Faster CT scan protocol authorization based on web scraping solutions improves patient care

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Introduction

Patient workflow to get a CT scan in our hospital.

Patient is admitted to the ER

Radiology resident defines appropriate CT scan protocol

Radiologist reports the findings

Attending physician orders imaging exam

Patitent undergoes CT scan

Methods

Development and function of our web scraping tool.

Scraping tool using Selenium with Python and ...

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... Chromedriver to check Hospital Information System (HIS)

Texts Radiology resident on call via Whatsapp®

CT scan protocol is defined

Methods

Brief group definition and statistical analysis.

With Tool

7

We authorized these patients during a night shift in April 2021

Without Tool

7

Another resident not knowing our tool authorized these patients during a regular night shift in April 2021

Mann-Whitney U Test
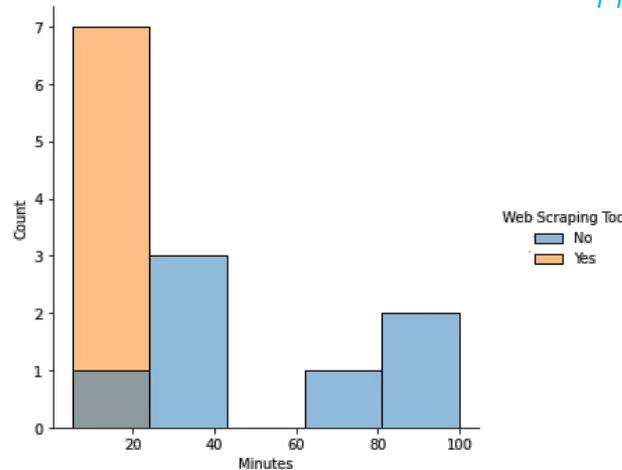**Group 1 →** with tool
Group 2 → without tool

Results

We calculated the average time between ordering and authorizing a CT scan with and without our tool.

With Tool

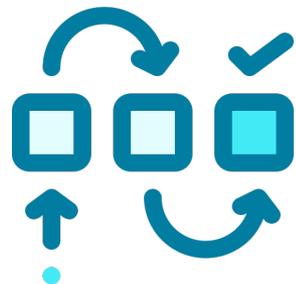**14.71**(STD 6.2)
minutes

Without Tool

52.28(STD 31.8)
minutes

0.0075
p-value

Discussion

We observed a **decrease** in time between exam order and authorization.

✅ **Faster exam execution**

*Facilitates
hospital workflow*

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*Improves
patient care*

Supplementary Info

RSNA®

Here's the code of our web scraping tool.

https://github.com/eduardocaminha/ctauthorization.git

Thank you.