



Improving throughput efficiency for a busy imaging department

Who/where

A large non-profit health system in the southeast.

Challenge

To increase productivity within the Imaging Department, enhance patient and staff satisfaction, and continue to grow market share proactively.

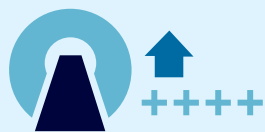
Solution

Philips Healthcare Transformation Services led a 12-week imaging performance improvement project focusing on patient throughput.

A large non-profit health care system serving more than 500,000 residents in the southeast was looking to identify and implement radiology workflow performance improvements.

With the installation of a new CT system and new management, the health system requested a partner to improve throughput in the department. Philips clinical consultants were engaged to create process improvements resulting in workflow efficiencies. Implementation focused on achieving efficient patient flow through the imaging department.

Results*



47%

optimization of imaging throughput



32%

reduction in CT imaging time for ED patients



40%

improvement in outpatient CT turn-around-time



Created

an Imaging analytics performance dashboard

Working together toward an improved experience

Philips partnered with the health system to define and implement improvements in the radiology workflow which would result in improvements in several areas including productivity, physician and patient satisfaction, and employee engagement.

Goal and assessment

The goal for the Imaging Department was to be positioned to capture market share despite a declining population of their community. A comprehensive, multi-channel approach was taken to bring together key stakeholders to improve workflow. An overarching aim of the project was to define key metrics and performance targets to establish valid key performance indicators (KPIs) and subsequently help with throughput to maintain a positive patient experience while providing more efficient care.

Philips consultants engaged with clinical staff and leadership to determine the current state of operations using proven methodology. Process and practice routines were analyzed and discussed with the stakeholders to discover inefficiencies. Performance improvement opportunities were identified at two of their three locations. Of significance, staff productivity was identified to be below the 60th percentile in the areas measured, and in several instances below the 25th percentile. During the assessment, Philips identified opportunities to optimize workflows, improve data capture, align staffing with testing demand, streamline protocols, reduce redundant paperwork, and enhance operational design.

After a five-month hiatus due to the COVID-19 pandemic, the consultants helped to drive implementation of the process recommendations and change management support.

Approach

The Philips approach is unique because it takes a holistic approach to include workflow, technology enablement, and key market drivers. An innovative design thinking methodology is then utilized to focus on solution options and to create a preferred future state.

Four staff workgroups were created to define the future state performance improvement tasks. Each group was organized to demonstrate a new way of working that merges skills and capabilities. Termed 'Operational Intelligence', it is a partnership of continually synchronized people, process, and technology.

- People – **Engagement** and Communication
- Process – Standardization around **Best Practice**
- Technology – **Enablement** of work

 People	 Process	 Technology	
Scheduling Optimizing existing resources while enhancing throughput. 	Throughput Implement efficient workflows which will improve system utilization, thereby ensuring financial excellence. 	Quality To provide safe, effective, patient-centered radiologic care consistent with best practices and national benchmarks. 	Data Capture accurate data which will allow us to evaluate the progress of imaging toward delivering quality care with zero defects. 

Workgroup highlights

In order to affect true performance improvement, 'buy-in' from many hospital entities was needed. Philips and hospital project leaders were able to bring together the clinical, operational, and functional stakeholders.

In addition, each workgroup was comprised of staff representative of the modalities within the Imaging Department (i.e. IT, PACS, etc.).

Philips consultants guided each group to a set of recommendations which were then implemented across the imaging department.

Scheduling workgroup

It was determined that the patient was not properly involved in the scheduling process.

A pre-visit patient confirmation process was established, which included concise, modality specific instructions. Blind scheduling was eliminated.

Quality workgroup

The Imaging Department wanted DICOE accreditation from the ACR.

A quality manual was built based on ISO 9001:2015 standards and a quality policy that aligned with the hospital's mission and values was developed. A quality committee charter was created.

Throughput workgroup

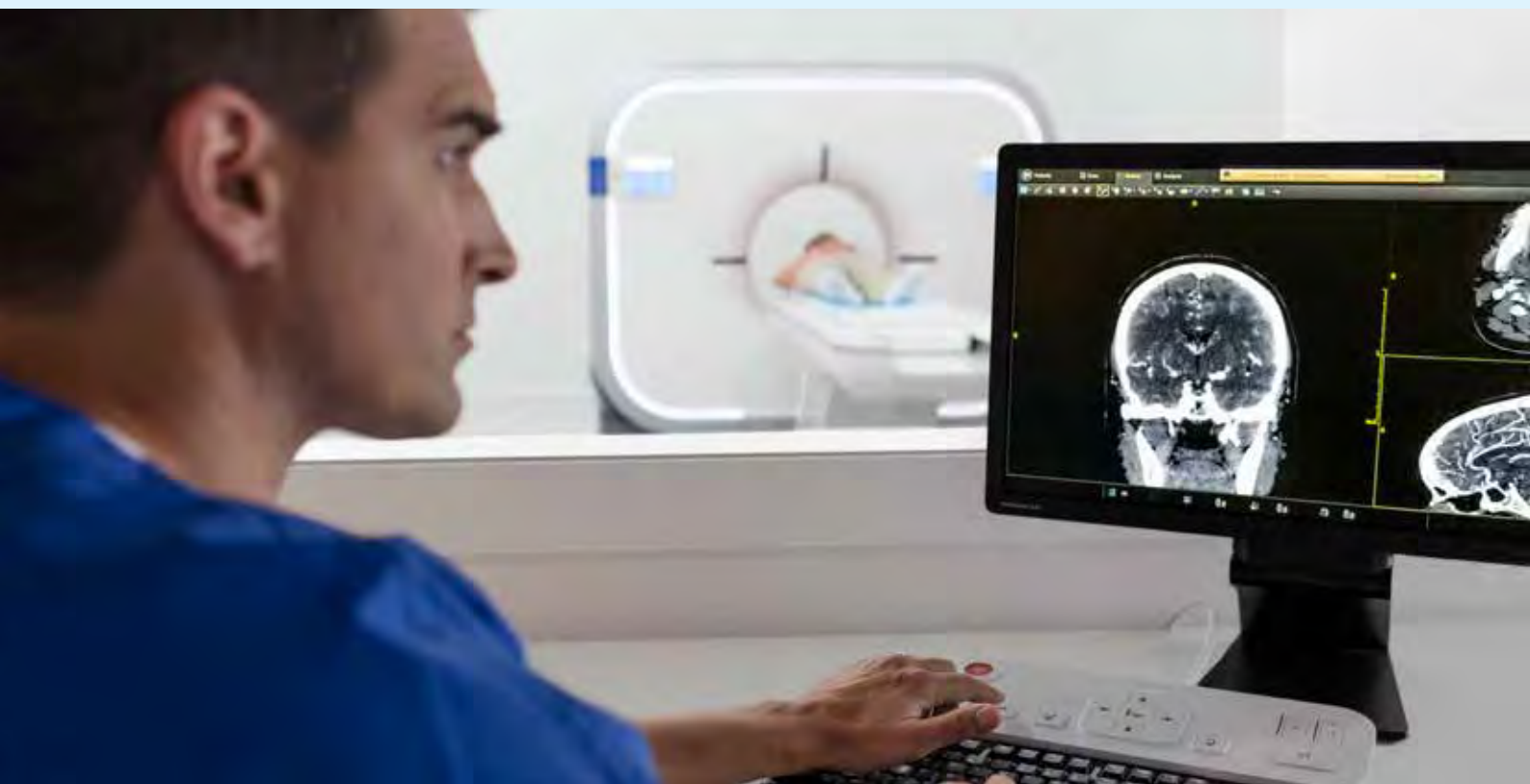
Unnecessary, burdensome paperwork slowed workflow as did transportation issues.

Duplicate and non-approved paperwork was removed. Staffing zones for transport were renegotiated and point-of-care testing was initiated.

Data Capture workgroup

Data points were not actionable or effectively tracked. KPIs required alignment with goals.

A Six Sigma matrix tool helped define meaningful throughput metrics. Data was cleaned and standard definitions established. KPI targets were agreed upon.



Accomplishments at engagement end

- Created an Imaging analytics performance dashboard
- Decreased CT turnaround times for ED and inpatients
- Improved data capture for outpatient registration times
- Created new CT workflow to optimize room utilization
- Provided CT staffing recommendations to optimize scan throughput
- Implemented point-of-care creatinine testing for outpatient and ED contrast studies
- Developed quality manual for the imaging department
- Created DICOE actionable tracker
- Heightened collaboration between ED, CT, and transportations departments
- Implemented daily readiness huddle
- Improved inpatient throughput by implementing a standard process for transportation requests
- Implemented nursing and IR physician huddle day prior to review next day schedule

Results*

Throughput improvement was realized across the department (CT, Ultrasound, X-ray) with **time savings of as much as 47%** at the end of the consulting engagement. Data accuracy, scheduling, workflows, and quality standards were all addressed, and these learnings contributed to the project's success.

Quantified impact of workflow changes

Significant time savings were realized in several key areas:

- **40% improvement** in outpatient CT turnaround times
- **14% improvement** in inpatient CT turnaround times
- **Significant improvements** in outpatient metrics for ultrasound and X-ray

Of particular interest to the health system was the reduction for all CT imaging in the Emergency Center from a **mean daily time of 125 minutes to 85 minutes – a 32% improvement.**

The health system continues to employ the performance improvement initiatives begun during the Philips partnership project and **expects further efficiencies in the future.**

Learn more

Through collaborative and people-focused consulting engagements, Philips can help develop innovative solutions to solve your most complex challenges of care delivery. We can help you achieve meaningful and sustainable improvements in clinical excellence, operational efficiency, care delivery, and financial performance to improve value to your patients.

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