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## **Cover Page Footnote**

Acknowledgments: NewYork-Presbyterian Department of Patient Experience, Ideopolis LLC, our volunteers Sejal Saxena and Nia Holder, Kim R. Moore (Audubon Practice Administrator), and Yoima Sosa and Anderson Mercedes (Audubon Supervisors) who helped make this possible.

## Does the use of volunteers and playbooks in pediatric primary care clinic waiting rooms influence patient experience?

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### Abstract

The purpose of this secondary data analysis was (1) to understand the use of a playbook as a positive distraction technique and (2) to explore the use of volunteers in the waiting room of an outpatient pediatric clinic setting. Specifically, the study examined the impact on perceived wait time, overall quality of care, and patient experience in a convenience sample of patients. Data obtained for a pilot program for improving patient experience were aggregated for exploratory analysis. Although significant differences in perceived wait time or patient experience were not found, the cohort exposed to both the playbook and volunteer intervention reported a significantly higher perceived quality of care. This analysis suggests the use of a playbook as a distraction technique along with the support of a waiting room volunteer may contribute to an increase in perceived quality of care in outpatient pediatric clinics.

### Keywords

Patient experience, perception, patient satisfaction, quality of care, wait times, communication, volunteers, positive distraction, interactions

### Introduction

Improving patient satisfaction and patient experience has been a rising priority among hospitals over the past decade. This study explores whether the implementation of positive distractions used with children impact the caregiver's waiting room experience in a busy, urban outpatient pediatric clinic. It has been shown that wait time has a significant impact on patient satisfaction and influences the patient's experience.<sup>1</sup> Several studies have documented the negative association between increased waiting time and patient satisfaction with primary care.<sup>2,3</sup> Some studies suggest that perceived wait time is a stronger predictor of patient satisfaction than actual wait time.<sup>4</sup>

Since waiting is often unavoidable, many people bring materials to distract themselves during the wait, such as reading materials, smart phone, tablets, etc.<sup>5</sup> This is referred to as self-distraction.<sup>6</sup> Distraction has been described as an "emotion-focused coping strategy because it diverts the focus of attention away from unpleasant stimuli by manipulating the environment".<sup>7</sup> Some interventions are known to induce positive distraction, such as views of nature or outdoor scenery<sup>8-10</sup> and art.<sup>11</sup> A positive distraction is an environmental feature that elicits positive feelings and holds attention without taxing or stressing the individual, thereby blocking worrisome thoughts.<sup>12</sup> Positive distraction in the context of healthcare

facilities refers to "the ability to allow the individual to shift focus from negative stimulus within the health environment to the more restorative aspects of the non-medical world".<sup>9</sup> Positive distraction may help patients pass the time by drawing patients' attention from the current unpleasant stimulus to a more pleasant stimulus.<sup>7,9</sup>

Particularly in an outpatient setting, long wait times can contribute to patient anxiety. Positive distractions have been used in the context of surgical procedures, for example murals as distraction have shown to decrease pain intensity quality and anxiety in burn patients.<sup>13</sup> Based on patient comments provided in the clinic's Press Ganey "Clinician and Groups Consumer Assessment of Healthcare Providers and Systems" (CG CAHPS) surveys, wait times are mentioned as one of the most frustrating elements of their visit. In a report from Vitals, a website that provides data for the healthcare consumer, the average wait time in New York State is ~19 minutes for a primary care or pediatric visit.<sup>14</sup> No average wait time for an outpatient clinic specific to an academic medical center was found.

There is currently no universal definition for wait time in a healthcare setting (i.e. some patients believe it is the time of check-in to seeing a clinical staff member, some feel it is from check-in to sitting in an exam room, etc.).<sup>15</sup> Because of this, the Patient and Family Advisory Council for the

Ambulatory Care Network of the Columbia University campus was consulted to understand the patient population’s definition of wait time. In their words, they consider wait time as “the time it takes from check-in until I am in a room and see my provider.”

In a busy ambulatory care clinic affiliated with a large academic center with emphasis on resident education, wait times are generally long. Since reducing wait time could be difficult, other means of distracting patients to improve their experience during wait may be a good approach. Positive distraction techniques using light and animation has been shown to improve Pediatric Radiography patient stress, mood, and parental satisfaction.<sup>16</sup> In this quality improvement initiative, the concept of positive distraction was utilized to improve patient experience in the waiting room with the use of playbooks.

**Background**

NewYork-Presbyterian Hospital (NYP) is a ten-hospital health system with sites spread across [a northeastern state of the United States]. It is an academic medical center with affiliations to both Columbia University and Weill Cornell medical schools, it is the highest ranked hospital in New York, as well as the second largest provider of Medicaid in the state. The Ambulatory Care Network (ACN) of NYP has 28 sites across Manhattan, 16 school-based clinics, and dozens of programs tied to community and population health. Patient experience is of great importance at NYP, and hospital-wide initiatives are frequently implemented to improve experience in many areas such as provider communication, access to care, and care coordination.

**Studying Pediatric clinic work flow**

The primary site for this initiative was the Audubon Primary Care Pediatric Practice. The Audubon Practice is a community-based clinic in an underserved area in Northern New York. The clinic is a medical home to over 6,000 unique pediatric patients with over 20,000 pediatric visits annually. Over 95% of patients served are low income and qualify for Medicaid; the majority are Latino. The clinic staff consists of 35 providers (26 of whom are resident trainees), 8 medical assistants, 6 nurses, 2 social workers, and 6 front desk staff. Due to a significant proportion of children with chronic medical conditions seen in this clinic, there is a need for at least one care coordinator and one community health worker as part of the medical home. The clinic has scheduled visits and walk-in from 9am to 5pm. On any given day there are a total of 60-80 patients seen in clinic between 9am and 5pm. The clinic has 14 rooms that are used by 8-10 providers who see a combination of scheduled patients and those that walk in for sick visits.

As depicted in Figure 1, after patients check in, they will remain in the waiting room until they are called by a

medical assistant who will take their vitals in an exam room. If the provider is available, they will be seen in the exam room. If a provider is not available, the patient will return to the waiting room until both the provider and exam room is available.

**Mapping factors affecting wait time**

At the Audubon Practice, the average wait time in the pediatric waiting area was roughly 59 minutes, almost triple the state average but not unusual across the ACN in our academic medical center. There are several factors that influence wait times. The clinic administration prioritized the study of these factors. As initial steps clinic flow was mapped and all factors that influenced the wait time were listed (Figure 2).

The clinic workflow contributes to long wait times due to limited room availability and high patient volume. However, Figure 2 demonstrates that it is not one factor alone that causes extended delays, but that it is a result of many influences. Long wait times may negatively influence

**Figure 1. Audubon Pediatric Clinic Patient Flow**

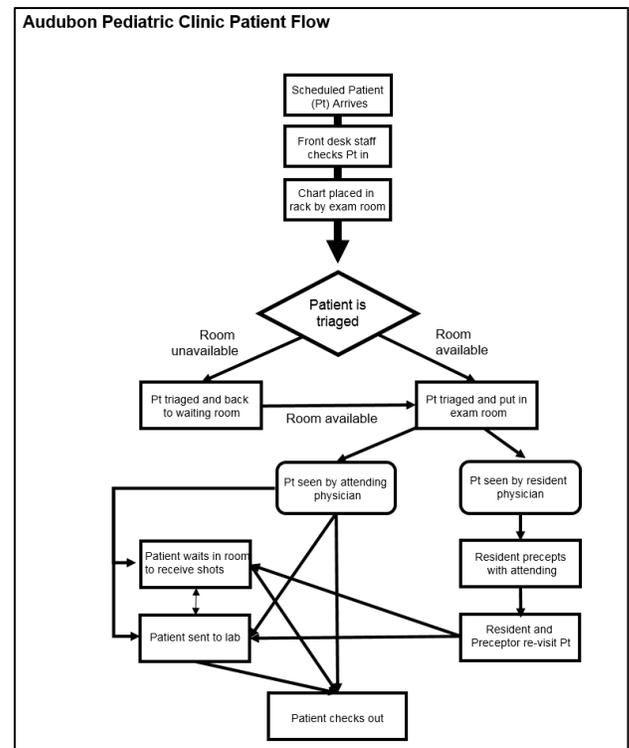
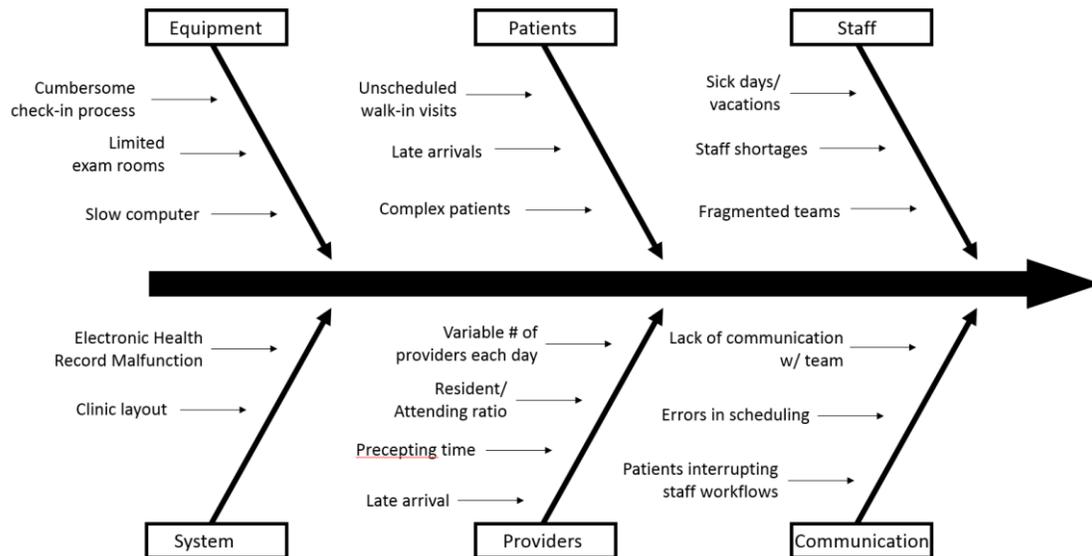


Figure 2. Factors Effecting Wait Times at the Audubon Practice



a patient's or caregiver's perception of the quality of care they will receive from a clinic. Several factors have been found to influence the perception of wait time. For example, anxiety makes the perception of wait time. For example, anxiety makes waiting seem longer, unexplained waits feel longer than explained waits, and unoccupied wait time feels longer than occupied wait time.<sup>17</sup> The waiting environment also contributes to the perception of wait time; the provision of specific activities or toys to engage children with in waiting rooms can distract their attention from the length of waiting and minimizes the chances of unwanted tantrums.<sup>18</sup> This is beneficial to both the caregiver and the patient. Shefrin et al.<sup>19</sup> have highlighted in their study on satisfaction of adolescents in an emergency department that adolescents prefer to have a space of their own in the waiting room with material suitable for their age group, such as films, video games, magazines, electronic tablets, or another means of entertainment. Therefore, the goal of this project was to explore the use of playbooks as a positive distraction technique during long wait times.

#### ***"Improving Patient Experience" Initiative***

Leadership in the Department of Patient Experience at NYP, aligned with the mission of the hospital, challenged health care clinics to improve patient experience. The Department supported this mission by a variety of ways, including grant awards. The adoption of using playbooks in the pediatric waiting room was made possible through a grant provided by the Department of Patient Experience at NYP in 2017. The purpose of the initiative was to use the playbooks as a method to improve the patient and their caregiver's perception of overall experience. The distraction in the form of a playbook was anticipated to

reduce patient and caregiver anxiety, and to entertain the children during their wait. Based on the clinic workflow, CGCAHPS patient comments, and goals of the ACN, it was established that focusing on wait time perception was a priority. After exploring several interventions for improving wait time experience in the pediatric practice, the playbook was found to be the most accessible.

The Scratch-N-Color Wait-Time Playbooks are mess-free activity booklets for children. They contain games, puzzles, hidden pictures and coloring activities that require neither crayons nor markers and therefore leave no flaky residue. Playbooks are printed with a special invisible ink that can only be developed by scratching the paper. Each playbook comes shrink wrapped with a wooden or plastic stylus that children can use to scratch the paper and watch the colors and images magically appear (Figure 3).

In order to study the effect of the intervention, baseline surveys were created to understand patient perception of overall experience by collecting responses on perceived wait times and quality of care (Table 1). Both the pre- and post-intervention surveys took approximately 1 – 3 minutes to complete.

At the start of the initiative, a convenience sample of caregivers of children 3 – 19 years of age who had an appointment from April 1, 2017 – December 30, 2017 were surveyed regarding their experience. In the first cohort, a sample of caregivers of patients with a clinic visit from April 1, 2017 – June 30, 2017 were asked to complete a survey regarding their visit experience (see

**Figure 3. Example of Scratch-N-Color Wait Time Playbook**

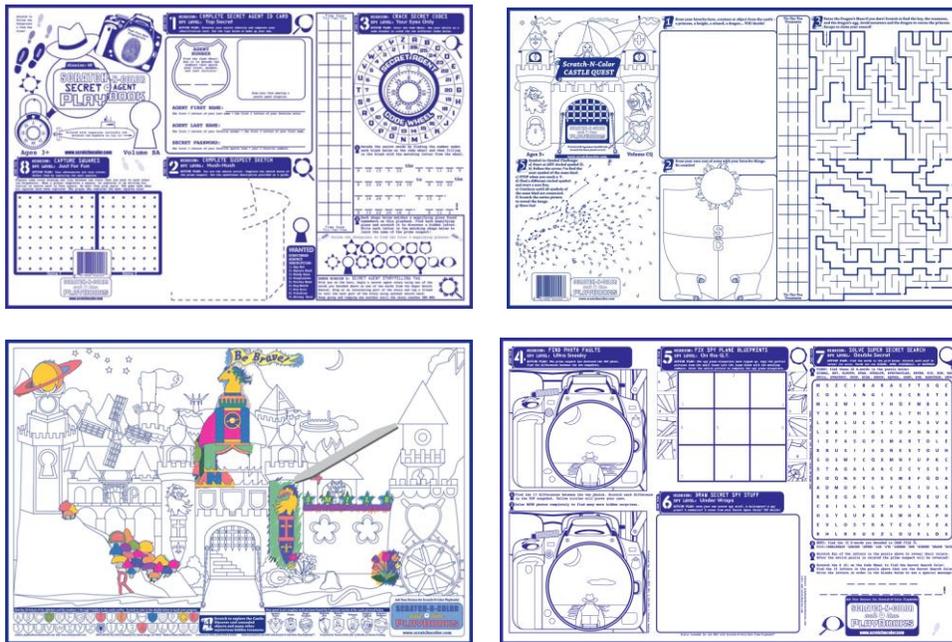


Table 1) by the front desk staff. The survey was made available in both English and Spanish.

In the second cohort, a sample of caregivers of patients with a clinic visit from July 10, 2017 - August 15, 2017 were offered a Scratch-N-Color Wait-Time Playbook for the child. The volunteers were local high school students assigned to the Audubon Practice by the hospital's Department of Volunteer Services to work in the clinic during their summer vacation. The volunteers greeted the patients, provided the children ages 3+ playbooks, as well as sat and helped the children with coloring and locating hidden objects in the playbook. At the end of the visit, the volunteers provided the caregivers a point-of-service survey to fill out before leaving the practice and were asked to report if the playbooks improved their waiting room experience and overall quality of care.

In the third cohort, a sample of caregivers of patients with a clinic visit from November 1, 2017 – December 30, 2017 were provided a playbook for the child by the front desk staff. In this cohort, the surveys were distributed and collected by the front desk staff. In this intervention group, no volunteers were present. Caregivers were asked to report if the playbooks improved their waiting room experience and overall quality of care (see Table 1). Average wait time was calculated using the time interval between the time of scheduled patient visit and the time when the provider initiated the note. Average wait times were noted during the months April 1, 2017 – June 30, 2017, July 10, 2017 – August 15, 2017 and November 1, 2017 – December 30, 2017.

**Results**

Basic demographic data were collected from all three samples from the internally created survey tool. Survey responses collected on paper were transferred to a Microsoft Excel file for analysis. Survey responses were considered complete and included in the final data set when the amount of missing data was less than 10%. Statistical data analysis was conducted using Microsoft Excel v.10. Descriptive statistics were utilized for the demographics and independent t-tests and multifactor analysis of variance (ANOVA) were used to determine the significance of changes in responses between the cohorts.

The Columbia University Medical Center Institutional Review Board approved all procedures and granted a waiver of the written documentation of consent due to retrospective, secondary data analysis.

A total of 175 caregivers participated in the initiative and responded to the survey from April 2017 – December 2017. Usually 1000-1200 patients 0-21 years of age are seen in clinic per month and two-thirds of these patients are between ages 3 -21 years of age. Based on these data, the response rate would be between 4-5%. In this study, the participants were recruited using a non-probability sampling technique, therefore a response rate was not calculated. As summarized in Table 2, no significant difference between the patient ages among the three cohorts was reported. These age groups are representative of the clinic patient population.

**Table 1. Survey Questions**

Pre-Intervention Survey Questions		Post-Intervention Survey Questions	
1	What is the age of your child who was brought in for a visit? <ul style="list-style-type: none"> <li>○ 3-4 years old</li> <li>○ 5-6 years old</li> <li>○ 7-10 years old</li> <li>○ 11 years old +</li> </ul>		What is the age of your child who was brought in for a visit? <ul style="list-style-type: none"> <li>○ 3-4 years old</li> <li>○ 5-6 years old</li> <li>○ 7-10 years old</li> <li>○ 11 years old +</li> </ul>
2	About how long did you wait to see your provider? <ul style="list-style-type: none"> <li>○ 15 minutes or less</li> <li>○ 16 min -30 minutes</li> <li>○ 31 min -45 minutes</li> <li>○ 46 min -60 minutes</li> <li>○ More than 60 minutes</li> </ul>		About how long did you wait to see your provider? <ul style="list-style-type: none"> <li>○ 15 minutes or less</li> <li>○ 16 min -30 minutes</li> <li>○ 31 min -45 minutes</li> <li>○ 46 min -60 minutes</li> <li>○ More than 60 minutes</li> </ul>
3	How was your waiting room experience today? <ul style="list-style-type: none"> <li>○ Excellent</li> <li>○ Very Good</li> <li>○ Good</li> <li>○ Fair</li> <li>○ Poor</li> </ul>		How was your overall quality of care today? <ul style="list-style-type: none"> <li>○ Excellent</li> <li>○ Very Good</li> <li>○ Good</li> <li>○ Fair</li> <li>○ Poor</li> </ul>
4	How was your overall quality of care today? <ul style="list-style-type: none"> <li>○ Excellent</li> <li>○ Very Good</li> <li>○ Good</li> <li>○ Fair</li> <li>○ Poor</li> </ul>		Was your child given a <b>Scratch-N-Color</b> Playbook today? <ul style="list-style-type: none"> <li>○ Yes</li> <li>○ No</li> </ul>
5			Did the <b>Scratch-N-Color</b> Playbook improve your <b>waiting room experience</b> today? <ul style="list-style-type: none"> <li>○ Yes</li> <li>○ No</li> </ul>
6			Did the <b>Scratch-N-Color</b> Playbook improve your overall quality of care today? <ul style="list-style-type: none"> <li>○ Yes</li> <li>○ No</li> </ul>

**Table 2. Age Groups**

	3-4 yrs	5-6 yrs	7-10 yrs	11+ yrs
Cohort 1 N=19	9	1	1	8
Cohort 2 N=47	17	16	6	8
Cohort 3 N=88	39	20	17	12

In reported wait times, there was no significant difference in the perceived wait times between the three groups (Table 3). However, when compared to a sample of actual wait times from the same number of patients in the same time period, all three groups reported reduced perceived wait times compared to the actual. This was calculated by using the upper limit of each survey response of perceived wait time. However, for cohorts 2 and 3, in response to the binary question on whether or not the playbook

**Table 3. Wait Time Comparison**

	Actual*	Perceived
No Intervention	58.0 minutes	33.5 minutes
Playbook and Volunteer	61.1 minutes	38.7 minutes
Playbook Only	58.4 minutes	36.1 minutes

improved the waiting room experience, responses were 100% affirmative (Question #5 in Table 1).

For quality of care ((Table 4), there was a statistically significant mean difference between the three cohorts. The playbook and volunteer intervention and no intervention cohorts had a larger mean difference ( $p=.0007$ ) than the mean difference of the playbook only intervention and no intervention cohorts ( $p=.0043$ ).

**Table 4. Quality of Care Comparison**

	Mean	P-Value
No Intervention	2.13	.000734
Playbook and Volunteer	1.43	
No Intervention	2.13	.004344
Playbook Only	1.61	

Participants were permitted to write comments at the end of the survey in the playbook and volunteer cohort.

**Discussion**

As noted in the results, the cohorts were representative of the average age groups of children in the practice.

**Perceived vs. Actual Wait Times**

We found that the perceived wait time was lower than the estimated actual wait times in all three cohorts with no significant difference between the three cohorts (Table 3). The fact that there was no difference found between the three cohorts was unexpected since it’s been found that patients may overestimate their wait time, particularly if their wait time is unoccupied.<sup>17</sup> The factors that may influence these results include the fact that regardless of which cohort the caregiver was in, they were asked to fill out a survey. The action of filling out the survey at the end of the visit may have actually influenced their perception of wait time. We also expected to see a substantial decrease in the perceived wait time of the playbook and volunteer cohort but this was not evident. We think this may be due to the fact that while the children were occupied with the playbooks, the caregivers’ time was less occupied.

**Quality of Care**

In response to the caregiver perception of the overall quality of care during the visit, the mean difference between the playbook and volunteer intervention (Cohort 2) and no intervention (Cohort 1) cohorts was greater than the playbook only intervention (Cohort 3) and no intervention cohorts. The significant change in the perception of the overall quality of care was unexpected. We anticipated a change in waiting room experience with the use of playbooks and volunteers, however, quality of care was impacted instead. Quality of care typically concerns interactions with clinical staff, but the caregivers reported that having the playbook in the waiting room improved their care as well. It is possible that the playbook and volunteer intervention was perceived as indicator of the quality of care received. This highlights the importance of providing excellent service and support throughout a patient’s visit. Patient experience encompasses all interactions the patient has with the health

**Table 5. Sample Patient Survey Comments**

I would like to see the Scratch-n-Color Playbooks more often in the waiting room, they distract kids and parents from the waiting time
Very nice, I love it and how they are with the children, keep up the great work
It was painless and kept them distracted
Both volunteers were very friendly and caring, kept my children entertained, thank you

system, and the waiting room is included in that perception of care quality.

**Influence of Volunteers**

The use of volunteers as patient greeters and general waiting room staff resulted in positive feedback from the caregivers (Table 5). Themes from the comments imply that interactions with the caregivers and patients helped reduce the waiting room anxiety and provided a means of relief for the caregiver. Having the volunteers was an added benefit to this initiative because of general assisting in the waiting room, acting as a patient greeter, and interacting with the patients and caregivers. An additional unintended benefit was their ability to act as messengers between the caregivers and the back end staff when wait times became too long. This was an unexpected but positive consequence of having volunteers in the waiting area. We believe the volunteers positively contributed to the caregiver’s perception of overall quality of care by serving as an additional source of communication and support during long wait times.

**Use of Playbooks**

Although we did not find a significant difference in the overall wait time experience, the comments indicated that playbooks serve as a positive distraction by occupying the time of both pediatric patients and their caregivers. In addition, all recipients of the playbooks indicated that it improved their waiting room experience.

**Limitations**

There are a number of limitations in our study that should be mentioned. First, since this was a retrospective study, validated tools and systems were not initially put in place to do a direct side-by-side comparison of the cohorts. For example, there is variation in sample size, inconsistency in how the surveys were distributed and collected (i.e. if the front desk staff was busy with other office tasks, if the caregivers who received the playbooks did not fill out the survey, etc.). Since patient identifiers were not collected from the patients who filled out the surveys, we were unable to extrapolate their exact wait time for comparison with perceived wait time. The wait times of the practice were collected as averages from the same time-period as each cohort. Therefore, this study did not allow for direct

comparison of wait times and corresponding survey results for an individual patient. Further, the survey questions of the three cohorts were not identical, which restricted analysis.

Volunteers provided the playbooks and the surveys, so it is possible there was some bias when filling out the surveys if the patient had more interaction with the volunteer beyond simply receiving the playbook.

The NYP ACN and Audubon Practice is also unique for a number of reasons. Primarily, it is a primary care clinic affiliated to large teaching hospital and has a significant proportion of children with chronic medical conditions. It is also located in Washington Heights, New York City which is a predominantly low-income Spanish-speaking neighborhood. Because of the nature of this academic outpatient practice, these results may not be widely generalizable to other settings.

## Conclusions

Playbooks and volunteers used as a positive distraction technique did not have any influence on the perception of wait times. However, the usage of playbooks and volunteers improved the perception of overall quality of care and patient experience. This work provides an opportunity to explore waiting room experience in the context of validated patient experience surveys (i.e. CG-CAHPS). We anticipate further research in this area.

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