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What Parents Want: Does Provider Knowledge of Written Parental Expectations Improve Satisfaction in the Emergency Department?

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Abstract

Objective: Satisfaction is an important measure of care quality. Interventions to improve satisfaction in the pediatric emergency department (ED) are limited, especially for patients with non-urgent conditions. Our objective was to determine if clinician knowledge of written parental expectations improves parental satisfaction for non-urgent ED visits.

Methods: Randomized controlled trial conducted in a tertiary-care pediatric ED. Parents of children presenting for non-urgent visits (Emergency Severity Index [ESI] level 4 or 5) were randomized into 3 groups: 1) the intervention group completed an expectation survey on arrival, which was reviewed by the clinician, 2) the control group completed the expectation survey, which was not reviewed, 3) the baseline group did not complete an expectation survey. At ED disposition, all groups completed a 3-item satisfaction survey, scored using 5-point Likert scales (1=Very poor, 5=Very good). The primary outcome was rating of "overall care". Secondary outcomes included "likelihood of recommending the ED" and "staff sensitivity to concerns". Proportions were compared using χ^2 .

Results: 304 subjects were enrolled. The proportion of parents rating 5/5 for "overall care" did not differ among the baseline, control, and intervention groups (74.8% vs. 73.2% vs. 69.2%, $p=0.56$). The proportion of parents rating 5/5 also did not differ for "likelihood of recommending

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the ED” (77.7% vs. 72.2% vs. 70.2%, $p=0.45$) or “staff sensitivity to concerns” (78.6% vs. 78.4% vs. 78.8%, $p=0.71$).

Conclusions: For non-urgent pediatric ED visits, clinician knowledge of written parental expectations does not improve parental satisfaction.

Keywords

satisfaction; parental expectations; emergency department; survey

INTRODUCTION

Patient-centeredness is an essential component of quality healthcare.¹ The 2007 Institute of Medicine report *Emergency Care for Children: Growing Pains* suggests that failure to deliver patient-family centered care in the emergency department (ED) setting can result in numerous untoward effects.² Specifically, lack of patient centeredness can lead to inadequate understanding of diagnoses and treatment by families, preventable morbidity and mortality, and ultimately patient and family dissatisfaction with care.^{2,3} Methods to improve patient-centered care include: the presence of family members accompanying their child at all times, the availability of interpretation services to overcome communication barriers, and the incorporation of family and patient preferences and input into management and treatment decisions.^{3,4} Ultimately, the goal of patient and family-centered approach to care is to establish a physician-patient partnership to facilitate open communication, shared decision-making and the delivery of high quality care that is satisfying to the patient and family.^{2,3}

There are many barriers to effective patient-centered care that are unique to the ED setting. High patient volume, overcrowding, and high acuity can lead to significant delays in care and many disruptions to the patient encounter.^{3,5} The inherent lack of a previous relationship between the provider and family can make involvement of the family difficult due to system-imposed time constraints as well as those imposed by the time-sensitive nature of ED situations.³ Given these challenges, the incorporation of patient expectations into the routine flow of ED care is a possible intervention to better engage the provider with the family and patient, and enhance the patient-provider relationship.⁶ Prior studies have demonstrated that awareness of a patient’s expectations can allow for providers to address specific needs important to the patient and family⁷ and that unmet expectations with healthcare affects patient satisfaction.^{7,8} However, measures of the effect of patient or parental expectations on ED care are limited. Previous studies have not demonstrated improved satisfaction when pre-visit expectation were met⁹ or with use of a written expectation survey,⁶ though it was unclear if the majority of surveys in the intervention group had been reviewed by the provider.⁶

In the ED, non-urgent visits comprise more than half of all pediatric visits.¹⁰ Parental decision-making for bringing children to the ED for non-urgent conditions is often unclear, as opposed to children with more emergent or critical illness.^{11–15} Additionally, parental satisfaction for these visits has not been previously evaluated. Therefore, we sought to examine the potential effect of parental expectation on satisfaction for non-urgent ED visits. Specifically, our objective was to determine the effect of physician knowledge of written

parental expectations prior to ED evaluation on parental satisfaction for non-urgent pediatric visits.

METHODS

Study Design

We conducted a three-armed, prospective, randomized controlled trial to assess the impact of provider knowledge of parental expectations on parent satisfaction for children with non-urgent visits to the ED. The Human Investigations Committee of Yale University approved this study.

Study Setting and Population

The study was performed in an urban, tertiary care pediatric ED (annual census 35,000) over a one-year period from February 2014 to February 2015. A convenience sample of parents or guardians (hereafter referred to as parents) of children triaged as a non-urgent visit (Emergency Severity Index [ESI] level 4 or 5)¹⁶ were approached for enrollment upon arrival to the ED examination room. The ESI is a 5-level triage algorithm from 1 (most acute) to 5 (least urgent) based on patient acuity and anticipated resource needs, with levels 4 and 5 considered as low acuity visits.¹⁶ Parents were eligible for participation if their child was < 18 years old and presenting for a non-traumatic chief complaint (e.g. fever, cough, emesis, etc.). Parents were excluded if the child's chief complaint was health maintenance related (e.g. vaccination), or if the parent was non-English speaking and/or could not read the English language surveys.

Study Protocol

Eligible parents were enrolled by trained research assistants (RAs) during predetermined study blocks distributed throughout the 24 hours of the day and 7 days of the week, dependent on RA availability. Study packets were distributed to potentially eligible parents on arrival to the ED. An information sheet explained that consent was implied if the parent completed the enclosed surveys. Using block randomization, parents consenting for participation were randomly assigned using blocks of 80 into the three study groups: baseline, control, or intervention (Figure 1). RAs were blinded to the group assignment at the time of enrollment.

Parents assigned to the baseline group followed routine care, and no study procedures were conducted except completion of a satisfaction survey after the ED visit. Parents in the control and intervention groups were given an expectation survey immediately following enrollment. Upon survey completion, the RA collected the expectation survey. The control group expectation survey was placed back in the study packet and medical providers caring for the patient were blinded to survey responses. For the intervention group, the expectation survey was reviewed by the first treating provider (pediatric or emergency medicine resident, nurse practitioner, physician assistant, pediatric emergency medicine fellow or attending physician) prior to his or her initial evaluation of the patient. The first treating provider initialed the expectation survey to acknowledge review of the survey responses and returned the survey to the RA. We did not record whether a non-attending physician provider

subsequently discussed the survey with an attending physician. Not every patient evaluated by a nurse practitioner or physician assistant in the ED is staffed with an attending physician, so an attending physician did not see all patients. Treating providers were not provided any further information about the study or outcomes being evaluated, and were not instructed as to how to consider the expectation survey responses. Parents in all groups were blinded as to whether the provider received written knowledge of their expectations.

Outcome Measure

Once the patient was ready for discharge, as deemed by the treating medical provider, the RA provided parents in all groups with a satisfaction survey that was completed prior to ED departure. The satisfaction survey was comprised of 3 questions that assessed parental satisfaction: 1) Overall rating of care received during your child's visit, 2) likelihood of recommending our Emergency Department to others, and 3) staff's sensitivity to your fears and concerns. These questions were derived from a survey supplied by vendor Press Ganey (Press Ganey Associates, Inc, South Bend, IN), a for-profit agency employed by our institution to benchmark the patient experience. Responses were indicated on a 5-point Likert scale from "very poor" (1) to "very good" (5). RAs were available to answer any questions throughout the parent's ED stay.

The primary outcome was the proportion of ED visits resulting in a 5 out of 5 rating for satisfaction by parents. Differences in the percent receiving a 5 out of 5 rating for overall care between the intervention and control groups were compared. Secondary outcomes were the difference between the intervention and control groups in 1) parent's likelihood of recommending the ED and 2) parent's perception of the staff's sensitivity to their fears and concerns, as measured in the satisfaction survey. To assess whether provider review of parental expectations increased time required for ED care, ED length of stay was also assessed as a secondary outcome measure.

Surveys

There are no available, validated measures of parental expectations in the pediatric ED. The authors developed an expectation survey (Appendix Table 1) based on a survey previously utilized⁶ to address specific potential interventions expected by subjects (imaging, laboratory test, pain medication, antibiotics, intravenous fluids, prescription, thorough exam, other). Additionally, the expectation survey contained an open-ended question to assess what about the child's illness most worried the parent. Twenty expectation surveys were distributed to parents in the ED during a pilot phase to determine understandability and feasibility of use in the ED. Parents were approached to identify any difficulties with survey items. The survey was then revised prior to use in the final study.

The responses to each expectation and satisfaction survey were entered into an electronic database. The date of visit, date of birth, triage level, chief complaint, time of arrival, time of discharge, gender, race, insurance provider, and expectation survey acknowledgement by the medical provider were also entered for each study child. All data was collected at the time of the clinical encounter except for time of discharge and insurance provider, which were obtained through medical record review.

Statistical Analysis

We conducted a pilot of twenty satisfaction surveys to ascertain a baseline measurement of overall satisfaction, our primary outcome measure. Based on our pilot, we determined that 75% of subjects recorded the highest level of satisfaction (5 out of 5 response on the Likert scale) when evaluating overall rating of care specifically in non-urgent patients. Our hypothesis assumed that our intervention, knowledge of written expectations, would increase this proportion to 85%. Thus, we calculated our sample size using a 10% effect size between the intervention and control groups; assuming a $\beta=0.20$ and $\alpha=0.05$, 250 subjects were necessary in each study group (baseline, control, intervention), for a total of 750 subjects. An interim analysis of data was planned after 1 year of enrollment.

Data were summarized using standard descriptive statistics. Comparative analyses for proportions were accomplished using chi-square tests among the three groups. Outcome data was dichotomized as a score of 5 out of 5 on the Likert scale and scores < 5. Continuous variables were compared using one-way ANOVA. Statistical significance was determined as a p-value <0.05. All analyses were performed using SPSS (v. 22.0, IBM Corp., Armonk, NY).

RESULTS

Study Flow

The study was stopped at our one-year interim analysis, after it was determined that a significant difference in our primary outcome between the intervention and control groups would be statistically futile. At the time of our interim analysis, 399 parents had been approached for enrollment: 38 refused participation and 15 were ineligible due to inappropriate chief complaint or triage level, or due to poor English literacy (Figure 2). An additional 42 enrolled parents had missing data or incomplete survey responses, leaving a total of 304 parents available for analysis (Figure 2).

Demographics

The median age of enrolled children was 3.0 years (IQR 1.0–8.0), 49.3% were male, and 80.6% were publically insured. Fever was the most common chief complaint (26.1%), followed by rash (13.0%) and cough (8.8%). The three study groups did not differ substantially in age, race/ethnicity, gender, emergency severity index triage level, insurance type, location of care, time of enrollment, or disposition (Table 1). Children of parents that refused enrollment or who were excluded due to missing data were not statistically different than those enrolled across demographics, except that a higher proportion of the excluded parents were evaluated in the fast track area rather than in the main ED (26.1% vs. 12.7%, $p < 0.001$).

Expectation Surveys

Of the 104 expectation surveys completed in the intervention group, 97 were initialed and acknowledged by the treating provider: 60 (61.9%) were reviewed by a resident physician, 34 (35.1%) by a nurse practitioner or physician assistant, and 3 (3.1%) by an attending physician. Expectation survey responses were similar between the control and intervention

groups, except for a larger proportion of parents in the control group expecting a prescription (Appendix Table 2). The most common expectations listed were a thorough exam by a provider (34.8%) followed by a desire for a prescription (33.8%). Antibiotics were expected by 31.3% of parents, while 28.4% expected a laboratory test to be performed and 21.4% anticipated receipt of pain medication. Additionally, 19.9% of subjects utilized the “other” category, writing in a specific expectation not previously listed; most commonly, whatever was necessary to make the child feel better and the diagnosis or reason for the child’s illness. The most frequent responses for the question “what about your child’s illness worries you the most” were fever, particularly height or duration of fever, and the child’s pain or discomfort.

Outcome Measures

Overall, parental satisfaction in the study was highly rated: 72.4% of parents reported a 5 out of 5 for “overall rating of care” and 95.6% reported a 4 or 5 out of 5 indicating “good” or “very good” for all three satisfaction questions across study groups (Appendix Figure 1).

There was no significant difference among the baseline, control, and intervention groups for any of the three satisfaction outcomes: “overall rating of care”, “likelihood of recommending the ED” and “staff sensitivity to fears and concerns” (Table 2). Additionally, in the intervention group, there were no significant differences in satisfaction for all 3 outcomes on sub-analysis based on first treating provider (data not shown). The outcome “staff sensitivity to fears and concerns” received the highest proportion of 5 out of 5 scores across all groups (baseline 78.6%, control 78.4% and intervention 78.8%). The median ED length of stay was similar among the study groups (104 vs. 106 vs. 107 minutes, $p=0.98$).

DISCUSSION

To our knowledge, this is the first study to evaluate the effect of physician knowledge of parental expectations on parental satisfaction for non-urgent pediatric ED visits. Overall, satisfaction was found to be high for parents of children evaluated for non-urgent conditions. The studied intervention of medical provider knowledge of written parental expectations did not increase parental satisfaction. Satisfaction in the ED is likely multifactorial, and while knowledge of expectations has potential to improve family-centered care, it does not appear to affect parental satisfaction with care for non-urgent ED visits.

Patient-centered care is an important aspect of the clinical encounter, but there are many barriers to its effective use in the ED setting.^{3,4} Knowledge of parental expectations is a way to involve families in clinical decision-making and allows the provider to address issues that are of importance to the family in a timely fashion. There is limited existing research evaluating expectations in the ED population. One study of adult patients in the ED reported that meeting pre-visit expectations was not associated with improved patient satisfaction.⁹ The lone randomized controlled trial conducted in a pediatric ED reported that knowledge of written parental expectations overall was not associated with improved parental satisfaction across all ED patients. However, less than half of the providers in the intervention group acknowledged review of the parental expectations, and satisfaction was significantly improved on sub-analysis limited to those study subjects whose survey had been reviewed.⁶

Our study is the first to specifically evaluate non-urgent pediatric ED patients, a population whose expectations have not previously been explored. In this cohort we found that knowledge of written parental expectations did not increase satisfaction.

Previous studies have shown that satisfied patients are more likely to be compliant with physician recommendations and respond better to treatment regimens.⁸ Patient satisfaction is therefore an important quality marker of the clinical encounter, however it is a difficult outcome to measure. There is a myriad of different aspects of a patient encounter that affect the perception of care and overall satisfaction.^{17–20} Parental expectations are likely just one component of satisfaction. Our study found that parental satisfaction was overall very high for non-urgent visits to the pediatric ED. In particular, the entire study cohort was found to be very satisfied at the staffs' ability to address parental fears and concerns.

Our study intervention provided a tool to improve communication between families and providers in the ED setting. Previous work has demonstrated that improvements in general communication in the emergency room led to improved patient satisfaction.^{21–25} The innate environment of the ED creates many barriers to effective communication between the patient and provider.²⁶ Although we did not find a statistical difference in the measured outcome between the intervention and control groups, the use of an expectation survey may improve provider-parent communication in ways not measured in our study and help to achieve a more family-centered care model in the ED.

Quality of communication is another important aspect of patient care that has previously been shown to improve patient satisfaction in the ED setting.²³ It is possible that our intervention did not effectively alter satisfaction due to the varied experience level of the providers receiving the information, particularly the low percentage of expectation surveys reviewed by an attending physician. Spahr et al reported higher satisfaction in the 42% of families whose expectation surveys were reviewed by an attending physician,⁶ a substantially higher proportion than the 3% of surveys reviewed by an attending physician in our study. Communication is a skill obtained over years of medical practice²⁷ and in our study parental concerns may not have been adequately addressed by junior clinicians who comprised the majority of providers reviewing the expectation surveys. Furthermore, as a nurse practitioner or physician assistant evaluated some patients independently, and trainees may not have discussed the expectation survey with an attending physician, lack of attending physician review of expectations could have affected parental satisfaction for these patients.

While we did not find improvement in parental satisfaction with written knowledge of expectations, the intervention allowed parents a means to communicate their hopes and concerns for their child's treatment in a timely fashion that did not increase time spent in the ED. The study intervention did not appear to adversely affect patient flow, and therefore could be feasibly implemented to improve family-centered care in the pediatric ED.

Our study has limitations. We enrolled a convenience sample, limited by availability of research assistants. While we enrolled parents throughout the 24-hour day and 7-day week, the majority of patients (44.1%) were enrolled between the hours of 6 pm to 11:59 pm. As this time of day is generally the highest patient volume period, it is possible that parents

received less face-to-face time with the provider and therefore had less opportunity for expectations and concerns to be addressed in the intervention group. We did, however, complete enrollment over a 1-year period to account for seasonal variability. Nearly one quarter of parents approached for enrollment refused or had incomplete data. It is unlikely that inclusion of these patients would have materially changed our results, particularly as the demographics of these excluded parents did not significantly differ from those included. However, we did not record the number of English-speaking parents with low literacy who refused enrollment, and our results may not be applicable to this population.

Additionally, validated survey measures of parental expectations in the pediatric ED do not exist. Therefore we developed our expectation survey using group consensus, and the survey was piloted among families prior to use. The satisfaction survey utilized was derived from a larger, multi-question validated survey used by industry to benchmark the patient experience. Satisfaction results may differ with use of other validated instruments. Also, due to small sample size we were unable to perform meaningful sub-analyses based on category of parental expectation or experience level of the reviewing provider, which are important areas for further study. Lastly, our study was conducted at a single, tertiary care pediatric ED, and our findings may not be generalizable to general EDs.

CONCLUSIONS

Clinician knowledge of written parental expectations does not appear to improve parental satisfaction for non-urgent pediatric ED visits. Further study is necessary to determine alternative factors that affect parental satisfaction and improve patient-provider communication in the ED.

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Appendix

Appendix Table 1:

Expectation Survey

1. Please circle which of the following you were hoping for in the care of your child today: (you may choose as many as apply)

- Imaging study (such as x-ray, CT scan, MRI, Ultrasound)
- Lab test (such as blood work, urine test, throat swab)
- Pain medication
- Antibiotic
- IV Fluids
- Prescription for a medicine when discharged

Thorough exam by a medical provider only

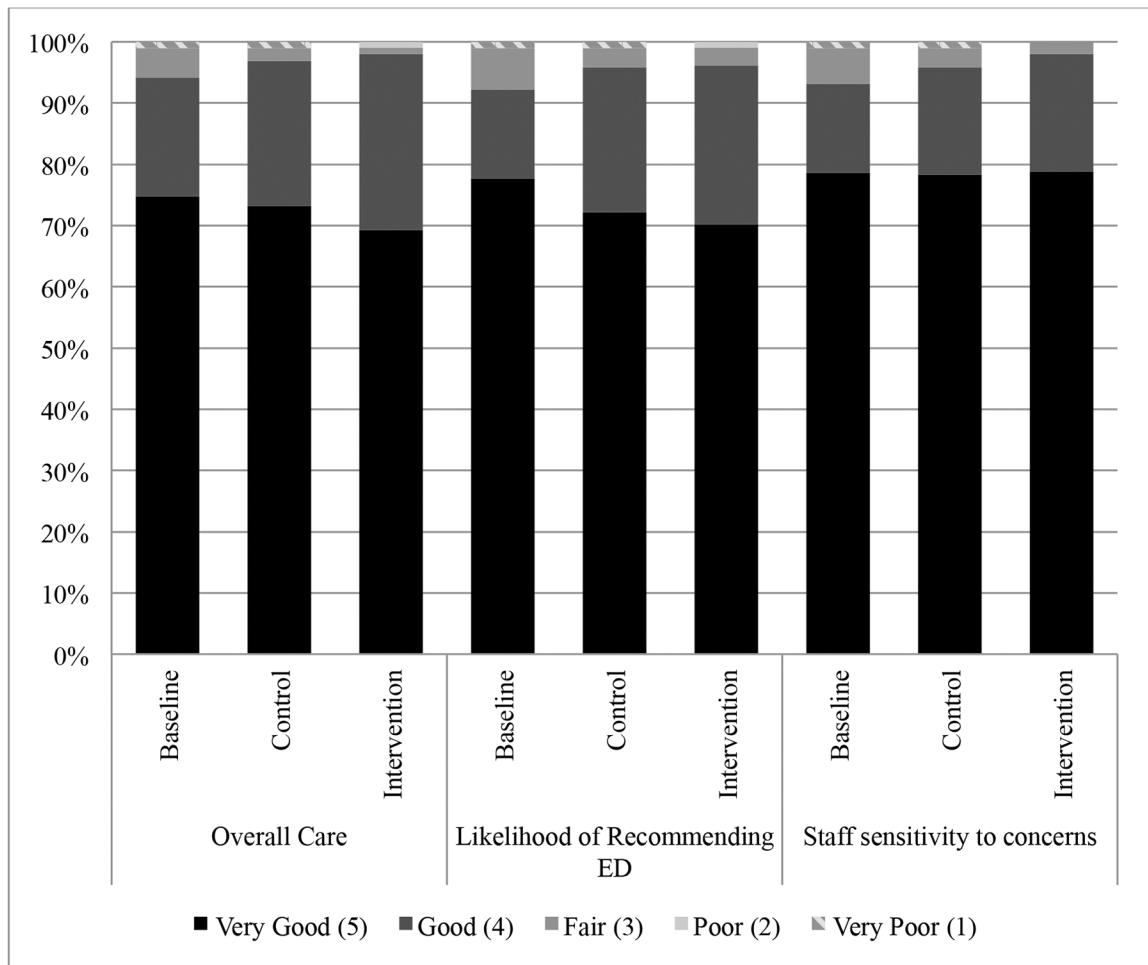
Other: _____

2. What about your child's illness worries you the most

Appendix Table 2:

Expectations of Study Participants

Expectation	Control (n=97) N (%)	Intervention (n=104) N (%)
Imaging	9 (9.3)	14 (13.5)
Lab Test	27 (27.8)	30 (28.8)
Pain Medication	21 (21.6)	22 (21.2)
Antibiotic	31 (32.0)	32 (30.8)
IV Fluid	5 (5.2)	5 (4.8)
Prescription	39 (40.2)	29 (27.9)
Exam only	31 (32.0)	39 (37.5)



Appendix Figure 1:
Responses to satisfaction survey questions by study group

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WHAT'S NEW

This is the first study to describe parental expectations and satisfaction for non-urgent visits to a pediatric emergency department. Though clinician knowledge of written parental expectations does not improve satisfaction, parental satisfaction is high overall for non-urgent visits.

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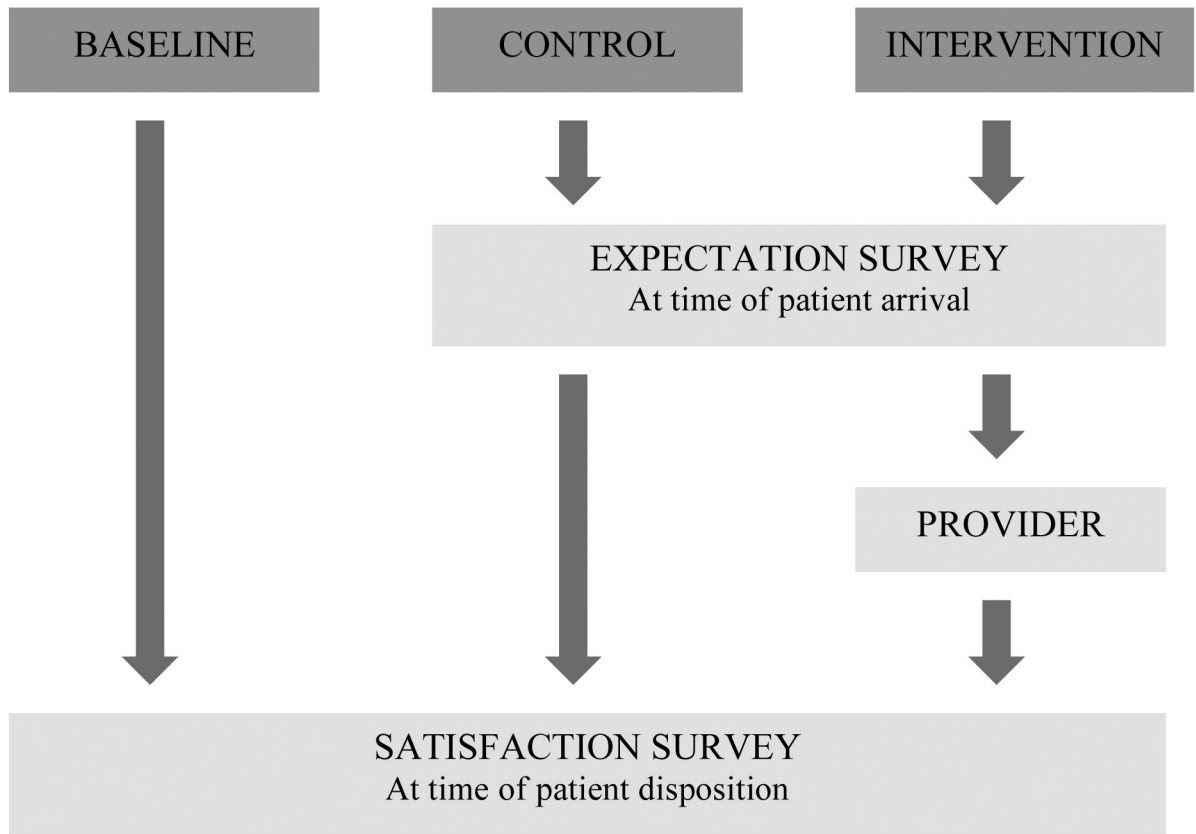


Figure 1:
Study flow diagram

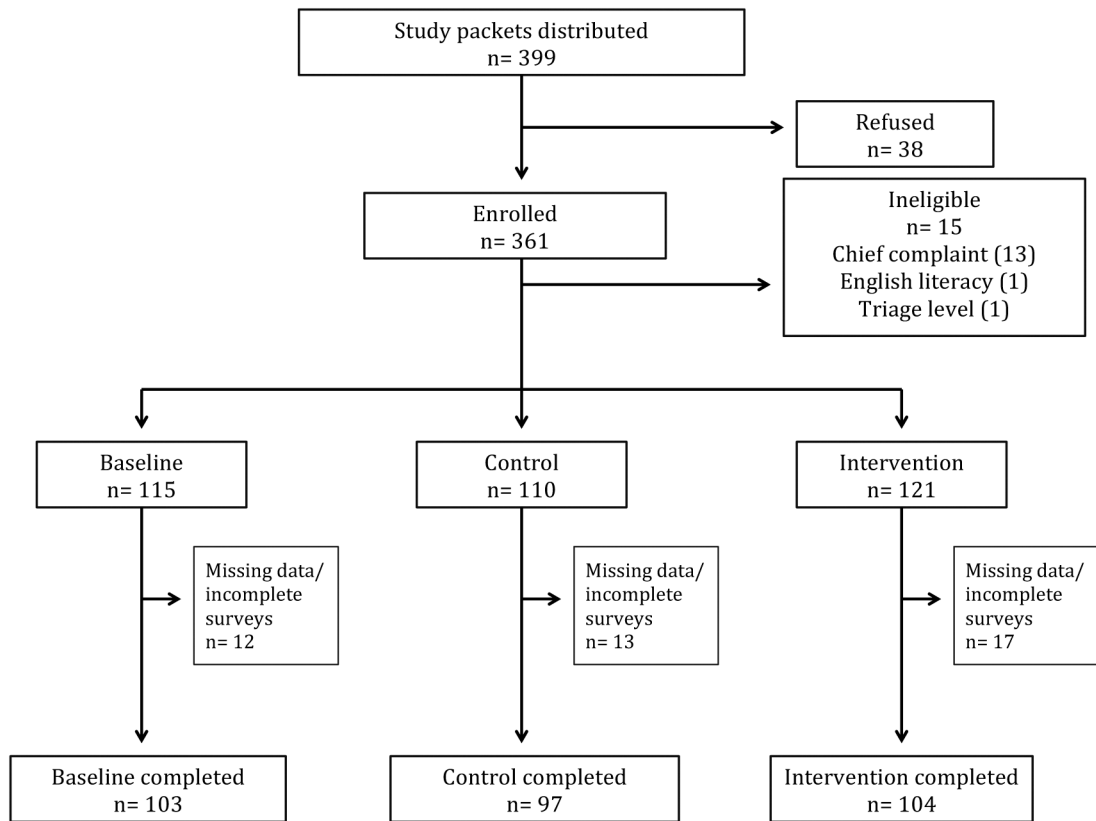


Figure 2:
Participant enrollment

Table 1:

Characteristics of Study Participants

Characteristics	Baseline (n=103) N (%)	Control (n=97) N (%)	Intervention (n=104) N (%)
Age, years (IQR)	4.0 (1.0, 8.0)	3.0 (1.0, 6.0)	3.0 (1.0, 8.5)
Race/ethnicity			
Hispanic	32 (31.1)	44 (45.4)	36 (34.6)
Non-Hispanic Black	34 (33.0)	25 (25.8)	33 (31.7)
Non-Hispanic White	22 (21.4)	17 (17.5)	20 (19.2)
Other	11 (10.7)	4 (4.1)	3 (2.9)
No response	4 (3.9)	7 (7.2)	12 (11.5)
Gender			
Male	46 (44.7)	49 (50.5)	55 (52.9)
Insurance type			
Public	85 (82.5)	79 (81.4)	81 (77.9)
Private	16 (15.5)	15 (15.5)	23 (22.1)
None	2 (2.0)	3 (3.1)	0 (0.0)
Triage level ¹			
4	64 (62.1)	67 (69.1)	70 (67.3)
5	39 (37.9)	30 (30.9)	34 (32.7)
Location of care			
Fast Track	12 (11.7)	14 (14.4)	13 (12.5)
Main	91 (88.3)	83 (85.6)	91 (87.5)
Time of Enrollment			
0:00 – 5:59	9 (8.7)	4 (4.1)	8 (7.7)
6:00 – 11:59	28 (27.2)	22 (22.7)	23 (22.1)
12:00 – 17:59	25 (24.3)	24 (24.7)	27 (26.0)
18:00 – 23:59	41 (39.8)	47 (48.5)	46 (44.2)
Disposition			
Admit	4 (3.9)	3 (3.1)	1 (1.0)
Discharge	99 (96.1)	94 (96.9)	103 (99.0)

¹Emergency Severity Index (ESI) is a 5-level triage algorithm from 1 (high acuity) to 5 (low acuity), with levels 4 and 5 representing non-urgent visits.

Table 2:

Results of Primary and Secondary Outcome Measures

	Baseline (n=103) N (%)	Control (n=97) N (%)	Intervention (n=104) N (%)	<i>p</i> -value
Overall care				0.56
5 (very good)	77 (74.8)	71 (73.2)	72 (69.2)	
<5	26 (25.2)	26 (26.8)	32 (30.8)	
Likelihood of recommending ED				0.45
5 (very good)	80 (77.7)	70 (72.2)	73 (70.2)	
<5	23 (22.3)	27 (27.8)	31 (29.8)	
Staff sensitivity to concerns				0.71
5 (very good)	81 (78.6)	76 (78.4)	82 (78.8)	
<5	22 (21.4)	21 (21.6)	22 (21.2)	
Median length of stay, min (IQR)	104.0 (75.5, 156.0)	106.0 (69.0, 163.0)	107.0 (80.5, 145.5)	0.98