

Decreasing Outpatient Pre-procedure Wait Times
in a Pediatric Interventional Radiology (IR)
Department: A Software-Solution Enabled Quality
Improvement Project

Neil A. Shah, MD
C. Matthew Hawkins, MD



EMORY
UNIVERSITY
SCHOOL OF
MEDICINE



Children's™
Healthcare of Atlanta

100th ANNIVERSARY

No Disclosures

Background



Accurate scheduling of IR procedures is very challenging. Why?

Patients interface with multiple providers in multiple areas of the hospital.

NPO status, lab availability, and procedure complexity are variable from patient to patient.

Inaccuracies in predicting these variables results in increased pre-procedure wait times.

Background

These challenges are exacerbated in children. Why?

Complexity of preparation, consent, sedation, and recovery is increased.

Children are often unable to tolerate length pre-procedure wait times.

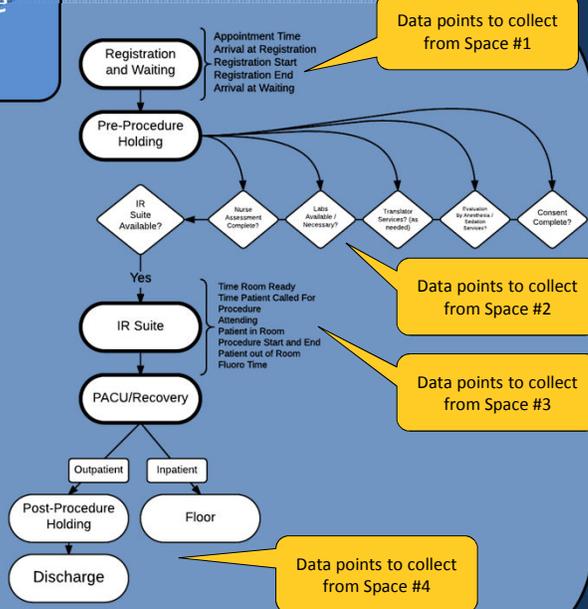
An unhappy child oftentimes (and understandably) leads to an unhappy parent.

Purpose

The purpose of this project is to improve outpatient scheduling accuracy within a pediatric IR department by creating and implementing a scheduling software application informed by baseline data and contemporized by up to date information.

Methods: Baseline Data Gathering Flowchart

We decided on data points to collect from each of four fragmented physical spaces (Registration and Waiting, Pre-Procedure Holding, IR Suite, and PACU/Recovery) based on multiple days of patient and provider workflow observation.



Methods: Baseline Data Gathering

Data Collection Tool

Using Google Forms, Sheets, and Scripts; we created a data collection tool that could be accessed electronically by **multiple individuals in the fragmented spaces** to record **baseline data** about the patient experience in live-time.



Baseline Data

Baseline data was **successfully** collected for **171** patient encounters over 7 weeks

84 inpatients
87 outpatients

Data from at least 50% of the locales were collected for 100% of inpatient encounters and 70% of outpatient encounters.

Average Outpatient Pre-procedure Wait Time
3 hours

Intervention
The Old Method

Prior to our intervention, appointments were scheduled using pen and paper, with procedures written down in a datebook that was kept in the IR suite.

Each procedure was assigned an arbitrary block of time:
 1 hour for subjectively short procedures
 2 hours for subjectively long procedures

Patients were instructed to arrive at registration 1 hour prior to start of procedure, regardless of need for labs or pre-procedure workup.

This procedure will probably be short...

Let's assign it a 1 hour time block.

Intervention
Our New Method

The Microsoft Access Smart Scheduling App

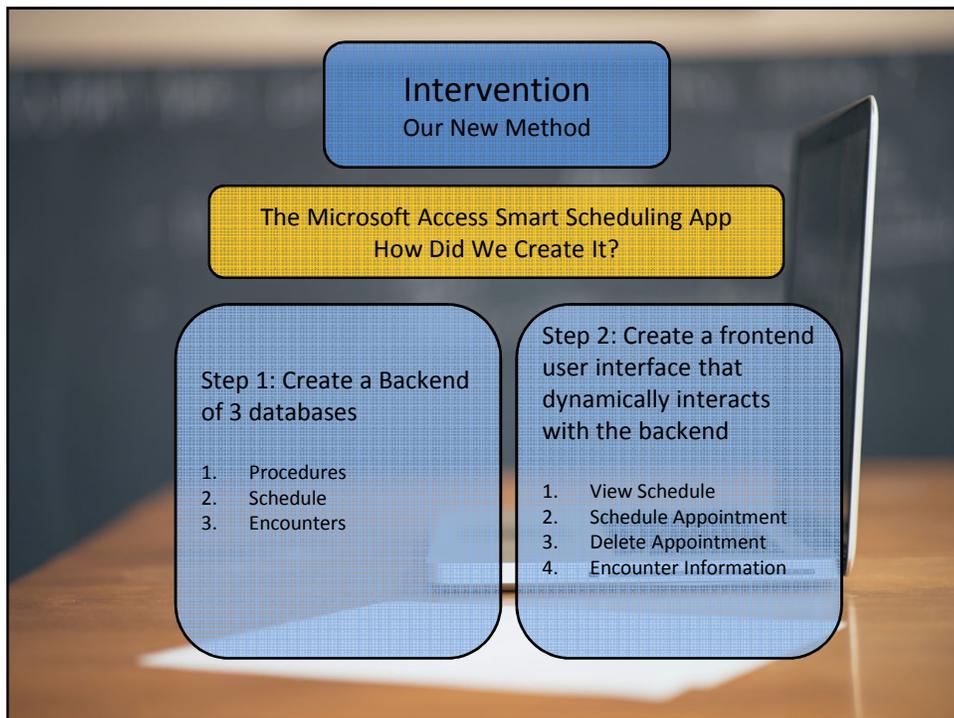
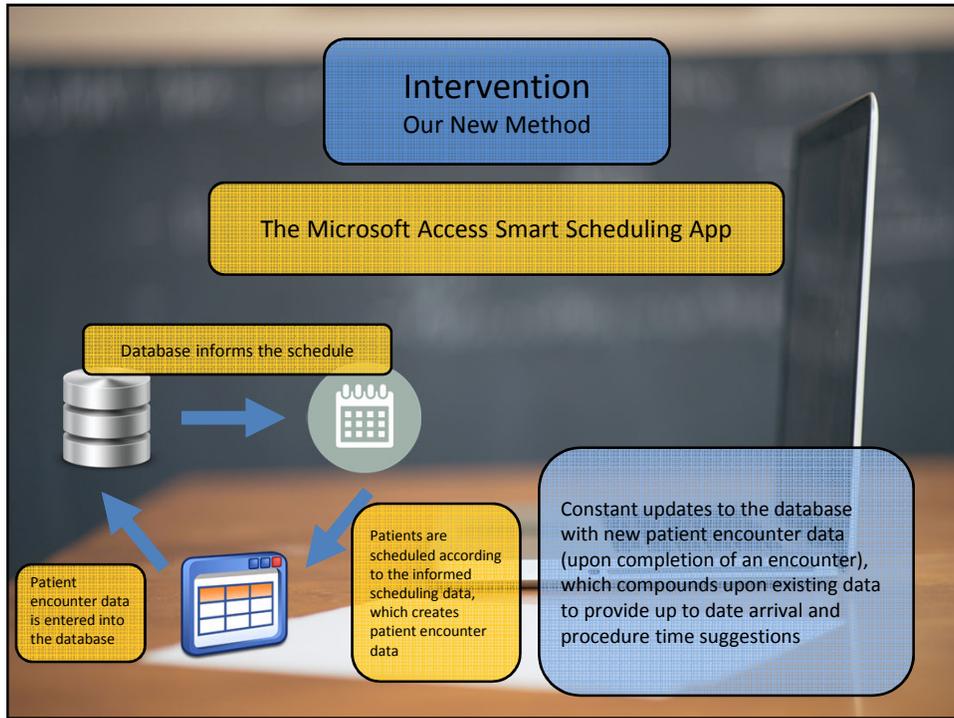
What does it do?

Instead of the old method of arbitrarily suggesting an arrival and procedure time, our scheduling app suggests arrival and procedure times based on...

Need for pre-procedure labs

Procedure time data collected at baseline (stored in a database in the software)

Constant updates to the database with new patient encounter data (upon completion of an encounter), which compounds upon existing data to provide up to date arrival and procedure time suggestions



Intervention Smart Scheduling App

The View Schedule section, which launches when the app is opened

Intervention Smart Scheduling App

The Schedule an Appointment section

Fields outlined in yellow are dynamically populated based on:

1. Database information

and

2. The other fields, which are populated by the scheduler.

Intervention

Smart Scheduling App Example Workflow

1. Fill out the Patient Information, which includes the procedure and pertinent clinical history

MRN

First Name

Last Name

Procedure

History of Easy Bruising or Bleeding?

Normal labs within the past 3 months?

Patient Information

Select an Appointment Date

Other Appointments on the Selected Date		
Procedure	Procedure Start	Procedure End
GJ Tube	8:45 AM	9:15 AM

Schedule this patient for: the procedure.

Hospital Arrival Time:

Est. Procedure Start:

Est. Procedure End:

2. Select an appointment date. A list of other existing appointments on that date will be displayed.

3. Select when you want to schedule the patient in relation to existing procedures. The app will recommend a Hospital Arrival Time and Procedure Start Time, which can be added to the schedule with the click of a button.

Intervention

Smart Scheduling App

View Schedule
Schedule Appointment
Delete Appointment
Enter Procedure Info

Procedure Data Form Click ESC or the Clear Form button before choosing another tab

Procedure

Attending

Date of Service

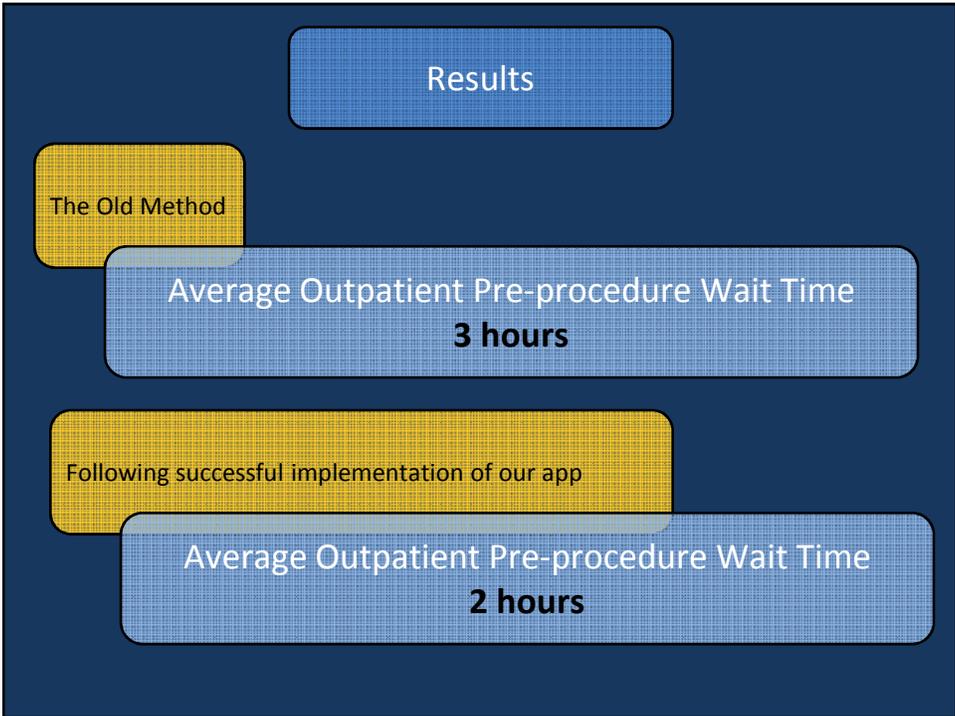
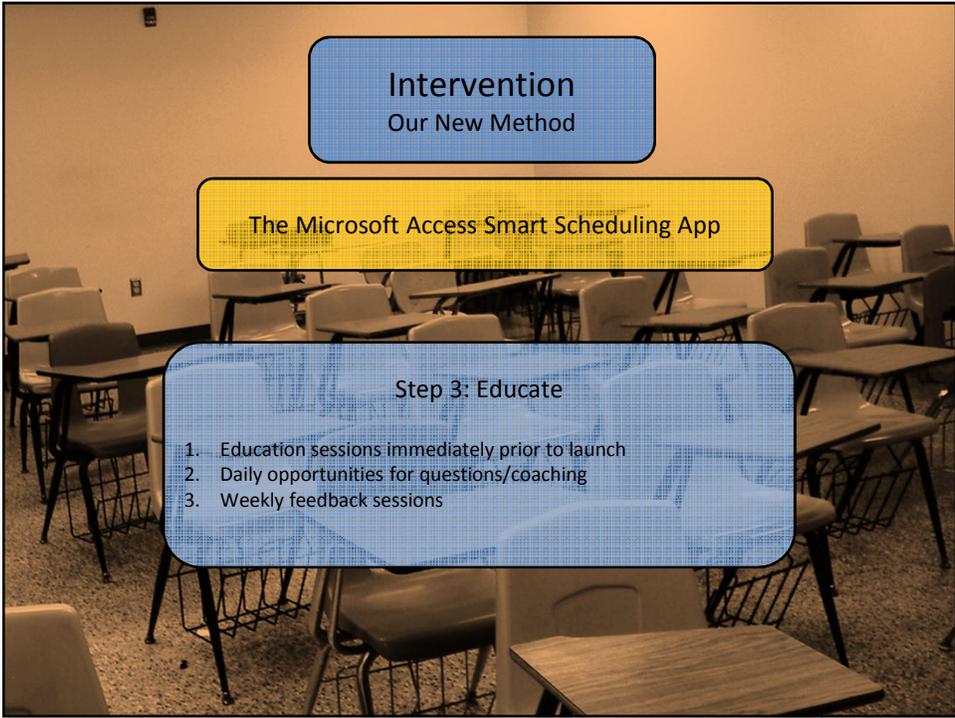
Arrival in Holding

Arrival in Suite

Procedure Start Time

Procedure End Time

At the end of the appointment, the Procedure Data Form is filled out. The data from this form is immediately added to the app's backend of databases to help inform the next appointment recommendation.



Next Steps

As more patient encounters occur, the scheduling application's database becomes more populated with information to use for making smarter scheduling recommendations.

As usage continues, we expect to see a further decrease in pre-procedure wait times.

Thank You!



@NeilAShahMD

@MattHawkinsMD