Improving Operational Efficiency Using **Artificial Intelligence** In Outpatient Radiology

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Disclosures: None

- **Rajendra Kedar, MD, FACR** – None

- **Kiran Sailagundla, M.D** – None
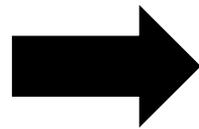
- **Douglas Ivancsits, M.D** - None

Background

o **Lowering reimbursements rates & increase in wages**

      has created a margin pressure in diagnostic imaging

o **COVID-19 pandemic**

      has accelerated digitization in all industries

o **Healthcare is far behind in technology adoption**

      compared to other industries

Old and obsolete   The new world   Diagnostic Imaging

Purpose

Increase	Appointment slot utilization

- Third of appointments slots for MRI, CT, Mammogram and Ultrasound goes unused every day due to:
  - No Shows
  - Last minute Cancellations and Reschedules
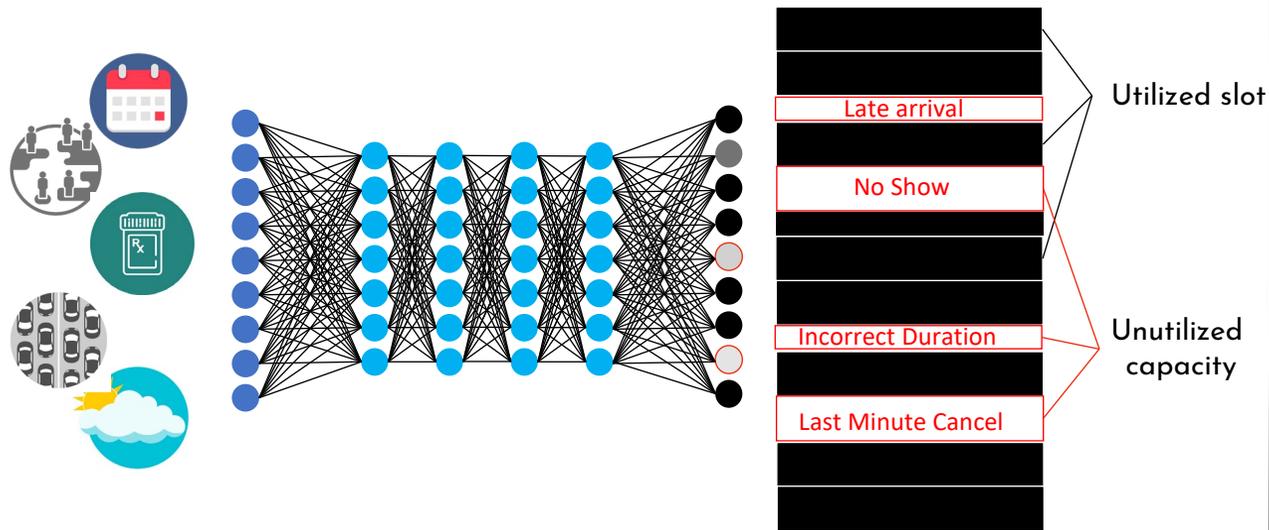 - Auth issues and abandoned exams

Decrease	Prior Authorization department workload

- Manual workflows for prior authorizations contribute to administrative expenditure and delays in patient care
  - Manual work cause errors that result in denials
  - Employee turnover result in retraining expense

Solution: Automated Rescheduling

Deep Artificial Neural Network
Predicts schedule gaps within the next 48 hours
For a given resource in an imaging center

Automated call outreach with conversational AI
that "Nudges" the appointment
to an earlier slot that would have gone unused
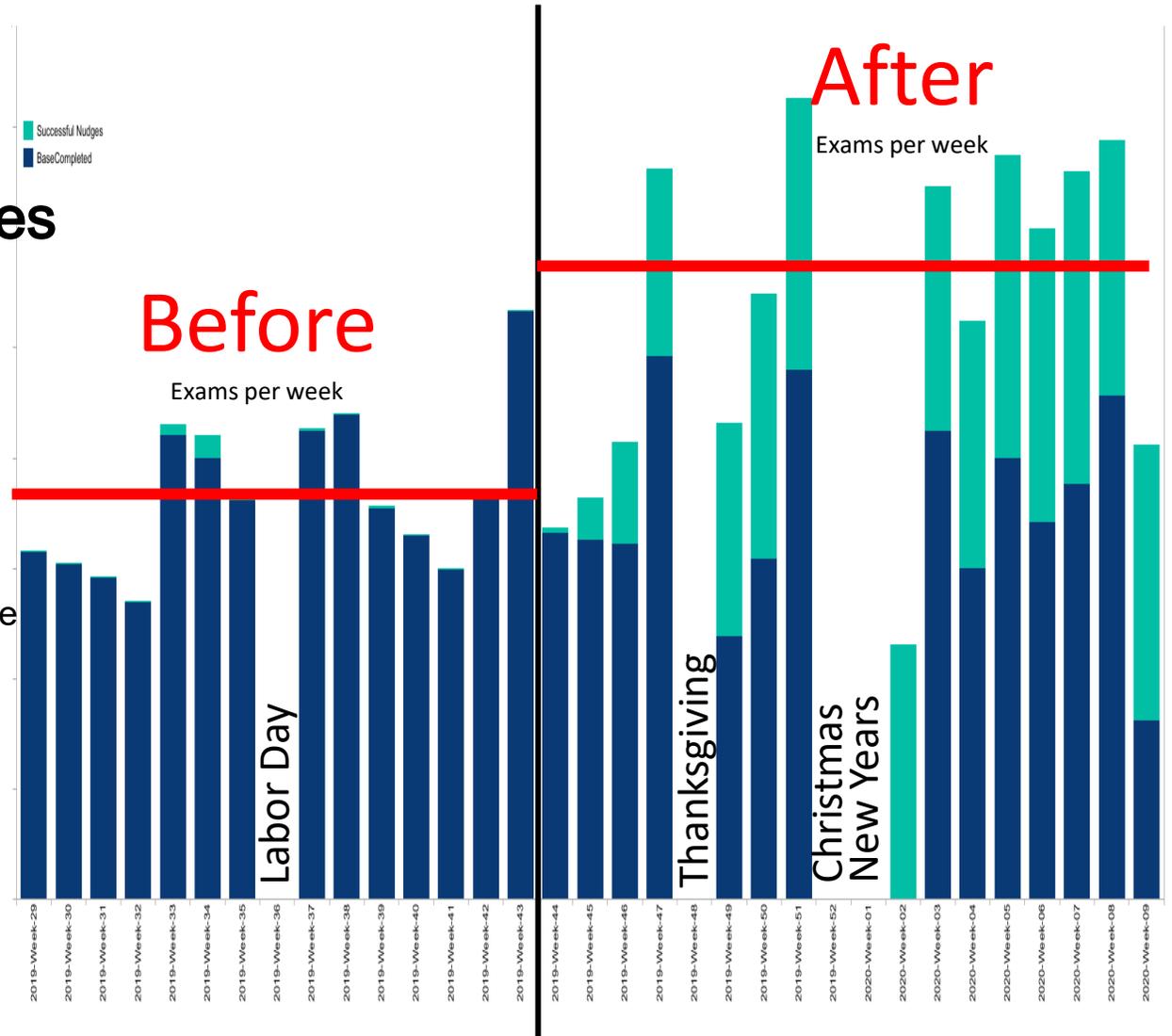
Results

7%
increase

In completed exam volumes
for MRI, CT, MG
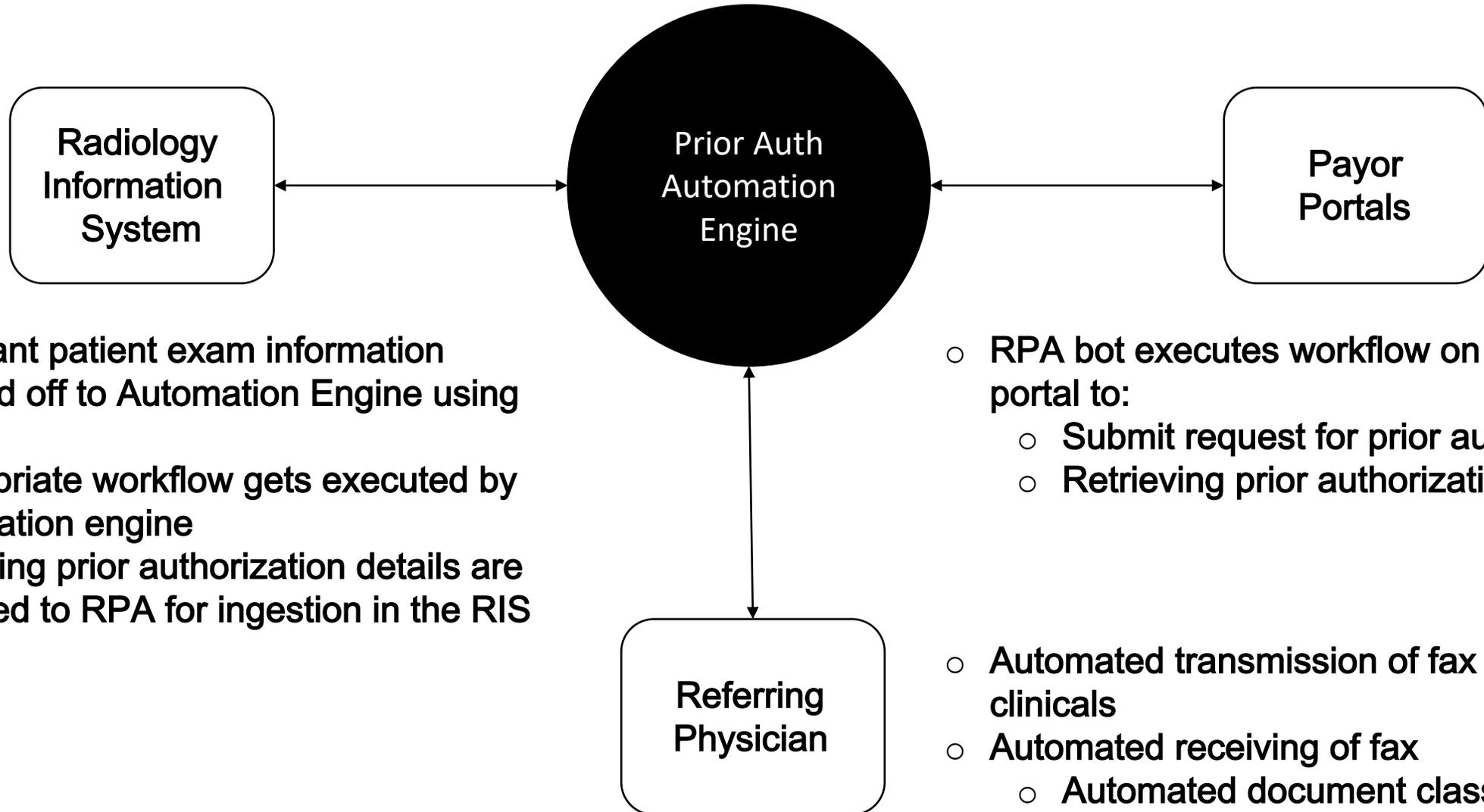
$1.62
Million

In increased gross profit
$2.32 Million in additional revenue

71%
Decrease

In patient wait time
for all nudged exams

Solution: Automated Prior Authorization

Radiology Information System

Prior Auth Automation Engine

Payor Portals

Referring Physician

o Relevant patient exam information handed off to Automation Engine using RPA
o Appropriate workflow gets executed by automation engine
o Resulting prior authorization details are returned to RPA for ingestion in the RIS

o RPA bot executes workflow on payor portal to:
  o Submit request for prior authorization
  o Retrieving prior authorization status

o Automated transmission of fax request for clinicals
o Automated receiving of fax
  o Automated document classification

Results

50% *Automation*
of workload fully automated

62% *reduction*
in backlog of visits
to be processed for prior authorization

3% *increase*
In exam volume
from faster prior authorizations

ocessed daily

1,719
Visits processed
by human resources

880
Visits processed
by human resources

January 19, 2021 January 20, 2021 January 21, 2021 January 22, 2021 January 25, 2021 January 26, 2021 January 27, 2021 January 28, 2021 January 29, 2021 February 1, 2021 February 2, 2021 February 3, 2021 February 4, 2021 February 5, 2021 February 7, 2021 February 8, 2021 February 9, 2021 February 10, 2021 February 11, 2021 February 12, 2021 February 15, 2021 February 16, 2021 February 17, 2021 February 18, 2021 February 19, 2021 February 22, 2021 February 23, 2021 February 24, 2021 February 25, 2021 February 26, 2021

e
Day of Date

3,749
Visits in queue

1,443
Visits in queue

Conclusion

o **Artificial Intelligence can transform administrative operations**

  Not just to read scans

o **Advancements in AI has now made possible to automated the manual workflows**

  While maximizing efficiency in outpatient imaging centers

o **Everybody wins**

  ✓ Shorter wait times for patients & faster turnaround times

  ✓ Maximizing utilization of most critical resources & increase volumes

  ✓ Reducing cost of administrative burden