Improving Outpatient Pediatric Cardiology Appointment Attendance
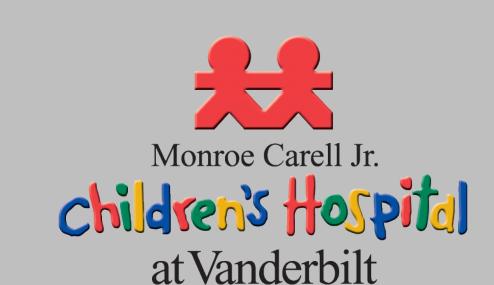
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Background

• Missed appointments/No-shows are accepted as a normal occurrence in outpatient clinic settings. While this may not be of major concern for a pediatric patient with an innocent murmur, a missed appointment could be critical for a patient with a serious asymptomatic cardiac condition

• Scheduled clinic visits have been linked to outcomes in several chronic disease groups such as diabetes, hypertension, HIV, and congenital heart disease (CHD). Higher clinic attendance rates are associated with better outcomes.

• Lack of follow-up is a prevalent problem within pediatrics. Despite scheduled follow up visits, some patients, including those with severe CHD lesions, fail to attend cardiology clinic appointments.

Clinical Question

How can we improve show rates for outpatient pediatric cardiology clinic visits?

Methods

Inclusion Criteria:

• Electronic Chart Review (eStar – DOT5)
  Missed appointment (6/25/18-9/24/18)

• Qualitative Survey
contact patients who miss appointments
(12/1/18-3/1/18)

• Patients (birth to 25 years of age) who:
  • Miss a PHI/DOT5 provider appointment
  • Miss test/study appointment (Echo, EKG, stress test, and device interrogation)

• Research review of the literature completed using CINAHL and Medline Plus

• The keywords used: "no-show ",
"appointment non-attendance",
"missed appointments",
"factors patient outcomes",
"pediatric", "pediatric cardiology",
"congenital heart disease",
"pediatric transplant outcomes" and
"Congenital heart disease patient outcomes".

• Ten research articles from the United States and one from Canada utilizing data both pediatric and adult clinics.

• Four articles included, other five remaining articles kept for background material.

Exclusion Criteria:

• Holter Monitor appointments
• Fetal echoes

Missed Appointments 6/25/18-9/24/18

Stress Test/SVO2	58
Electrocardiograms	103
Echocardiograms	496
Physician Appointments	1062
Total	1720

Averages   134.4/week   26.9/day

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*64 business days (12.8 weeks) with 28 providers

Abbreviated Data Sheet

Study (authors)	Sample (profile & No.)	Variables of interest	Study Design	Results	Summary (include individual study's limitations)
Mackie, A., Ionescu-Ittu, R., Therrien, J., Pilote, L., Abrahamowicz, M., Marelli, A. (2009)	643 Patient born in Quebec in 1983 diagnosed with CHD by age 6 that lived to 22 years old	Age of diagnoses , gender, CHD severity, invasive procedures, cardiac hospitalization , #of outpatient visits to a cardiologist & PCP, postal code	Statistical Analysis software used to ID patients by billing data (ICD, procedures) every inpatient and out patient contact, demographic data.	S after 6th birthday 28% (177 children) NS after 13th birthday failure to 47%(300 children). Patients age 18-22 were missing follow-ups at 39%. However 87 of all patients 18-22 were in contact with patients Primary Care providers	data did not allow for examination of whether loss or follow is associated with higher risk of death or other clinical outcomes. Deaths among adults with CHD becomes prevalent >25years, follow-up in this study stops at age 22. Loss to follow-up also could not be linked to childhood deaths (only 21 death events) , similarly hospitalizations increasingly common in adults >22 years old.
Perez, F.,Xie, J.,Sin, A.,Tsai,, R., Sanders, L., Cox, k., Haberlnad, C., Park, KT (2014)	17,024 NS events from 9/2005-12/2010	Age, gender, clinic type (medical or surgical), appointment season, appointment type (new follow up, nurse visit), distance from home, insurance type, and requiring language interpretor	Comprehensive data base of 15 subspecialty pediatric clinics. Multivarite logistic regression performed to identify variables with no-show events.	NS events most likely with Public or title V insurance, patients <12 years old, medical subspecialty (compared to surgical subspecialty)	.
Huang, Y., Li, H., Hanauer, D. (2016)	7291 pediatric patients who had at least two in a clinic visits (over 10 years) along two ot more of their appt characteristics, demographics and insurance provider info	Visit type, prior percentage of no-shows, appointment month, appointment weekday, age, race, gender distance to clinic and primary insurance	collect show/no status data visits; analyze data to find significant factors for model inclusion, build simulation model to determine best overbooking model based patient's past behavior and demographics	The results indicated the proposed overbooking technique outperformed the random overbooking method by as much as 9.4 allowing the physician to see an average 2 more patients daily.	This paper demonstrated a way to overbook patients into an appointment system accounting for an individual patient's no-show rate based on a ten-year clinic data that consisted of appointment characteristics, demographics and insurance info The results indicated the more past appts status was considered the better the prediction accuracy
Barry, V., Dept. of Hematology and Oncology Emory. (2018)	8028 appts scheduled for 950 pts from 2010-2015. 5387 attended, 1537 canceled 988 (12%)not attended and 116 (1%) were undetermined. 30 patients schedule appointments while never actually visited clinic	Severity of disease, race, age, type of insurance coverage	Electronic Chart review	Young adults (aged 20-29), race (black), with public insurance significantly associated with consistent NA; Longer Distance traveled was not a significant factor. Odds of NA appointments increased from childhood to then dropped from adulthood to older age.	Difficult to determine if HTC NA cause ED visits and hospital admissions or whether hospital admission and ED visits caused HTC NA. Other No-attenders as a group that warrants follow-up investigations "findings suggest frequent non-attendance may serve as a type of small but at-risk population in any bleeding disorder clinic

Results

• Patient no-show negatively impacts clinic efficiency and provider productivity which may consequently reduce patient access to care. No-shows also lead to lapse in patient's healthcare and poor overall patient satisfaction.

• Missed appointments create an ineffective environment for the education of future healthcare providers.

• Missed appointments are often preventable through a review of clinic systems, accurate contact information, and patient education.

Discussion

To effectively learn the appointment scheduling process, an eStar test patient will be created and enrolled in MyHealth at Vanderbilt.

Conclusion

Identifying the reasons for missed appointments will require examining the current clinic systems (referrals, scheduling, reminders, physician templates etc.). Completion of research will potentially enable changes that will provide faster access for patients and a higher level of patient satisfaction,

References

Reference list with full access information is available from the authors.