



Clinical Safety & Effectiveness

Cohort # 24

Team #6

# Optimizing Ophthalmic Imaging Processes



# Ophthalmology Imaging Team

Team Leader: Jennifer Ramos, COA, Practice Manager

Team Secretary: Kathi Huprich, MBA, CMPE, CPC, Assoc Dir/Finance

Medical Director: Constance L. Fry, MD

Lead Photographer: Carrie Cooke, COA, CRA, CDOS

Senior Technician: Miguel Villanueva, COA

Facilitator: Sherry Martin, MEd

Statistical Consultant: Wayne Fischer, PhD

Clinic participants:

Tarana Ahmed, COA

Lorraine Lopez, COA

Edward Martinez, COT

Stefan Sensenbrenner, COA

Stephanie Zamarripa – Clinic Supervisor

Dr. Jihad Isteitiya – Physician Liaison

Dr. Hamzah Khalaf – Physician Liaison

Natalie Leija Torres - Front desk lead

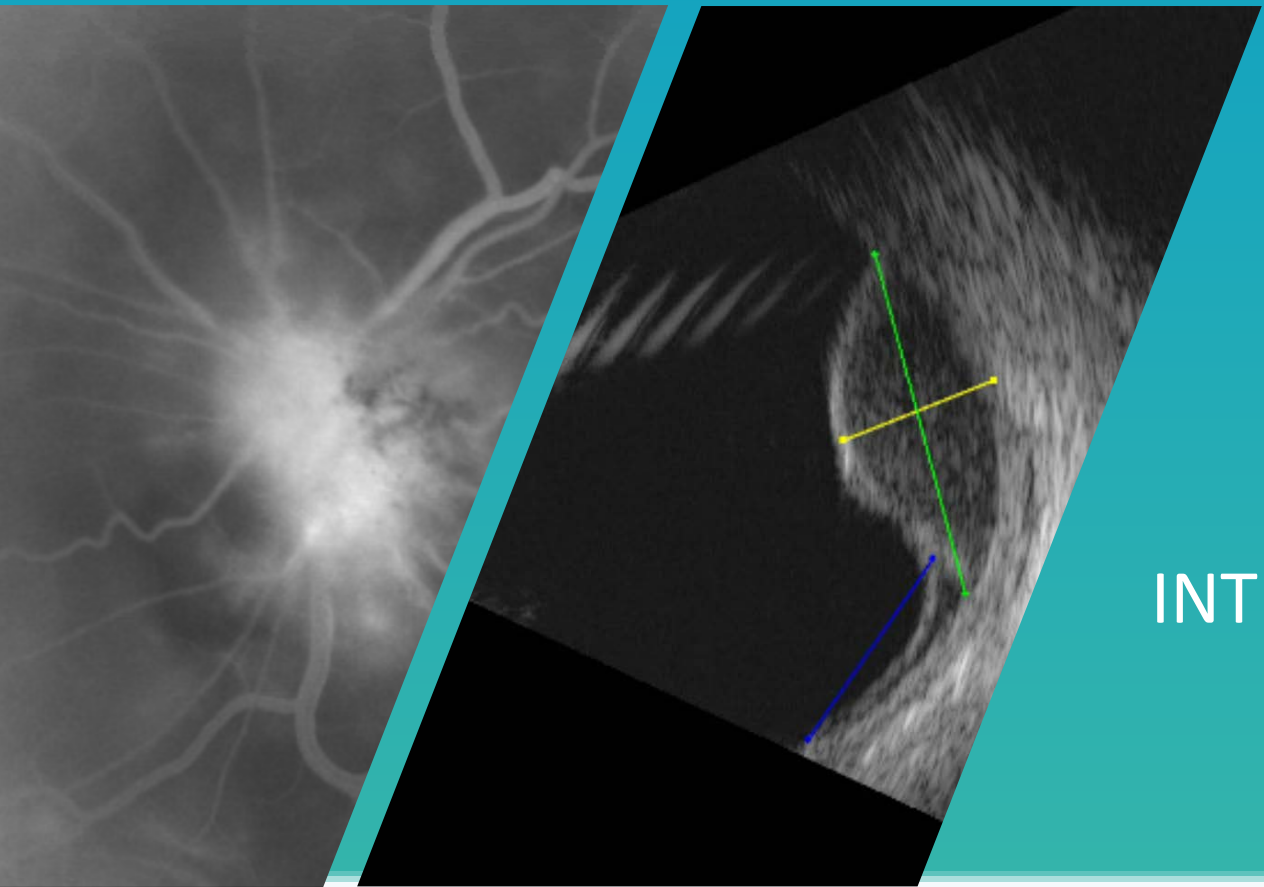
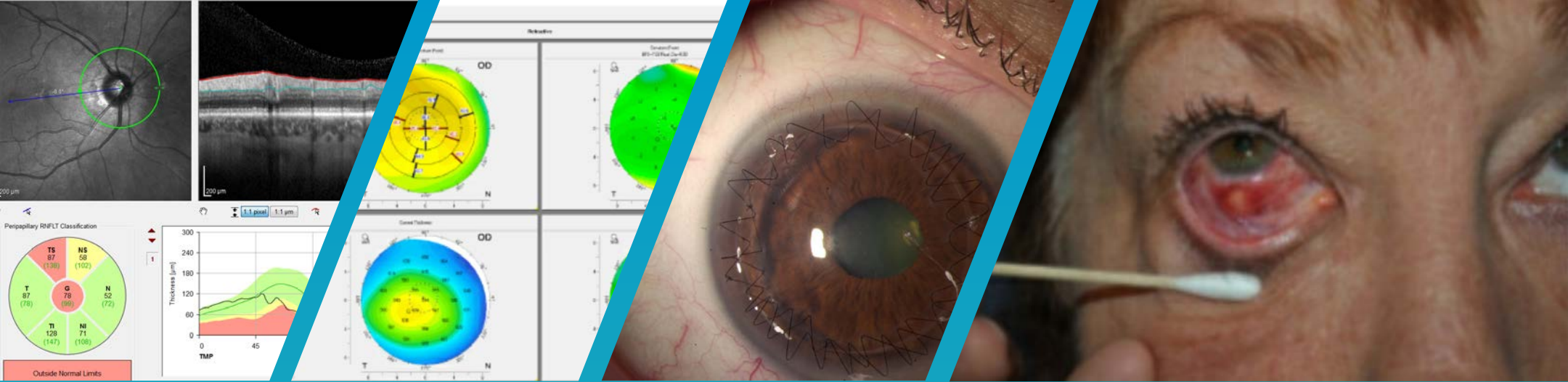
Halley Herrera – Scheduling

Braeden Moody, MS 1

Sponsor:

Daniel A. Johnson, MD, Professor & Chair, Ophthalmology

# Background



SHORT TESTS < 10 MIN  
INTERMEDIATE TESTS 20 MIN  
LONG TESTS ~ 45-60 MIN



# AIM STATEMENT

To decrease the average time waiting for Ophthalmic Imaging from 13.6 minutes to 10 minutes by June 2019

# Data Collection

Type of Measure	Measure	Data Category		Data Source	Data Frequency	Data Steward
Imaging time	Minutes waiting for imaging	New	Manual	Manual tracking	Per session	Carrie
Patient satisfaction	Positive responses for would always recommend	Existing	Automated	NRC Surveys	Average per month	Amber
Physician & Staff Experience	Positive responses on Practice Reserve Survey	Existing	Automated	Practice Health Survey	Quarterly	Jennifer/ Dr. Fry

# How will we know it has improved?



Decrease Patient imaging time – Manual Time Study



Improve patient experience – Patient Satisfaction Survey



Increase number of patients – EPIC reports



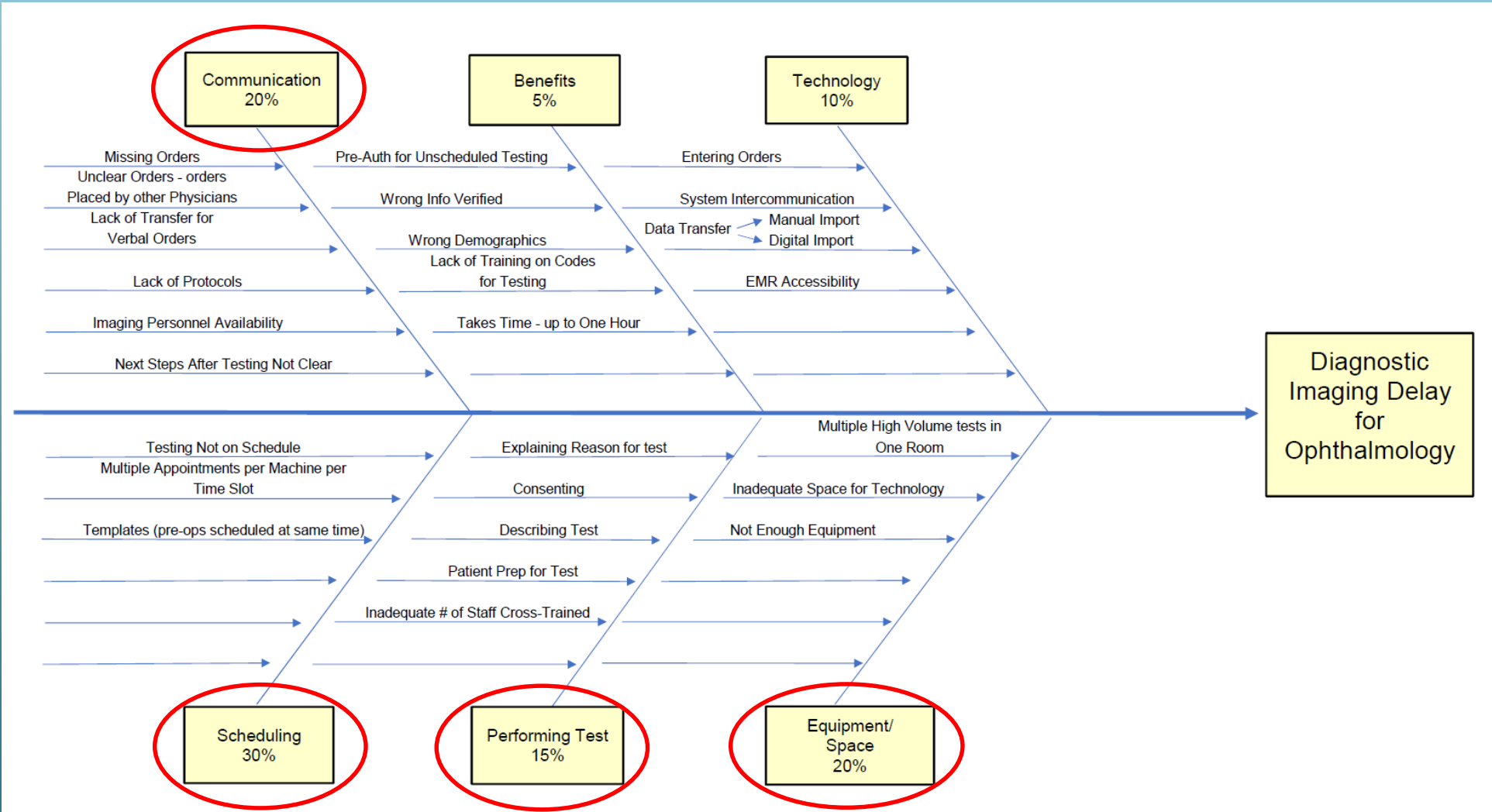
Physician & Employee experience improved – Practice Health Survey





44 steps

# Cause & Effect Diagram



# Researching Best Practices



Visited Austin Retina Associates

Observed Lean processes in action

- Instant messaging
- POD system
- Cross-trained teams

# Interventions

# Driver Diagram

## Goal

- **Decrease patient wait time for Ophthalmic Imaging from 13.6 minutes to 10 minutes by June 2019**

## Primary Drivers

- Improve scheduling processes
- \_\_\_\_\_
- Optimize Communication
- \_\_\_\_\_
- Cross training personnel to handle more imaging functions
- \_\_\_\_\_
- Obtain additional equipment & space for imaging

## Interventions

- Update slot durations
- Tech review scheduled imaging & ensure accuracy with physician plan
- Identify session for imaging
- Match scheduling & workup protocols
- \_\_\_\_\_
- 
- Avoid unnecessary testing
- Update & use Routing Form
- For next appointment needing imaging – providers route EPIC check out notes to Front Desk Pool
- \_\_\_\_\_
- Techs to do short imaging tests
- Standardize test instructions to patient (AIDET)
- \_\_\_\_\_
- 
- Rearrange imaging setup -allow multiple tests simultaneously
- Obtain new a new OCT machine (year)

## Measures

- EPIC slot utilization reports on unscheduled tests
- \_\_\_\_\_
- Patient Wait Time for Imaging from time chart put in bin to end of test
- \_\_\_\_\_
- Amount of testing done in a period of time
- \_\_\_\_\_
- 
- Overtime

# Improve Imaging Scheduling



Align slot durations to testing type



Assign personnel to review scheduled tests & ensure consistency with physician plan



Identify session max for testing/imaging

# Communication

## Faculty to Photographer

- Diagnosis
- Draw - the area of interest
- Disposition
  - Where does patient go next

## Avoid Verbal Orders

PATIENT ROUTING FORM (FOR IN-OFFICE USE ONLY)

**DIAGNOSES**  
**DRAW**

EXTERNAL PHOTOGRAPHY: Full face w/a smile Profile w/a smile Close Up w/a smile with Q-tip lid to limbus Gaze positions lids closed  
(RELAX BROW) w/o a smile w/o a smile w/o a smile pull lids out for ectropion upper/lower

3/4 Full-face Close-up frown OU Close up raised forehead OU From above / From Below  
OD OS OU

LIPVIEW

SLIT LAMP PHOTOGRAPHY: Conjunctiva: Sclera Cornea Iris Lens Retro-illumination Gonioscopy  
Fluorescein / Use of Green / Erythrosin / Rose Bengal

Lids: Upper Lower Punctum Upper/Lower Fornix Superior/Inferior

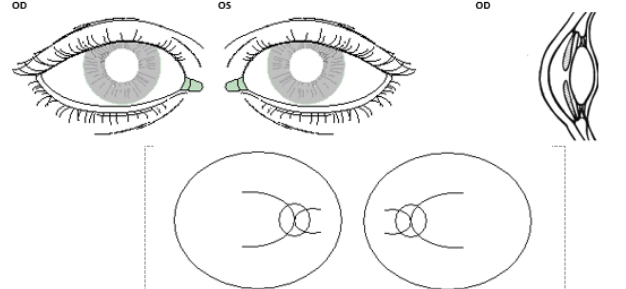
SPECULAR MICROSCOPY/ECC: OD OS

CONFOCAL: 40X OD OS

TOPOGRAPHY: OD OS

**PUBLICATION QUALITY**  
(circle if applicable)

OD OS OD OS



FUNDUS PHOTOGRAPHY: OD:  Disc  Macula  Fundus series  other  Montage  
FLOOR 6-OR 7 OS:  Disc  Macula  Fundus series  other  Montage

FLUORESCIN ANGIOGRAPHY: OD/OS:  Transit OD/OS:  Disc  Macula  Montage

HRA  OPTOS  CANON

OCT A: OD OS OU

OCT: OD OS OU FLOOR 6-OR 7

DISC: RNFL SCAN  
MACULA: POSTERIOR POLE, RADIAL SCAN  
LESION: LINE SCAN

multifocal ERG

BIOMETRY/ULTRASOUND: OD OS  A Scan  B Scan  A/B Scan  UBM

HVF  30-2 FAST  30-2 STD  24-2 FAST  24-2STD  10-2RED/WHT  Ptosis: 36-2 WITH/WITHOUT TAPE

**DISPOSITION (circle):**  
Doctor  
Check out  
Tech  
Surgery Scheduler  
Minor/Laser

# Increase Photography Capacity

- Before intervention: 1 full-time photographer & 1 assisting at peak hours
- After intervention: 2 full-time photographers & 3<sup>rd</sup> photographer assisting at peak times
- Shift modifications to meet imaging demands
- No FTEs were added to the budget



# Cross-training Staff

Available technicians  
perform short tests

- OCTs
- External Photos



# Equipment & Space

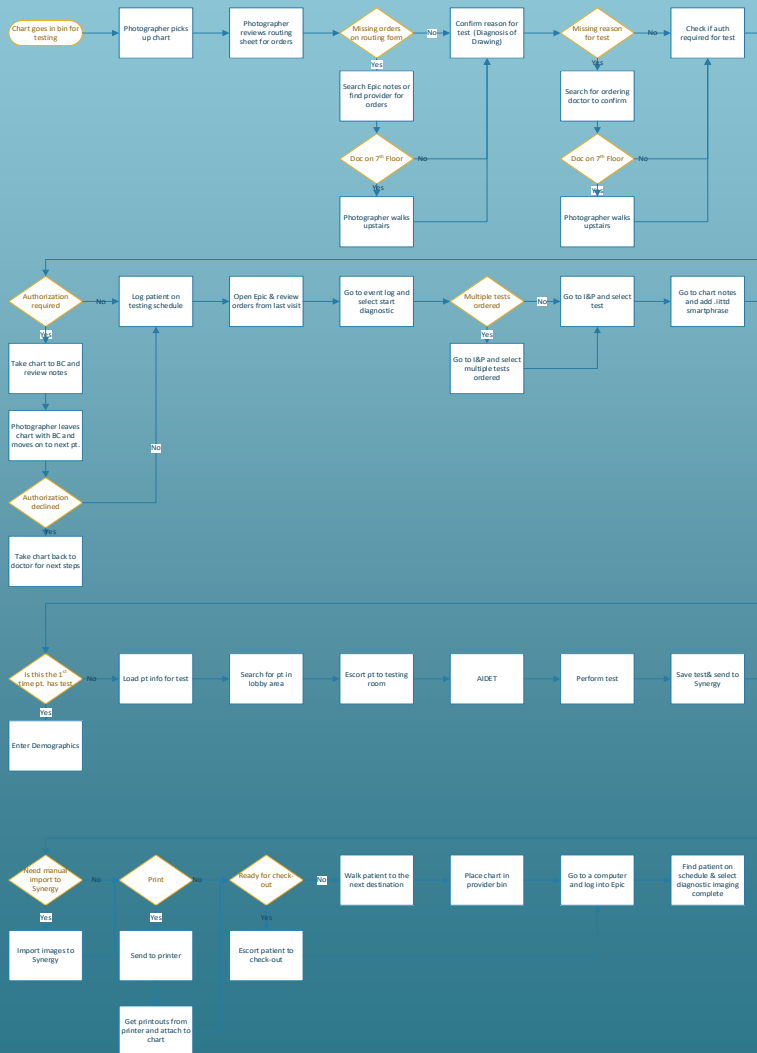
- New OCT & OCT-A funded by grant
- Retrofit exam room with blue wall for external photos – thus expanding space for imaging



# Results

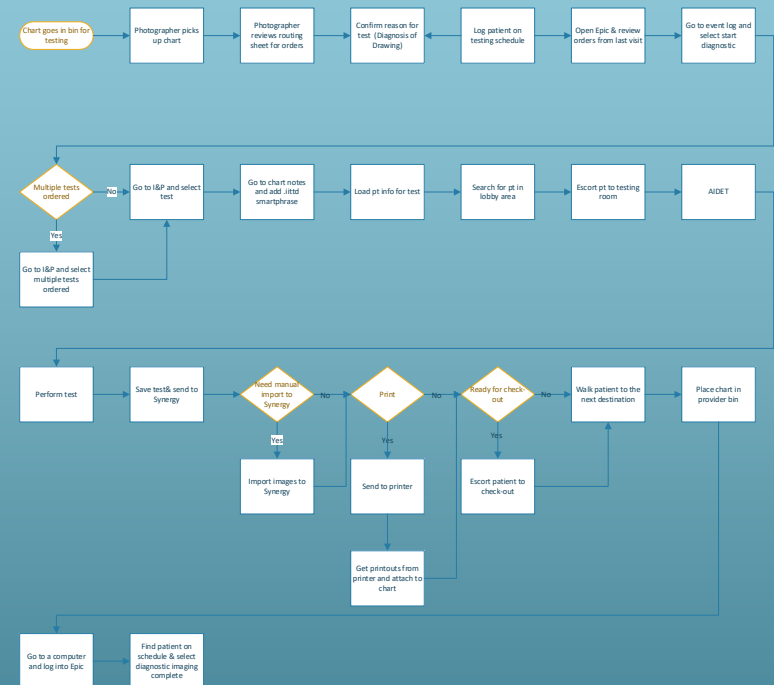
# Before Intervention

## 44 Steps

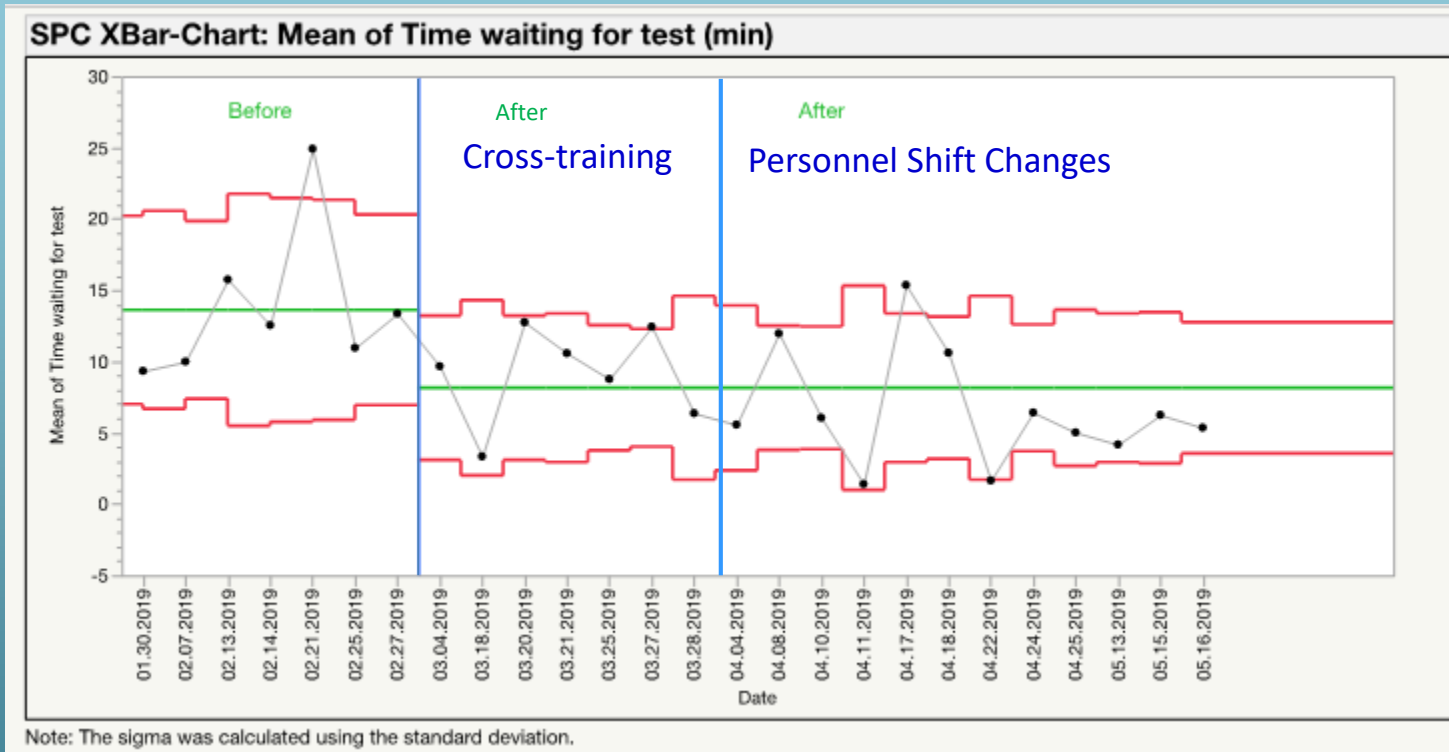


# After Intervention

## 28 Steps



# Patient Wait Time for Imaging



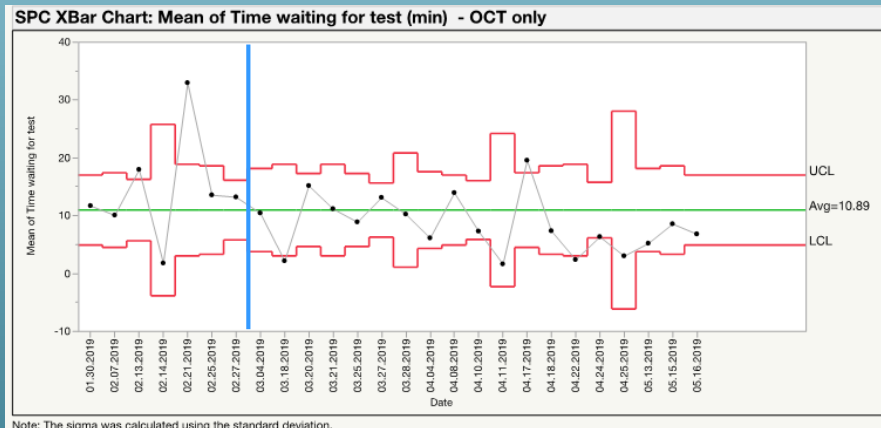
## Phase Limits

Phase	LCL	Avg	UCL
Before	.	13.6	.
After	.	8.1	.

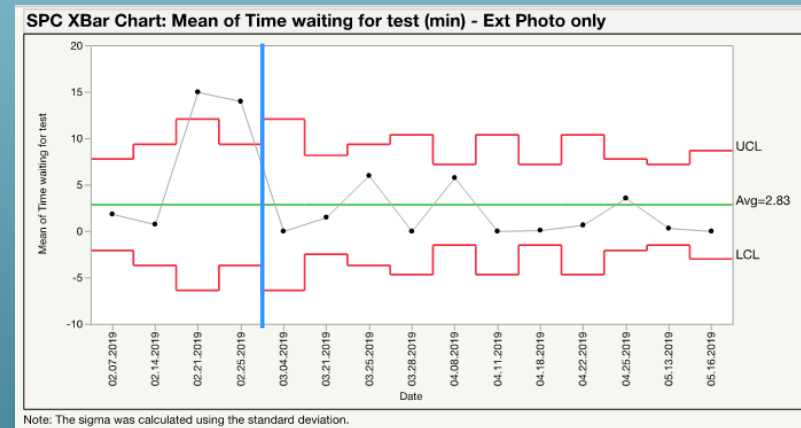
**40% DECREASE**

# Wait Time for Short Tests Before & After Cross-training Techs

## OCT



## External Photos



## Decreased variation in wait times

# Results

AIM: To decrease the average time waiting for Ophthalmic Imaging from 13.6 minutes to 10 minutes by June 2019

## OUTCOMES

- Decreased wait time to 8 minutes, a 40% reduction and falling
- Decreased clinic cycle time for imaging patients by 18%

# Patient Experience

## Real-Time Analysis

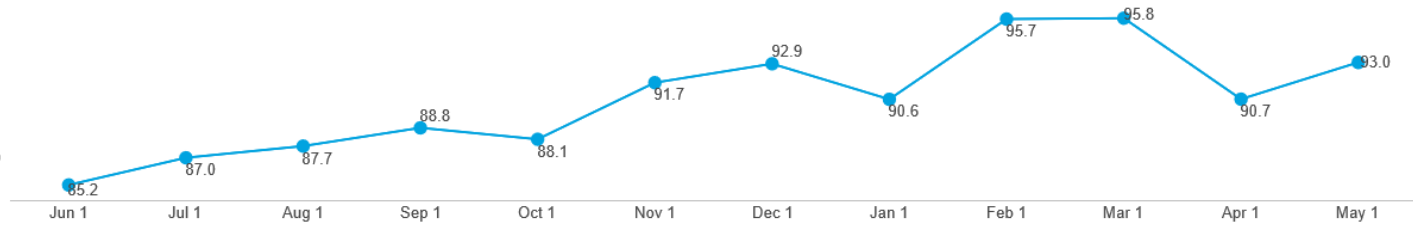
Subscribe

Export

May 31, 2018 - May 31, 2019

WOULD RECOMMEND

90.6  
(n=3,214)



Medical Practice 90.6

3,214

Patient Score

n-size



# Return on Investment

Increase patient volumes due to improved through-put for testing

- Anticipate an additional 5 patients per session at an average reimbursement of \$137/visit = \$685
- \$685/session at 322 sessions annually = Gross Collections of \$220,570, which equals Net Collections of **\$172,045**

# No New Direct Expenses

- New OCT Machines were purchased by Biggs Alzheimer Institute and placed in MARC Clinic (\$0 out of pocket for Ophthalmology – valued at \$156,000)
- No additional FTE were hired for Photographer duties (reassigned current staff)

# Lessons Learned

- Communication is Key
  - Providers communicate Scheduling needs
  - Personnel obtain Preauthorization
  - Standardized protocols with Standing Orders
- Cross-training decreases Wait Times for short tests
- Match personnel assignments to clinic demand

# Next Steps – The Whole Clinic

- Incorporate other providers into Lean Processes
- Evaluate Total Clinic Cycle Time
- Identify other Bottle-necks: Lines at Check-In
  - Check-In for multiple providers in parallel vs vertical check-in processes
  - Kiosk registration coming to Ophthalmology
    - Scans insurance card
    - Decreases manual entry errors
- Incorporate Provider specific team-based care (PODS)
- Template Optimization
- Periodic Imaging Wait Time Re-Analysis

# OPHTHALMOLOGY

