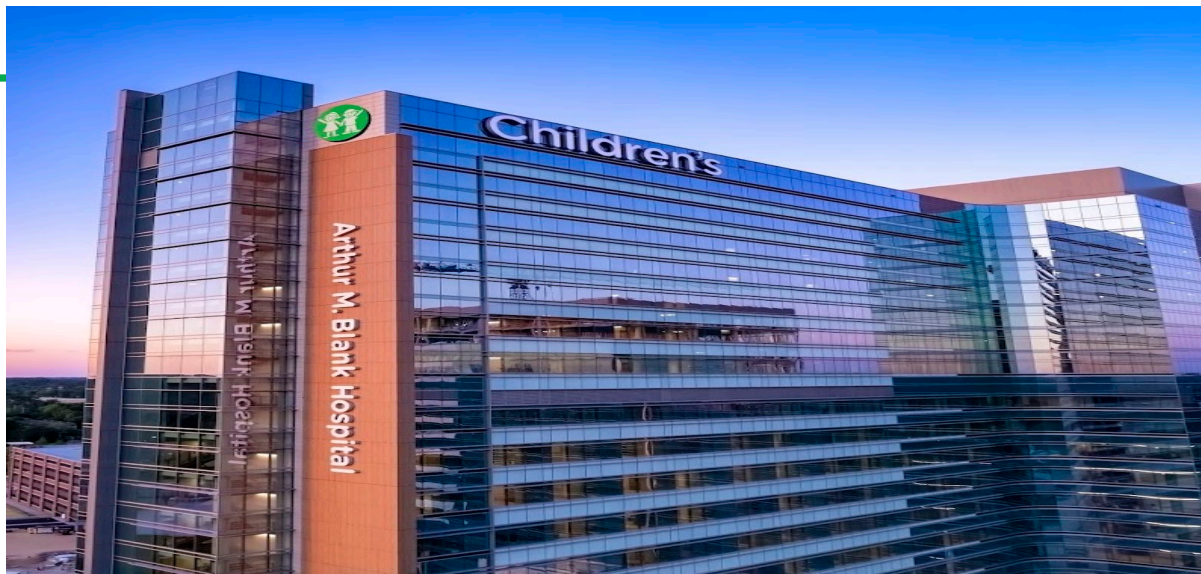




EMORY
UNIVERSITY

IMPACT OF REVISED ORAL CONTRAST GUIDELINES ON CT EFFICIENCY IN PEDIATRIC EMERGENCY DEPARTMENTS: A MULTI-SITE STUDY

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Introduction

Imaging Work Up of Acute Abdominal Pain

CT with intravenous contrast is a frequently used imaging test for workup of pediatric abdominal pathology in the emergency setting

Added value of oral contrast is questionable

Oral contrast is not well tolerated by children with acute abdominal pathology

Administration of oral contrast contributes to lag time for performance of CT

Materials and Methods

Unique children's health system with two free standing children's hospitals

Hospital 1

Academic Children's Hospital



Hospital 2

Non-academic Children's Hospital



Combined 106,000 annual emergency department visits

Materials and Methods Intervention:



Updated CT protocols in 2021 to eliminate oral contrast for evaluation of abdominal pathology in emergency setting



Radiologist and Technologist education



Provider education

Materials and Methods

Data Collection and Analysis:

Evaluated all CT abdomen and pelvis with IV contrast performed on children 18 years of age and younger from the emergency department

Primary objective: Impact on turn around time for CT scan

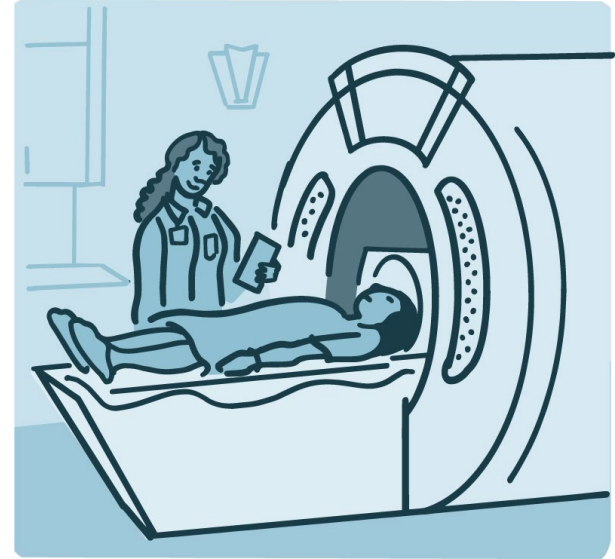
2019

Pre-pandemic “historical cohort”



2023

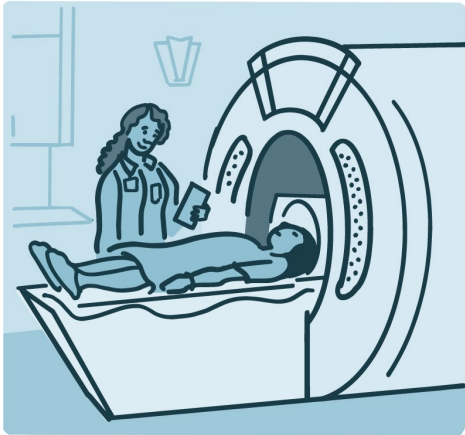
“Current cohort”



Results

2019

Pre-pandemic “historical cohort”



2019: **1,098** Abdominal CT scans

Female: 524 (47.6%)

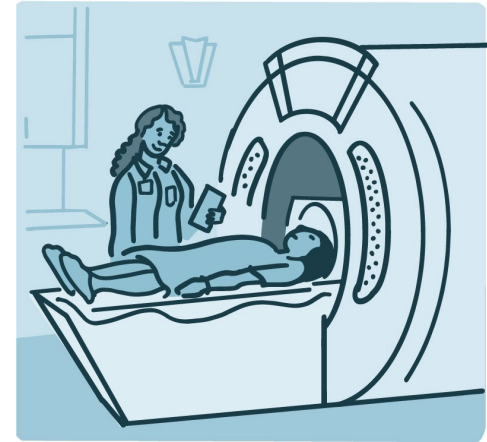
Male: 576 (52.4%)

Age distribution mean (IQR)

10 (7 - 14) years

2023

“Current cohort”



2023: **1,656** Abdominal CT scans

Female: 566 (48.9%)

Male: 591 (51.1%)

Age distribution mean (IQR)

12 (7 - 15) years

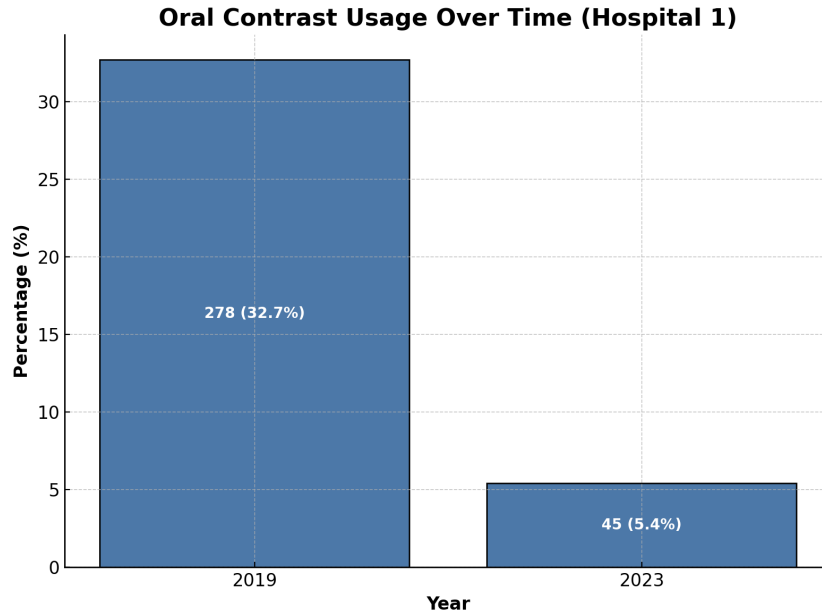
P value = 0.57

P value < 0.001

Results

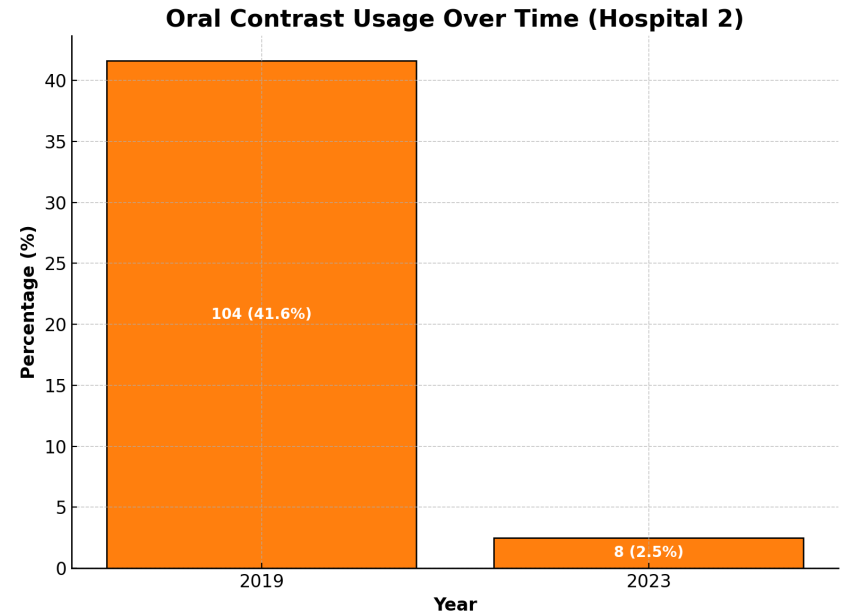
Both Hospitals Had a Significant Reduction in Oral Contrast Usage

Academic Children's Hospital



278 (32.7%) vs. 45 (5.4%)
P < 0.001

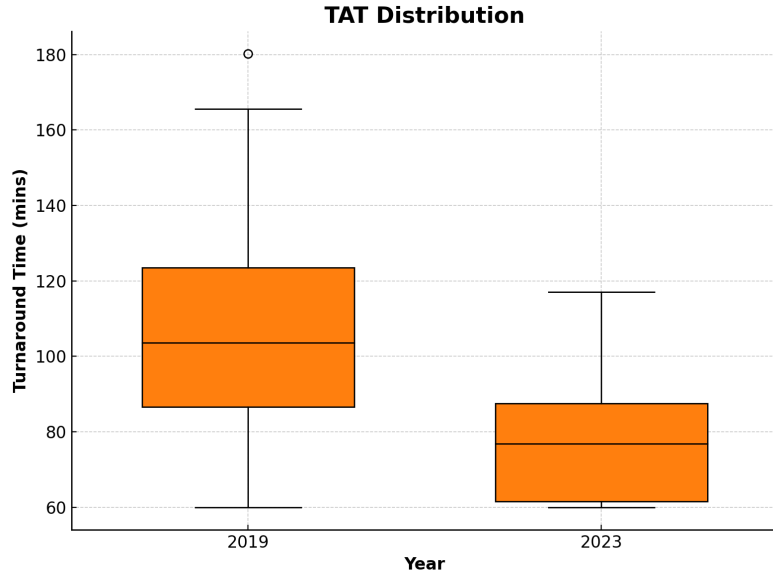
Non-academic Children's Hospital



104 (41.6%) vs. 8 (2.5%)
P < 0.001

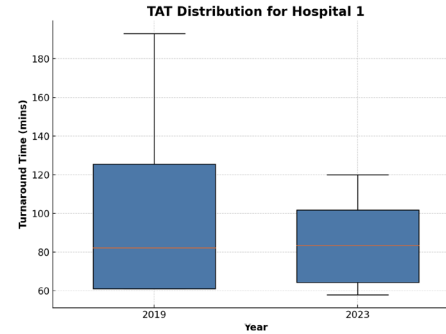
Results

Impact on Turn Around Time for CT completion



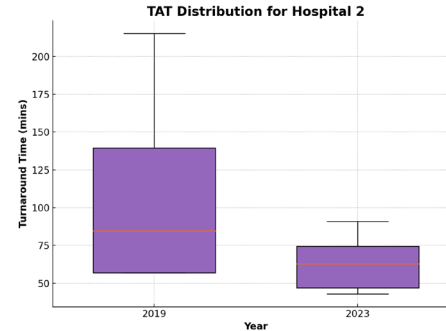
Overall
92 (61.0 – 196.5) vs. 75 (53.0 – 111.0) minutes
P < 0.001

Academic Children's Hospital



92.9 [61.0 – 193.0] vs 80.9 [58.0 – 120.0]; P < 0.001

Non-academic Children's Hospital



90.4 [56.9 – 215.2] vs 59.0 [43.0 – 91.0]; P < 0.001

Conclusions



Oral contrast usage in the ED for abdominal CT scan has **dropped** from **34.7%** to **4.6%**.



Both hospitals in our system have successfully **reduced** oral **contrast usage** and improved **turn around time**.



Future research should focus on decreasing utilization of CT scans and reduced intravenous contrast dosage.