Clinical Safety & Effectiveness
Cohort # 22

Improving Efficiency In The Ophthalmology Clinic

Team 6

Educating for Quality Improvement & Patient Safety
The Team

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- CS&E Participant: Laura Vigil, COA, OSC
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- CS&E Participant: Lisa Pacheco, MA, OSC
- Team Member: Jennifer Ramos, COT Clinic Manager
- Team Member: Terri Carrillo, COT Clinic Manager
- Team Member: Amber Martin, COA
- Team Member: Kendall Wannamaker, MD PGY-3, statistical analysis
- Team Member: Brian Planchard, MD
- Project Facilitator: Ventrice Shillingford-Cole, BA

Sponsor Department: Ophthalmology

Dan Johnson, MD, Chairman of Ophthalmology
What We Are Trying to Accomplish?

AIM STATEMENT

To improve efficiency in the ophthalmology clinic session time from 4.5 hours to 4 hours by 5/1/2018
Background

• **Context:**
  – Efficiency of TIME is an issue in ophthalmology clinic.
  – Increased efficiency may allow more appointment slots for increased patient access to care and/or more time spent teaching residents.

• **Rationale:**
  – Scribes have been shown to increase efficiency in medical practice⁴ thus implementing them should help our practice as well.
Background Data

Why introduce a scribe to ophthalmology practice?

- EMR adoption reduced the number of patients seen by ophthalmologists\(^1\)
- Scribes support increased clinic flow, allowing physicians more TIME to see more patients\(^2\)
- Protect doctor by witnessing doctor-patient interactions\(^3\)
- More patients results in increased clinic revenue
- Less time seeing patients can mean more time for resident teaching
How Will We Know That a Change is an Improvement?

• **Types of measures**
  - Length of Session Times* ([*Tracking the time from first patient to be seen by MD to the last patient in a given session (AM or PM)*])
  - Length of Doctor/Patient interaction time [per encounter]
  - Encounter type/template time* ([*i.e. new patient, post-op, pre-op*] to monitor template time adherence)
  - Physician satisfaction

  – **Specific targets for change**
    – Decrease individual encounter times to in turn decrease session time

**DEFINITIONS**

*Session Time*: Time MD starts with first patient to time MD ends with last patient for a given AM or PM

*Template Time*: The time allotted in MDs schedule for a particular encounter type (i.e. post op, new patient etc)
Provider: Dr. Waldman, Dr. Planchard

Type of Visit: F/u, Post op NPV, DFE Pre OP, Procedure

Gender: M/F
Age: 65
Ambulatory: Y/N
Language: English
Add on Procedure: Punctal Plugs
Visit Start Time: 10:45
Visit End Time: 11:23
Driver Diagram

Primary Drivers
- Provider schedule template
- Tech support
- Same day testing
- Same day procedures

Secondary Drivers
- Adjust provider schedule template for shorter visit types at start of each session
- Maintain tech availability
- Adjust clinic schedule to allow for pre-clinic ancillary testing (visual fields, a-scans)

Tertiary Drivers
- Selective time slots for longer visit types such as pre-op and dilated exams
- Allow for in room tech support (assist in translation, patient set up for procedures, consent patient)
- Limit ability to do same day procedures due to time delays with insurance verification, precertification requirements. Only urgent cases

Actions/Interventions
- Assign scribe to provider

**AIM:** Improve Efficiency Ophthalmology clinic session from 4.5hrs to 4.0 hrs. per session

**Outcome Measures:**
1. Session time
2. Doctor: Patient time
3. Template time adherence
Methods

• 2 Attending MDs tracked:
  – Corey Waldman, MD; glaucoma and cataract
  – Brian Planchard, MD; cornea, glaucoma, cataract

• 2 locations: MARC and Texas Diabetes Institute (TDI)

• Both providers are of similar experience level, subspecialty, patient load, and visit types

• Measures:
  – Session Time (minutes)
  – Patients Per session
  – Doctor-Patient time (minutes)
  – Visit type
Baseline Data

• 83 patients
• 17 sessions
• Average Patients per Session: 15
• Average Session Time
  – Overall: 265 minutes (4.42 hours)
  – MARC: 272 minutes (4.53 hours)
  – TDI: 226 minutes (3.77 hours)
• Average Doctor/Patient Time
  – Overall: 15 minutes
  – Dr. Waldman: 15.8 minutes
  – Dr. Planchard: 13.3 minutes
• % of Visits Exceeding Template Time: 27%
Baseline Data Interpretation

• Same day testing increases length of visit and doctor wait time
• Add on procedures increase length of visit
• Pre-op visits are too long
• Schedule templates could be improved
Primary Intervention

• A **scribe** was assigned to both MDs
• The objective of the scribe was to **facilitate** all aspects of visit
  – **Room** current and next patient
  – **Record exam** findings and plan while MD examines patient
  – **Assist MD** with any additional needs
  – **Spend extra time** with patient if needed while MD finishes documenting visit notes
  – **Escort** patient out of room
Additional Interventions

• Schedule templates were adjusted based on baseline data and experience
  – **Simple patients first** (i.e. pressure check or day one post op)
  – **No appointments past 3PM** → double book earlier ones
  – Limit add on procedures
  – **Limit same day testing** → perform testing only visits on separate day
  – **Increase front end assistance** from techs on pre-op visits
    • Fill out paperwork
    • Order post op drops
Implementing the Change

• First session including a scribe - 2/19/2018
• Utilized Scribe checklist

• Challenges
  – Scribe unfamiliar with provider at first
  – Scribe required to learn EMR
  – Scribe may not always be available
Results

• 21 sessions
• 169 patient encounters

1° **Outcome ➔ Session time decreased**
   – Overall: 223 minutes (3.72 hours)
   – MARC: 222 minutes (3.7 hours)
   – TDI: 226 minutes (3.77 hours)

2° **Outcome ➔ Doctor:Patient time decreased**
   – Overall: 10.9 minutes
   – Dr. Waldman: 11.3 minutes
   – Dr. Planchard: 8.4 minutes

3° **Outcome ➔ % of visits exceeding template time:**
   – Decreased to 11%
## Summary Data Table

<table>
<thead>
<tr>
<th></th>
<th>Pre Scribe</th>
<th>Post Scribe</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patients Per Session</strong></td>
<td>15.8 ± 4.4</td>
<td>14.9 ± 2.8</td>
<td>P=0.45</td>
</tr>
<tr>
<td><strong>Session Time (minutes)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Overall</td>
<td>265.0 ± 31.5</td>
<td>223 ± 19.9</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>-MARC</td>
<td>272.2 ± 37.0</td>
<td>222 ± 22.4</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>-TDI</td>
<td>256.9 ± 23.6</td>
<td>226 ± 9.34</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td><strong>Doctor:Patient Time (minutes)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Overall</td>
<td>15.0 ± 8.3</td>
<td>10.9 ± 7.0</td>
<td>P&lt;0.005</td>
</tr>
<tr>
<td>-Dr. Waldman</td>
<td>15.9 ± 7.1</td>
<td>11.3 ± 7.3</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>-Dr. Planchard</td>
<td>13.3 ± 10.6</td>
<td>8.4 ± 4.0</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>-MARC</td>
<td>14.9 ± 8.8</td>
<td>11.9 ± 7.2</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>-TDI</td>
<td>15.2 ± 6.5</td>
<td>9.1 ± 6.3</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td><strong>Template time Adherence</strong></td>
<td>73%</td>
<td>89%</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>StdDev</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Average Doctor-Patient Time</td>
<td>10.90</td>
<td>7.02</td>
<td></td>
</tr>
<tr>
<td>Average Follow up</td>
<td>10.52</td>
<td>6.58</td>
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</tr>
<tr>
<td>Average Laser</td>
<td>10.00</td>
<td>2.37</td>
<td></td>
</tr>
<tr>
<td>Average New Patient Visit</td>
<td>15.32</td>
<td>8.55</td>
<td></td>
</tr>
<tr>
<td>Average Post Op</td>
<td>8.06</td>
<td>4.50</td>
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</tr>
<tr>
<td>Average Pre Op</td>
<td>14.93</td>
<td>9.99</td>
<td></td>
</tr>
</tbody>
</table>
Breakdown of Visit Types Exceeding Template Time
Scribe Data

- The true stars of the show!

<table>
<thead>
<tr>
<th>Scribe</th>
<th>Average Patient:Doctor Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amber</td>
<td>12.06</td>
</tr>
<tr>
<td>Lisa</td>
<td>9.18</td>
</tr>
<tr>
<td>Tarana</td>
<td>11.00</td>
</tr>
</tbody>
</table>
Results: Physician Satisfaction

• You heard it here first!
Return on Investment

• **Added** two 15 minute patients slots per **session** based on decreased session time

• **Investment** of a single scribe can be covered by adding **2 patients per day**

• **Teaching time** for residents (15 minutes) is now available based on increased efficiency
Return on Investment

• Technician cost: $50,000
• Net visit revenue: $148
• 365 days/ year – 104 weekend days – 14 holidays = 247 days
  – Vacations/meetings (decrease ROI)
  – Downstream revenue i.e. surgeries (increase ROI)
• $73,112 – $50,000 = $23,112 ROI per provider with a tech-scribe every clinic.
Expansion of Our Implementation

• Maintenance of scribes at both sites with 2 providers
• Future plans to implement scribe support for other providers in clinic
• Continue to hire and train more scribes
Conclusion/What’s Next

• **Conclusions**
  – Overall a huge success
  – Session times and encounter times decreased
  – Attending Physician satisfaction with clinic much improved
  – Residents report more satisfaction with clinic experience

• **Future Directions**
  – Assess impact on patient satisfaction and wait time
  – Assess impact on resident teaching time
  – Consider adding more patients per session
  – Time gained from increased efficiency will be used for teaching
  – *Results submitted to 2018 AAO meeting*
Limitations

• Patient satisfaction was not measured
• Patient wait times were not taken into account
• Resident engagement/involvement was not measured, which could alter times
• Potential for reporting bias
References


Thank you!

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