CENTRALIZED RADIOLOGY SCHEDULING: HOW IMPROVING ITS EFFICIENCY CAN IMPROVE PATIENT ACCESS TO IMAGING AND SATISFACTION: A CLOSE EXAMINATION OF KEY PROCESS STEPS AND PROCESS METRICS

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OUTLINE:

• Describe workflows in scheduling departments of high volume Academic Centers.
• Discuss the processes and bottlenecks in such workflows.
• Highlight process metrics to track scheduling department performance.
• Propose new integrated scheduling models using lean methodology to improve Imaging Access.

• Every process step has lot of variability.
• Call centers induce additional process step.
• Order errors or changes add to delays.
• Modality capacity and availability is critical for scheduling room built.
PROCESS IMPROVEMENT FOR NON ELECTRONIC ORDERS

Metrics to measure performance.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexing Turn around Time</td>
<td>Time taken to index out of network fax based orders.</td>
</tr>
<tr>
<td>Manual Indexing error rate</td>
<td>Total number manual indexing errors ex: wrong DOB</td>
</tr>
</tbody>
</table>

Solution Pathways:
• Effort should be made to upgrade to electronic auto indexing/document management pathway, this will not only decrease TAT from order to scheduled appointment but save costs.
PROCESS IMPROVEMENT: CALL CENTER

**Metric** | **Importance**
---|---
% Accepted call volume | High acceptance rate will result in more call capture.
Call wait times | Time to make contact with call agent.
Call processing times | Time to process call aka “talk time”.
Abandonment call rate | Number of calls dropped.

Sample:

<table>
<thead>
<tr>
<th>Week of</th>
<th>Total Calls</th>
<th>Total Calls</th>
<th>% of Calls</th>
<th>Total Calls</th>
<th>% of Calls</th>
<th># Calls Answered in 30 Seconds</th>
<th>% of Calls Answered in 60 Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 6, 2019</td>
<td>2,041</td>
<td>2,007</td>
<td>98.13%</td>
<td>34</td>
<td>1.67%</td>
<td>1,701</td>
<td>94.75%</td>
</tr>
</tbody>
</table>
A DAY IN THE LIFE OF A RADIOLOGY SCHEDULER
PROCESS IMPROVEMENT: SCHEDULER WORK FLOW

1. Develop service standards for work flow (e.g., to be scheduled, insurance verification, waiting for information)
2. Established workflow standards for patient and provider communication.
3. Avoid multiple work queues without ownership.

<table>
<thead>
<tr>
<th>Metric</th>
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</thead>
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<tr>
<td>Average time to confirm a scheduled appointment (Scheduling TAT).</td>
<td>Time to process an order to confirmation.</td>
</tr>
<tr>
<td>Average scheduling errors/month</td>
<td>Errors related wrong location, protocol etc.</td>
</tr>
<tr>
<td>Scheduling back log volumes by work Q</td>
<td>Indicator of scheduling efficiency</td>
</tr>
</tbody>
</table>

- Develop service standards for work flow (e.g., to be scheduled, insurance verification, waiting for information)
- Established workflow standards for patient and provider communication.
- Avoid multiple work queues without ownership.
Current Scheduling Work Flow Process Map

In network

EPIC cpoes in clinic

With or Without Authorization

Auth obtained by Referral Co-ordinators

Insurance Auth obtained by Medical Assistants.

Out side Provider

Paper based

Key Bottle Necks & opportunities:

1: Fragmented Scheduling system and lacks integration in Rad

2: No well defined routing procedure for call center scheduled procedures.

3: Difficult to measure process metrics like Call processing times, TAT, Abandonment rates etc

4: Need a Robust process to capture leakage and reduce no show rates.

5: Failure of communication channels among (Auth, Caller Center and Schedulers)

RAD Central Scheduling Team (PFRs) Grp 1

Faxing Documents

Annex

Emmerson

North

No pre auth needed

Pre Auth Done

Pre Auth needed not done by Clinic

PFRs: Verify or obtain auth, check lab...

No pre auth needed

Yes

No

Patient Contacted

Front Desk

No

Yes

PFRs call patient to finalize scheduling
CASE EXAMPLE OF BUILDING MRI MODALITY CAPACITY

Operational Outpatient MRI Capacity Strategic Mapping:

Key Assumptions for Analysis:
1. Studies that take top 80% of current outpatient volume will be studied.
2. New 3T at New north up and running from March 1st.
3. Anesthesia, Sedation, Pacer maker and Cardiac would still be done at Main campus.

MRI Scanner Fleet by Locations:
- UMI: 1.5T GE, 1.5 Siemens
- North Campus: 3.0 T GE, 3.0 Siemens (2nd machine)
- South Campus: 1.5T GE
- UCampus: 3.0 Siemens, 1.5 Siemens

Key Action Items:
1. Build: Scheduling blocks of 30 min and 60 min for all outpatients.
2. Scan times and protocol standardized on all GE and Siemens scanners.
3. Optimize Tech and Tech aid for each scanner.
4. MRI patient screening preparation done a day before with nursing support.
5. Weekday and weekend extension of MRI hours of operations.

Type of MRI Study | UMI | North Campus | South Campus | U Campus
--- | --- | --- | --- | ---
MRI Brain w/ and w/o contrast  | 40 min | 54 min | 51 min | 63 min
MRI L Spine w/o | 30 min | 30 min | 25 min | 56 min
MRI Abdomen Pelvis w/ and w/o contrast | 45 min | 50 min | 50 min | 66 min
MRI Abdomen w/o contrast | 28 min | 28 min | 28 min | 31 min
MRI Upper Ext w/o contrast | 42 min | 65 min | 30 min | 60 min
MRI Lower Ext w/o contrast | 30 min | 50 min | 30 min | 54 min

Average current Studies per day/magnet:
- 8-9/day/Magnet
- 6-7/day/Magnet
- 7-8/day/Magnet
- 5-6/day/Magnet

MRI out patient Scheduling slots for future:
- 30 min
- 60 min

MRI studies on 30 min
- MRI Brain w/o contrast (except Seizure, dementia, DBS)
- MRI L spine w/o
- MRI C spine w/o
- MRI Knee w/o, MRI Shoulder w/o
- MRI Abdomen w/o

MRI studies on 60 min
- MRI Brain w/ contrast (Seizure, dementia, DBS), MRI Brain with and w/o contrast
- MRI (any body part) with and w/ out
- MRI Abdomen pelvis with and with out
- MRI prostate
- MRI Long bones, small joints

Example: MRI Brain w/o contrast (except Seizure, dementia, DBS)
01. Patient Centered Integrated Radiology Scheduling

- Radiology scheduling is complex and need efficient collaborative scheduling teams to improve access.

02. Integrated POD of Call center, scheduler and Authorization experts.

- Well defined assembly line framework to facilitate communication and accountability.

03. IT scheduling infrastructure

- IT workflow enhancements
- Document management system.
- Advanced analytics tools.

04. Analytics

- Access metrics can be measured accurately.
- Scheduling process & productivity metrics tracked.