visit type, age, insurance status, two prior no-shows, and checkup visits (Ahmad et al., 2021). Neighborhood crime impacted no-show probabilities (Ferro et al., 2020).

One of the most important indicators of future patient attendance was past attendance. If the patient has many appointments on the same day or the appointment was overbooked, the

likelihood of no-shows will be reduced (Milicevic et al., 2020). Differences exist between male and female no-shows. Estimated income was correlated with no-show rates. Patients with lead times for appointments between 8-10 days were more likely to attend. The appointment date impacted no-show rates (Ferro et al., 2020).

The examination of the literature on evidence-based practice and the interpretation of research findings yielded actionable evidence that can be utilized to guide decision-making, enhance learning, and enhance the delivery of consistent care for individuals who failed to attend scheduled appointments. This evidence directly addressed the healthcare needs of these specific population groups. Examining literature involved utilizing existing data and evidence to evaluate needs and comprehend successful strategies others employ. With time, establishing a systematic and ongoing procedure for constructing and assessing evidence facilitated the enhancement of programs, experimentation with novel concepts, and a deeper comprehension of their effects.

Rationale

Collecting relevant information on the causes of no-shows facilitated the selection of suitable interventions. Piggybacking a nursing theory into the project enhanced its value. Watson's Caring Theory Model served as a guidepost for this evidence-based practice project. Watson's theory described how nurses care for their patients and its impact on how the care improved patient outcomes. This theory acted as a catalyst for integrating change and development to enhance nursing practice and patient safety. This model's concept of ideas and propositions may be used consistently and methodically across various clinical settings and research. Her caring philosophy is a unique approach to patient care in which the nurse considers the patient's physical, emotional, and spiritual well-being in addition to their diagnoses and illnesses.

Each step of the project demonstrated the importance of caring for the project's success. Integration of Watson's Caring Theory Modal acts as a driver to steer the project. Using Watson's Human Caring Theory in this project was a fundamental guide to enhance interpersonal connections and establish a nurturing and therapeutic atmosphere. When the principles of human caring are implemented in patient care, families, and healthcare teams, it fostered a collective awareness of caring for oneself and others, thereby enhancing patient care (Wei & Watson, 2019).

Context

Five P's Assessment

The 5Ps offered an organization the framework for evaluating a microsystem. The 5Ps consisted of the following: patient, purpose, professional, processes, and patterns. Evaluating these terms within the microsystem enabled healthcare practitioners to identify problem areas and improvement opportunities.

Patient

The clinic observed a diverse range of patients in terms of their ethnic and linguistic backgrounds. A significant number of patients were classified as vulnerable. Prioritizing the patient was of utmost importance to facilitate the effective delivery of healthcare services.

Purpose

An urban safety net public hospital allowed a vulnerable patient population to access required health care. This microsystem delivered care primarily to adult patients in the outpatient specialty clinic. Patients were screened and assessed. If surgery or procedures were warranted, then patients were scheduled for a pre-anesthesia appointment enabling prior risk evaluation.

Professionals

The optometry staff in the clinic consisted of four optometrists, one registered nurse, three medical assistants, and ten technicians. The otolaryngology staff consisted of one nurse practitioner, one attending physician, three to five residents, two registered nurses, and seven medical assistants.

Processes

Huddles occurred in the morning when the nurse manager discussed clinic-related issues. At the front desk, patients checked in with the unit assistant who uses the electronic health record EPIC. The nurse practitioner or physician then conducted a health history and physical examination. Patients who met specific criteria were scheduled for pre-anesthesia phone appointments if indicated. Language interpreters were consistently used for patients who did not speak English.

Patterns

Daily unit huddles were conducted in the morning. The charge nurse discussed the patient census during the routine daily huddle. Occasionally, patients necessitated the rescheduling of their appointments because of factors such as forgetfulness, medical conditions, transportation limitations, and various social determinants.

SWOT Analysis

A SWOT analysis evaluated the possible strengths, weaknesses, opportunities, and threats related to no-shows in the optometry and otolaryngology clinics (see Appendix E, SWOT Analysis). The main strength of the project was the nurse manager's unbridled support for the project. The busyness of the clinic and the number of patients requiring communication from the staff about upcoming appointments were the major weaknesses. Opportunities existed for

enhancing quality outcomes by decreasing no-show rates. Social determinants for this clinic's vulnerable patient population were the biggest hurdles to the project's success due to societal barriers.

Power Interest Grid

The Power Interest Grid established the communication priorities for important stakeholders in relation to power and degree of interest. The department nurse manager, chief nursing officer, and quality department physician had significant and varying influence over and interest in this initiative and was communicated based on their interest and power (see Appendix F, Power Interest Grid).

Intervention

After analyzing EPIC data on patient appointment no-shows, it was determined that the no-show rate must be reduced. The timeline of this project began January 2023 to August 2023 (see Appendix G, Gantt Chart). Thus, a questionnaire was developed asking English, Spanish, and Cantonese-speaking patients why they are unable to maintain their scheduled appointments and what the clinic can do to make it easier to make their appointments. (see Appendix H, Patient Questionnaire). A data collection instrument was developed to track the responses from the questionnaire (see Appendix I, Data Collection Tool). Responses were collected, and the most prevalent reason for no-shows aided in determining an intervention to minimize missed appointments. Also, an examination was conducted to see the relationship between missed appointments and patient utilization of MyChart, a platform that offers text messaging services to patients. Early experience and guidance with an EMR-connected patient portal revealed a reduction in appointment no-show rates, increased patient satisfaction, and self-reported changes in health system utilization (Graham et al., 2020).

Based on the responses to 20 interviews, the following recommendation were made based on the prevalent reasons for missed appointments. To mitigate the occurrence of future instances of missed appointments, one of the main recommendations made by patients was the implementation of reminder text messaging, sent one to two days before their scheduled appointment. Furthermore, several patients proposed the implementation of telephone call reminders preceding their scheduled appointments at the clinic.

Once a systematic communication strategy has been established, including using ambassadors who contact patients to assist with MyChart access for two months, no-show rates will be compared to pre- and post-intervention.

Cost Avoidance

The economics of decreasing no-shows provided opportunities for financial savings for the organization. When no-shows occur, they not only influence patient health treatment but also reduce receivable insurance, which assists in maintaining the organization's financial survival. Cost avoidance for the project added value as the interventions provided opportunities to increase revenue. Optometry and otolaryngology Current Procedural Terminology® (CPT) codes were accessed from the California government website (https://www.ca.gov) to calculate Medi-Cal insurance receivable cost reimbursement. Optometry and otolaryngology eye procedures correlated to variable price insurance reimbursement according to CPT codes.

Each eye and otolaryngology procedure Medi-Cal reimbursement cost was multiplied by the number of no-shows. The total insurance cost of all optometry and otolaryngology no-shows was calculated to determine cost avoidance at $33,040.72. Twenty percent was deducted from each no-show category and multiplied by the procedure CPT code cost to calculate cost implementation savings. The total expenditure for no-shows after implementing recommended

interventions to decrease the no-show rate by 20% was determined to be $26,433.22. The time allocated by the Clinical Nurse Leader (CNL) for the project amounted to 30 hours, multiplied by the CNL's hourly rate of $80 (non-benefited). This calculation resulted in a sum of $2400. An additional $2400 was included in the overall cost of implementation of the procedures, resulting in a total cost of $28,833.22. The determination of annual savings was accomplished by deducting the cost of implementation from the cost avoidance, resulting in an annual savings amounting to $4,207.50. (see Appendix J, Cost Avoidance/ROI).

Study of the Intervention

This project used a systematic measurement approach to assess the intervention's efficacy. The objective of the study was to obtain a 20% reduction in no-shows. The data was acquired from the electronic health records of no-show patients. Analyzing the reasons for the no-show of patients who speak English, Spanish, and Cantonese provided outcome measurements. An EXCEL data spreadsheet facilitated the data collection process. The patients were asked why they missed their appointments and what the clinic could do to prevent future no-shows. Additionally, the correlation between patient non-attendance of appointments and their access to MyChart, a communication platform that offered patients reminders was examined.

Ethical Considerations

The Ethical Standards of the American Nurses Association (ANA) and the Jesuit principles were consistent with this project's endeavor. The Jesuit values emphasized the following three principles: cure personalis, being persons for others, and diversity in various forms (University of San Francisco, 2023). According to the ANA, one of the project provisions was respect for the inherent dignity, value, distinctive traits, and human rights of all individuals, one of the fundamental concepts that underpin all nursing work (American Nurses Association, 2015). The

Jesuit values and the ANA Ethical Standards were integrated into the project since they both promote a foundation of integrity, safety, and well-being for the patient. Integrity for the project stemmed from maintaining patient confidentiality. The safety of the patient was the result of fostering a decrease in patient no-shows which improves patient outcomes. This project had been approved as a quality improvement project by USF's faculty using quality improvement review guidelines and did not require Institutional Review Board (IRB) approval (see Appendix K, Statement of Determination).

Outcome Measure Results

The utilization of Pareto charts facilitated the examination of data, revealing a significant factor contributing to no-shows: patients' inability to remember their scheduled appointments (Appendix L, Pareto Chart: Reasons for No-Shows). To address occurrences of missed appointments, the most recommended solution proposed by patients was the implementation of text messaging as a means of communication prior to the scheduled appointment (Appendix M, Pareto Chart: Solutions for no-shows by no-show patients).

The lack of upcoming patient appointment reminders was a driver for intervention implementation. A positive correlation was identified between patients who did not have access to MyChart with text messaging and an increased frequency of missed appointments (see Appendix M, MyChart inactivation and no-show rates). Consequently, the deployment of MyChart ambassadors, who will proactively reach out to patients to facilitate their access to MyChart, will occur precisely two weeks prior to their scheduled appointments. After two months of implementation, the nurse manager will generate an EPIC report to assess the performance of the no-show rate. The post-intervention no-show data will be compared to the

previous baseline data of 22.89%. The goal of reducing no-shows by 20% will be considered achieved at a reduction to 18.31% for the designated patient population.

Summary

This study aimed to investigate the rates of nonattendance for scheduled appointments among adult outpatients in an urban safety-net hospital. The predominant factor that contributed to patients not attending their scheduled appointments was their inability to recall the appointment dates and times. The participants conveyed a preference for receiving appointment reminders through text messaging as a potential resolution. It was observed that the main barrier to effective communication for appointment reminders was the lack of patient access to MyChart which offers text messaging reminders. After the recommendation of a communication strategy aimed at facilitating patients' access to MyChart by educational ambassadors, the success of the project will be reassessed through the analysis of pre- and post-implementation no-show data over two months. This strategy presents an opportunity to explore novel educational methods to improve more effective communication methods and access to the current platform. By doing so, healthcare providers can ensure that patients receive consistent and uninterrupted care by not missing their appointments.

Conclusion

The value of this study exposed a weak link in the communication chain where patients lack information on gaining access to MyChart, which offers appointment reminders via text messaging. Introducing new outreach and educational opportunities can help improve patients' access to MyChart. Once an ideal method is achieved, the clinic can restructure its practice to focus on patient-centered care and improve the continuity of care. By reducing the frequency of patients not showing up for their appointments, it can alleviate some of the administrative burden

associated with arranging and rearranging appointments for these patients in clinics that are already fully booked. Interventions that demonstrate efficacy in mitigating rates of missed appointments possess the capacity to be implemented, assimilated, and reproduced in additional ambulatory settings, thereby affording patients the opportunity to optimize their health outcomes and enhance their overall state of well-being.

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Appendix A

No-Show Rates

CONTACT_DATE-PRIMARY	CONTACT_DATE - Secondary Filter	Facility	Address	Clinic Name	ENC_TYPE (group)
Last 12 months ▼	8/3/2019 ⬤——————⬤ 12/31/2023	(All) ▼	4M ▼	(Multiple values) ▼	(All) ▼

No-Shows By Race/Ethnicity
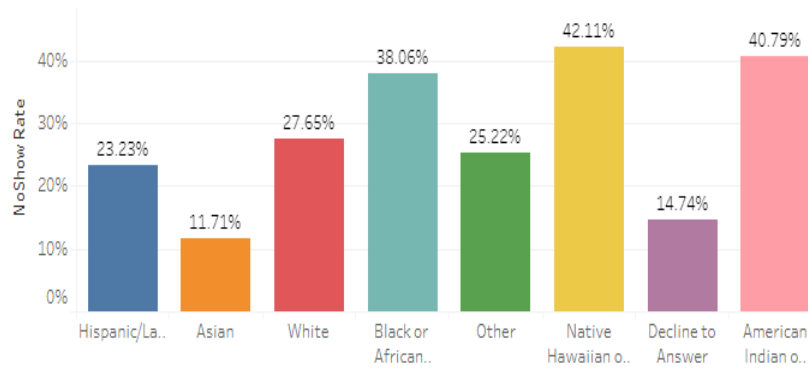
Visits By Race/Ethnicity

RaceEthnicity	Arrived / Completed		Left without seen		No Show	
Hispanic/Latino	5,045	76.66%	7	0.11%	1,529	23.23%
Asian	4,015	88.22%	3	0.07%	533	11.71%
White	1,669	72.10%	6	0.26%	640	27.65%
Black or African American	1,325	61.80%	3	0.14%	816	38.06%
Other	518	74.64%	1	0.14%	175	25.22%
Native Hawaiian or Other Pacific Islan..	88	57.89%			64	42.11%
Decline to Answer	81	85.26%			14	14.74%
American Indian or Alaska Native	45	59.21%			31	40.79%
Grand Total	12,786	76.99%	20	0.12%	3,802	22.89%

No Shows By Top 10 Languages
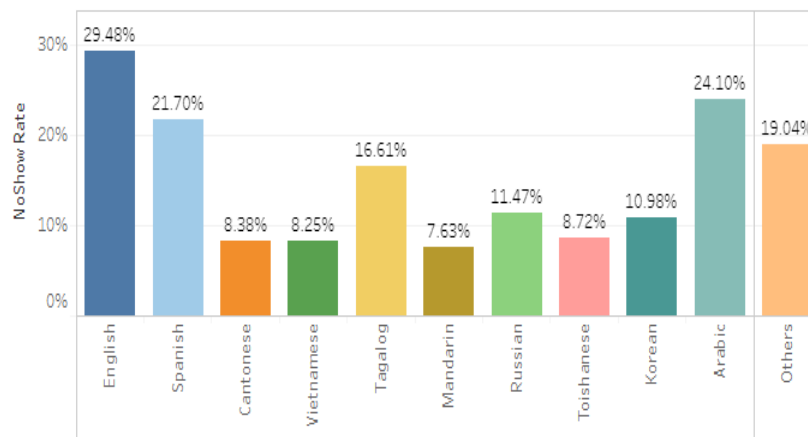
Visits By Top 10 Languages

Top Language	Arrived / Completed		Left without seen		No Show	
English	5,422	70.34%	14	0.18%	2,272	29.48%
Spanish	4,076	78.20%	5	0.10%	1,131	21.70%
Cantonese	1,695	91.62%			155	8.38%
Vietnamese	289	91.75%			26	8.25%
Tagalog	236	83.39%			47	16.61%
Mandarin	230	92.37%			19	7.63%
Russian	192	88.07%	1	0.46%	25	11.47%
Toishanese	157	91.28%			15	8.72%
Korean	73	89.02%			9	10.98%
Arabic	63	75.90%			20	24.10%
Others	353	80.96%			83	19.04%
Grand Total	12,786	76.99%	20	0.12%	3,802	22.89%

Appendix B

Gap Analysis

Gap Analysis		
The area under consideration: No shows in an urban public hospital adult outpatient clinic. **Aim Statement**: Decrease outpatient optometry and otolaryngology patient no-shows 20% by August 2023. (Intervention to be determined after no-show patient questionnaire is analyzed)		
Desired State	**Current State**	**Action Steps**
Decrease no-show rate to 18.31% for optometry and otolaryngology patients by August 2023 in the outpatient clinic.	22.89% no-show rate for the optometry and otolaryngology patients in the outpatient clinic from February 2022-February 2023.	Create a questionnaire designed to elicit a patient response on why they were a no-show.
		Develop a data no-show collection tool on EXCEL
		Analyze questionnaire data and develop an intervention based on responses

APPENDIX C

Project Charter

Project Charter: Reduce patient no-shows in an urban public hospital outpatient clinic.

Global Aim: Determine rationale for no-show rates after collecting data from an outpatient questionnaire on reasons why patients missed scheduled appointments.

Specific Aim: Develop a data collection tool based on evidence to determine reasons for no-shows among English, Spanish, and Cantonese-speaking populations. Decrease the no-show rate of adult outpatient optometry and otolaryngology English, Spanish, and Cantonese speaking patients by 20% from a baseline data of 22.89 % from May 2023 to July 2023.

Background: Patient no-shows in the outpatient clinic have variability. No-shows occur when a patient fails to attend a planned appointment without informing the outpatient clinic. High rates of missed appointments create a barrier to care access for this vulnerable population at a safety-net hospital. To give better access to care, it is necessary to develop strategies to increase performance (Mohammadi et al., 2018). Furthermore, no-shows impact the patient's health owing to a delay in diagnosis or treatment. When no-shows occur, the system's operating efficiency declines, causing a decrease in the organization's revenue (Marbouh et al., 2020). Identifying reasons for patient no-shows offers opportunities for interventions to mitigate missed appointments.

Sponsors

MD Attendings	
CNO	
Quality Assurance Manager	

Interventions: To provide a standard intervention for no-shows after reviewing answers to patient questionnaire.
1. Review current data on outpatient clinic no-shows based on equity.
2. Create questionnaire for patients on reasons they missed their appointments.
3. After communicating with patients, determine a common thread for the no-shows.
4. Explore the solutions and applications for interventions to decrease the no-show factor.
5. Apply interventions.

Measures

Measure	Data Source	Target
Outcome		
22.89% no-shows in the adult outpatient optometry and otolaryngology clinic Feb2022-February 2023	EHR-EPIC (Appendix A)	18.31%
Process		

Communication with 30 patients who qualify as no-shows	EHR-EPIC	20 Responding Patients
Examine questionnaire results	No-show questionnaire	20
Recommendations added for interventions	No show-questionnaire	20
Implementing Interventions	EHR-EPIC	To be determined
Balancing		
No increase in no-show rate	EHR-EPIC	Less than 20%

Team

MD Attendings	
Nurse Manager	
Charges Nurses	
Quality Assurance Manager	

Measurement Strategy

Data Collection Method: Initial data will be collected from the electronic health record EPIC. No-shows will be examined in the optometry and otolaryngology clinic. Data will be collected from the no-show questionnaire from twenty patients. Evaluation of data will dictate reasons for no-shows, and appropriate interventions applied. After the implementation of interventions, observations of EPIC data will be collected to determine if no-shows decreased every 3 months.

Data Definitions

Data Element	Definition
DOS	Date of Service
Race/Ethnicity	Categorize sections of the population
Age	Length of time a person has lived
Language	System of structured communication
# no. shows past year	Non-attendance
Zip code	Area
Days between appt. date and appt. made	Lead time
Appointment time of day	Recorded time
Appt type	Classification for visit
Questionnaire	List of questions designed to elicit response

Measure Description

Measure	Measure Definition	Data Collection Source	Goal
22.89% no-shows in optometry/otolaryngology Clinic Feb2022-Feb2023	N=# of optometry/otolaryngology patient No-shows in 2023	EPIC	Less than 22.89%

Analyze data from no-show questionnaire	Aggregate data N=primary reason for no-shows	No-show questionnaire	Determine frequent cause of no-shows and recommend interventions
Data collection post-intervention	N=# of optometry/otolaryngology no-shows post-intervention	EPIC	Decrease no-shows by 20%

•Initial changes to be tested upon development and completion of no-show questionnaire. Targeted interventions will be implemented once patient reasons for no-shows are collected.

APPENDIX D

Evaluation Tables

Study	Design	Sample	Outcome/Feasibility	Evidence rating
Boshers, E. B., Cooley, M. E., & Stahnke, B. (2021). Examining no-show rates in community health centre in the United States. *Health & Social Care in the Community, 30*(5). https://doi.org/10.1111/hsc.13638	Mixed-method, cross-sectional study	Secondary data from EHR of all clients at a community health center (quantitative analysis), (n=1,243 patients). Smaller set of subsets of patients from community centre (mixed method analysis; (n=30)	No-show rates are greater among younger patients and patients of color. Family difficulties, personal concerns, and societal barriers are all causes that contribute to no-shows. Improvements to facilities and social resources are required to reduce no-shows. The feasibility of the study may be incorporated into future studies to reduce obstacles to missed appointments. .	L IV C
Milicevic, A. S., Mitsantisuk, K., Tjader, A., Vargas, D. L., Hubert, T. L., & Scott, B. (2020). Modeling patient no-show history and predicting future appointment behavior at the Veterans Administration's Outpatient Mental Health Clinics: NIRMO-2. *Military Medicine*, 185(7-8). https://doi.org/10.1093/milmed/ usaa095	NIRMO-2 Predictive Model	1,206,271 appointment records between January 1, 2013, and February 28th, 2017. Data was divided into training and testing set.	One of the most important indicators of future patient attendance is past attendance. If the patient has many appointments on the same day or the appointment was overbooked, the likelihood of no-shows will be reduced. Medication	L III B

Study	Design	Sample	Outcome/Feasibility	Evidence rating
			adherence is another factor.	
Ferro, D. B., Brailsford, S., Bravo, C., & Smith, H. (2020). Improving healthcare access management by predicting no-show behavior. *Decision Support Systems, 138, 113398.* https://www.sciencedirect.com/ science/article/abs/pii/S0167923620301 536	Retrospective Analysis. Descriptive Analysis	53,311 schedules appointments for two years.	Variations exist between male and female no-shows. No-shows vary with age. Estimated income impacts no-show rates. Patients with lead times for appts. between 8-10 days are more likely to attend. Date of appointment impacts no-show rate. Neighborhood crime impacts no-show probabilities. Conclusions cannot be drawn since the study presents a retrospective analysis for no-show behavior.	L III B

Study	Design	Sample	Outcome/Feasibility	Evidence rating
Greig, E. C., Gonzalez-Colasco, R., & Nwanyanwu, K. (2022). Racial, ethnic, and socioeconomic disparities drive appointment no-show in patients with chronic eye disease. *Journal of Racial and Ethnic Health Disparities.* https://doi.org/10.1007/s40615-022-01363-x	Retrospective case-control study	A total of 106,652 visits for 4, 598 unique patients.	No-show rates are affected by age, ethnicity, race, medical condition, and socioeconomic status. Study's results allow future opportunities for interventions for at-risk populations to decrease no-shows.	LIII B

Ahmad, M. U., Zhang, A., & Mhaskar, R. (2021). A predictive model for decreasing clinical no-show rates in a primary care setting. *International Journal of Healthcare Management,* 14(3), 829-836. http://doi.org/10.1080/20479700.2019.1698864	Systematic Review	In total, 6758 patient visits were analyzed by Stata 13 using a probit regression analysis.	No-shows were influenced by visit type, age, insurance status, two prior no-shows, and checkup visits. Based on practice-specific problems, no-shows or missed appointments are expected. It is possible to develop a prediction algorithm to anticipate clinic no-shows ahead of time.	L III B
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Appendix E

SWOT Analysis

	Favorable/Helpful	**Unfavorable/Harmful**
Internal (attributes of the organization)	**Strengths** • Increased patient satisfaction • Management support • Hospital Location • Manager, staff interest and support of the project	**Weaknesses** • Stake-holder resistance to change. • No-shows affect quality outcomes. • Lack of staff to communicate with no-show patients.
External (attributes of the organization)	**Opportunities** • Donors interest in quality improvement in microsystem • Increased safety for patients • Increased reputation and improved notoriety. • Enhancing team development by keeping staff informed about project.	**Threats** • Competition • Social Determinants

APPENDIX F

Power Interest Grid

	Keep Satisfied **High Power, Low Interest**	**Manage Closely** **High Power, High Interest**
Level of Power	Analyst for Outpatient Specialty Care Outpatient Nurses Nurse Director	Department Nurse Manager Chief Nursing Officer M.D. for Quality Department
	Monitor **Low Power, Low Interest**	**Keep Informed** **Low Power, High Interest**
	Outpatient patients and families Nursing staff Ancillary staff Other nursing departments	Finance Department

Level of Interest

APPENDIX G

GANTT Chart

	23-Jan	23-Feb	23-Mar	23-Apr	23-May	23-Jun	23-Jul	23-Aug

Discussions with Nurse Manager Regarding USF's Quality Project

Examine Evidence-Based Practice Literature on Patient No-Shows

Examine No-Show Data on EPIC

Develop Patient Questionaire

Develop EXCEL Data Collection Tool

Collect Patient Data on Reasons for No- Shows

Collect Patient Data on Recommendations to Avoid No-shows

Evaluation

Interventions for Appointment Reminders

APPENDIX H

Patient Questionnaire

My name is Ed. I am a nurse calling from Zuckerberg San Francisco General Hospital 4M Outpatient Clinic. We want to improve our no-show rate in the clinic. We noticed you missed your last appointment(s). Is it ok if I ask a few questions related to why you missed your recent appointment(s)?

1. What are some of the reasons you may not be able to keep your scheduled appointments?

2. What do you think the clinic should do to make it easier for you to keep your appointments?

APPENDIX I

Data Collection Tool

	A	B	C	D	E	F	G	H	I	J	K	L	
1	DOS	NAME	MRN	PHONE #	RACE/ETHNICITY	AGE	LANGUAGE	#NO-SHOWS	ZIP CODE	APPT TIME	APPT TYPE	Q1	Q2
2		Alias	Alias	Alias #									
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													

Appendix J

Cost Avoidance/ROI

Financial Analysis: Decreasing No-Shows in the Outpatient Clinic							
COST AVOIDANCE							
		OUTPATIENT EYE PROCEDURE	CPT CODE	COST	CANCELLATIONS PER YEAR		Total Receiveable Medi_CAL Insurance Cost
		Eye exam/New patient	92004	$49.78	360		$17,920.80
		Eye exam/Estab patient	92014	$39.44	360		$14,198.40
		Flourescein angiography	92025	$38.43	24		$922.32
						TOTAL	$33,040.72
COST IMPLEMENTATTION							
					Minus 20% No show		
		New exam/New Patient		92004	49.78	288	$14,336.64
		Eye exam/Estab patient		92014	39.44	288	$11,358.72
		Flourecein angiography		92025	38.43	19.2	$737.86
							$26,433.22
CNL HOURS	X 80/hour						$2,400.00
30	$2,400						
							$28,833.22
ANNUAL SAVINGS							
COST AVOIDANCE			$33,040.72				
COST IMPLEMENATION			$28,833.22				
NET SAVINGS FROM DECREASING NO-SHOW BY 20%			$4,207.50				

Appendix K

Statement of Determination Form

CNL Project: Statement of Non-Research Determination Form

Student Name: Edward Barraza

Title of Project: Decreasing No-shows in an Outpatient Specialty Clinic

Brief Description of Project: No-show rates in the outpatient specialty clinic exhibit variability. No-show rates impact the patient's health due to diagnosis or treatment delays. By examining patient questionnaire on reasons for no-shows, a common answer assists at providing a communication intervention reminder method to decrease missed appointments.

   A) Aim Statement: Decrease the no-show rate of adult outpatient optometry and otolaryngology English, Spanish, and Cantonese-speaking patients by 20% from baseline data of 22.89% from May 2023 to July 2023.

   B) Description of Intervention: Develop a questionnaire to ask patients why they cannot keep their scheduled appointments and what the clinic should do to make it easier to keep their appointments. Develop a data collection tool based on evidence to determine reasons for no-shows among English, Spanish, and Cantonese-speaking populations. **Examination of questionnaire data provides vital patient insight for interventions of telephone reminders and EPIC utilization of text and email appointment reminders.**

   C) How will this intervention change practice? Patient appointment reminder communication will decrease no-show rates, fostering healthcare continuity and better patient outcomes.

   D) Outcome measurements: Outcome measurements will be determined by analyzing

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> reasons for English, Spanish and Cantonese speaking patient no-shows on an EXCEL spreadsheet. After communication intervention implementation, post-intervention data will be compared to pre-intervention no-show data. Measurements data will be provided by a Pareto Chart.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used:
(http://answers.hhs.gov/ohrp/categories/1569)

X This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

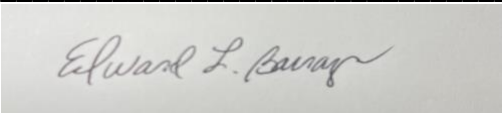| Project Title: Decreasing No-shows in an Outpatient Specialty Clinic	YES	NO
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	X	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	X	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	X	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	X	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	X	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	X	

The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	X	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	X	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	X	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.
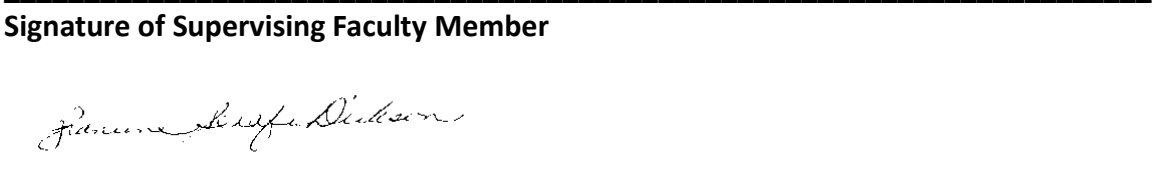
STUDENT NAME (Please print): Edward Barraza

_____

Signature of Student: *Edward L. Barraza*

_____DATE__4/16/2023__

SUPERVISING FACULTY MEMBER NAME (Please print):

_____

Signature of Supervising Faculty Member

Jeanine Seife Dickson

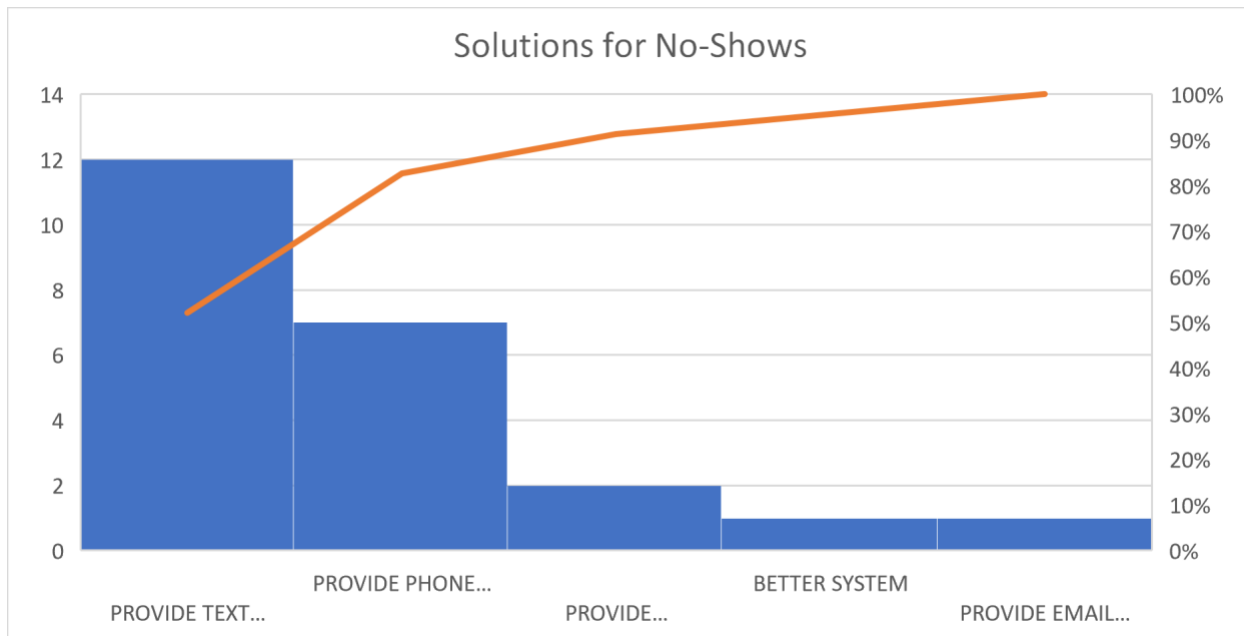__

_____DATE_4/23/23_____

Appendix L

Pareto Chart: Reasons for No-Shows
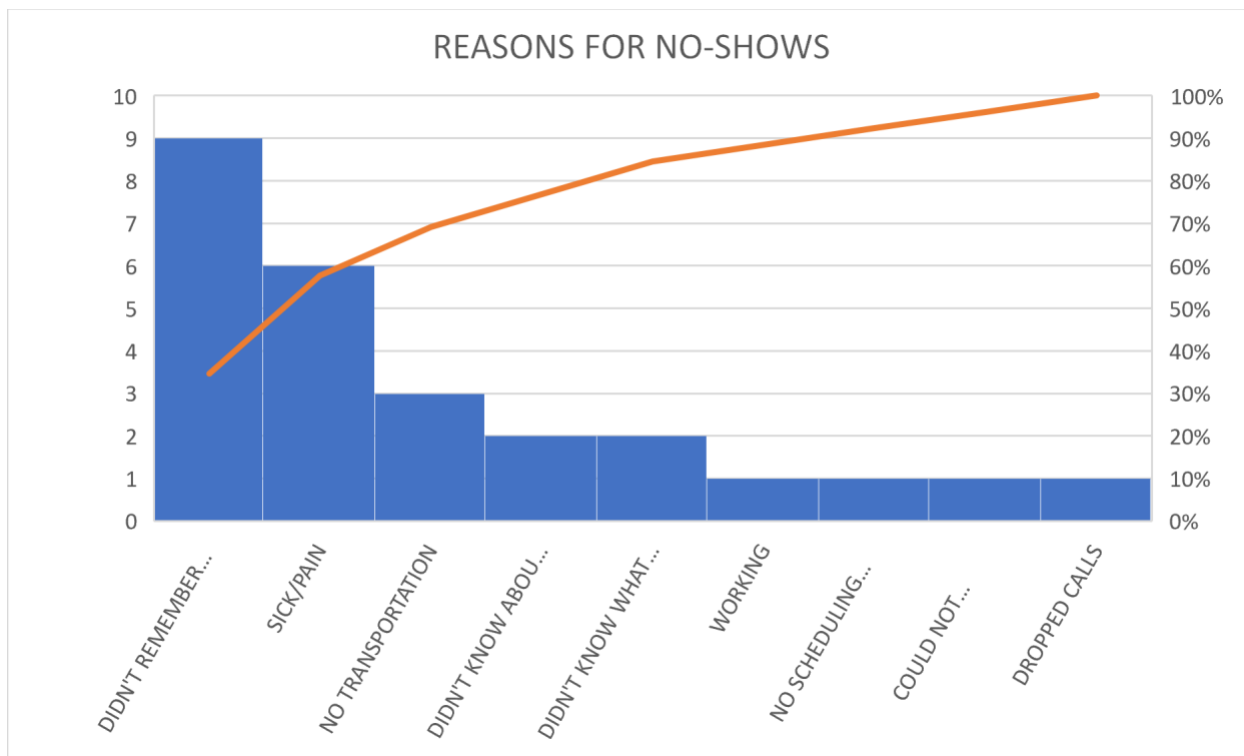
Appendix M

Pareto Chart: Solutions for No-Shows by No-Show Patients

Appendix N

MyChart Inactivation and No-Show Rate

Count of MRN	Column Labels		
Row Labels	**Comp**	**No Show**	**Grand Total**
Activated [1]	84%	16%	100%
Inactivated [2]	70%	30%	100%
Non-Standard MyChart Status [4]	67%	33%	100%
Patient Declined [5]	88%	13%	100%
Pending Activation [3]	79%	21%	100%
(blank)	50%	50%	100%
Grand Total	**81%**	**19%**	**100%**