Clinical Safety & Effectiveness
Cohort # 23

Reducing Cycle Times within MARC Orthopedic Clinic

Educating for Quality Improvement & Patient Safety
The Team

• Division
  – CS&E Participant: Rosa Ortega
  – CS&E Participant: Angela Rios
  – CS&E Participant: Maria Stewart-Leal
  – CS&E Participant: Dina Wright
  – Team Member: Donna
  – Team Member: Lindsay
  – Sherry Martin (Project Facilitator)

• Sponsor Department
  – Orthopedics Clinic, MARC 3rd Floor
  – UTHP Clinic Operations
OUR AIM

To decrease cycle times (check-in to check-out) at MARC Orthopedics. We aim to decrease cycle time from 135.41 minutes (2.2 hours) to 90 minutes (1.5 hours).
Background

Patient comments concerning waiting times:

“I waited more than 1.5 hours for an appointment that was set up 3 weeks earlier.”

“We were quite disappointed in how long we had to wait.”

“This office needs to improve the wait times.”

“I had a scheduled appointment and didn't see the doctor for two hours. If y'all could make them happen when they're supposed to then that would be great.”

“Improve the wait time. I was requested to come 15 minutes early and I did but then waited nearly an hour in waiting room past my appointment time. Very frustrating when I have things to do.”

“Tell the patient at arrival there will be a long wait time! I was told to be there early because I was a new patient. I complied and arrived at least 30 minutes prior to appointment time. I completed information updates, then waited, and waited, and waited!”
Cycle Times (Check-in to Check-out)
Traffic (AKA) Spaghetti Diagram
Patient long cycle times (from check in to check out) causing long waiting times

**Equipment**
- Large waiting rooms
- Utilize EHR for proper documentation of orders

**People**
- Limited Staff
- MA assigned to many provider
- MA assigned to many provider
- No standardization
- No monitoring

**Procedures**
- Paper Orders still being utilized (i.e. Action Sheet)
- Casting is only done in casting rooms
- Radiology orders are done day of the appointment
- Epic status not being utilized

**Materials**
- Casting materials not available in rooms
Interventions

**PLAN**

- Define processes
- Educate staff on the responsibilities
- Setup rooms equally with correct casting supplies and dressing changes to minimize additional in and outs of patient rooms.
- Assign one MA per provider, who would enter orders on their behalf, and check out patient
- Utilize EPIC status change within the Orthopedic department using colored dots to indicate where the patient is located within the clinic.
### Dr. Galindo (Foot and Ankle)

#### NP/CON Procedures (10/1/18)

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>NP/CON Procedures</th>
<th>How many Over books/1</th>
<th>Overall Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow-Up</td>
<td>12:19</td>
<td>-</td>
<td>0.22</td>
</tr>
<tr>
<td>Post Op</td>
<td>12:20</td>
<td>-</td>
<td>12:27</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:27</td>
<td>-</td>
<td>12:33</td>
</tr>
<tr>
<td>Follow-Up</td>
<td>12:31</td>
<td>-</td>
<td>12:31</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:33</td>
<td>-</td>
<td>12:33</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:34</td>
<td>-</td>
<td>12:33</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:35</td>
<td>-</td>
<td>12:33</td>
</tr>
<tr>
<td>Post Op</td>
<td>12:36</td>
<td>-</td>
<td>12:33</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:37</td>
<td>-</td>
<td>12:33</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:38</td>
<td>-</td>
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</tr>
<tr>
<td>New Patient</td>
<td>12:39</td>
<td>-</td>
<td>12:33</td>
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</tbody>
</table>

### Dr. Ryan Rose (Hand and Wrist)

#### NP/CON Procedures (10/1/18)

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>NP/CON Procedures</th>
<th>How many Over books/1</th>
<th>Overall Time (minutes)</th>
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</thead>
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<td>New Patient</td>
<td>12:46</td>
<td>-</td>
<td>12:47</td>
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<tr>
<td>Follow-Up</td>
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<td>12:48</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:49</td>
<td>-</td>
<td>12:49</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:50</td>
<td>-</td>
<td>12:50</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:51</td>
<td>-</td>
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</tr>
<tr>
<td>New Patient</td>
<td>12:52</td>
<td>-</td>
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</tr>
<tr>
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<td>12:53</td>
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<td>12:53</td>
</tr>
<tr>
<td>New Patient</td>
<td>12:54</td>
<td>-</td>
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</tr>
<tr>
<td>New Patient</td>
<td>12:55</td>
<td>-</td>
<td>12:55</td>
</tr>
</tbody>
</table>

### Dr. Choput (Spine)

#### NP/CON Procedures (10/1/18)

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>NP/CON Procedures</th>
<th>How many Over books/2</th>
<th>Overall Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow-Up</td>
<td>8:17</td>
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<td>9:07</td>
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<tr>
<td>Post Op</td>
<td>9:06</td>
<td>-</td>
<td>9:15</td>
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<tr>
<td>New Patient</td>
<td>9:41</td>
<td>-</td>
<td>9:46</td>
</tr>
<tr>
<td>New Patient</td>
<td>9:20</td>
<td>-</td>
<td>9:48</td>
</tr>
<tr>
<td>Follow-Up</td>
<td>10:19</td>
<td>-</td>
<td>10:54</td>
</tr>
</tbody>
</table>
COLORED DOTS IN EPIC

- Green: Patient ready to room
- Red: Patient is done with visit (ready to schedule follow)
- Yellow: Patient in x-ray
- Grey: Patient needs x-ray in cast
- Blue: Patient needs an X-ray out of cast
### Driver

<table>
<thead>
<tr>
<th><strong>Aim</strong></th>
<th><strong>Primary Drivers</strong></th>
<th><strong>Interventions</strong></th>
</tr>
</thead>
</table>
| To decrease cycle times (check-in to check-out) at MARC Orthopedics. We aim to decrease waiting times from 135.41 minutes (2.2 hours) to 90 minutes (1.5 hours). | - Casting only done in 2 casting rooms, causing delays.  
  - Radiology orders made day of appointment | Create orders to give to patients after visit summary, to get imaging done before appointment |
| | - Epic not being optimized  
  - Casting materials are not available in rooms | Get extra carts for casting supplies  
  Fill rooms with supplies  
  Utilize EPIC dots |
| | - Paper orders are still being used  
  - Clinical staff (MA’s) working with many providers | Assign an MA to a provider |
| | - No standardization  
  - Large waiting room | Create flow in EPIC for all to use |
Results/Impact

Orthopedics Cycle Times (October 2018 - January 2019)

- UCL = 150
- LCL = 29
- Mean = 89
- Mean = 85
- UCL = 127
- LCL = 43
ACT

- Audit by observation staff usage
- Create a checklist for PAR levels of casting supplies for exam rooms and cast carts
- Continuous education on patient status indicators (use monthly staff meetings for discussion)
- Review of MD templates with practice leadership to ensure scheduling templates allow for access and workflow efficiencies.
Return on Investment

- If we reduce the cycle time from 2.2 hrs to 1.5 hrs, we would pick up one patient appointment per day. Based upon our payor mix, that would mean for new patients $101/day; and $26,664/year.

<table>
<thead>
<tr>
<th></th>
<th>On Average Per Visit</th>
<th>On Average Per Month</th>
<th>On Average Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Charges</td>
<td>Reimbursement</td>
<td>Ext 22 chn days</td>
</tr>
<tr>
<td>New Patient</td>
<td>$210</td>
<td>$101</td>
<td>$2,222</td>
</tr>
<tr>
<td>Follow Up</td>
<td>$142</td>
<td>$88</td>
<td>$1,496</td>
</tr>
</tbody>
</table>

*** MD visit's, NP/30 min, F/U 15 min
Lessons Learned

• It’s very important to define roles and standardize workflows for consistency. The patient experience is directly affected.
• Sometimes mini-workflows (systems) are created to help increase performance goals while unintentionally negatively affecting the patient.
• Underestimated the time needed to get a complete understanding of the operations and develop an action plan that is meaningful and focused on a specific target.
• Changing culture is very difficult finding the right champions are critical to the success.
Thank you!