Welcome to TriHealth

HIMSS
Nicholas E. Davies
Award of Excellence
Case Studies
August 1, 2018

TriHealth At A Glance

- Four acute-care hospitals with 900 adult-staffed beds

- One short-stay surgical hospital

- Three free-standing outpatient surgery centers

- Over 140 outpatient service locations

- Over 150 physician practice locations

- Over 850 employed physicians

- Over 1,800 physicians on medical staff

- Over 12,000 employees

TriHealth Awards for Clinical Quality, Technical Excellence and Employee Engagement

Healthcare Information and Management System Society (HIMSS) Analytics Electronic Medical Record (EHR) Adoption Model Stage 7 **Awarded to TriHealth July 2014**

TriHealth successfully **recertified** as HIMSS Stage 7 in **December 2017**

TriHealth Surgical Optimization Center(TSOC)

Presenters:
Julie Sheedy, DNP, ICCM, RN, TSOC
Nurse Administrator
Lindsey Satterfield, Lead Application
Engineer
Patrick Haney, Lead Applications

What Is Perioperative Surgical Home?

- Patient centered, team based model of care that guides the patient from the decision of the need for surgery through 90 days post discharge

- Provides a care pathway for the patient with clinical processes and protocols throughout the episode of care

- Aligns with the triple aim to reduce cost and clinical variability while

Surgery Decision

Optimization

Pre-op

Surgical Event

Acute Care

Post-Discharge

TriHealth
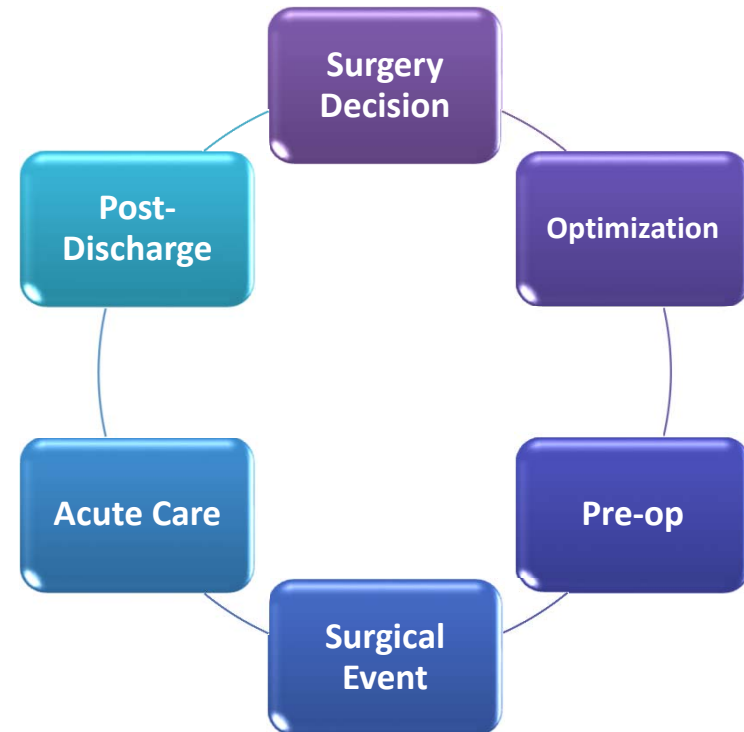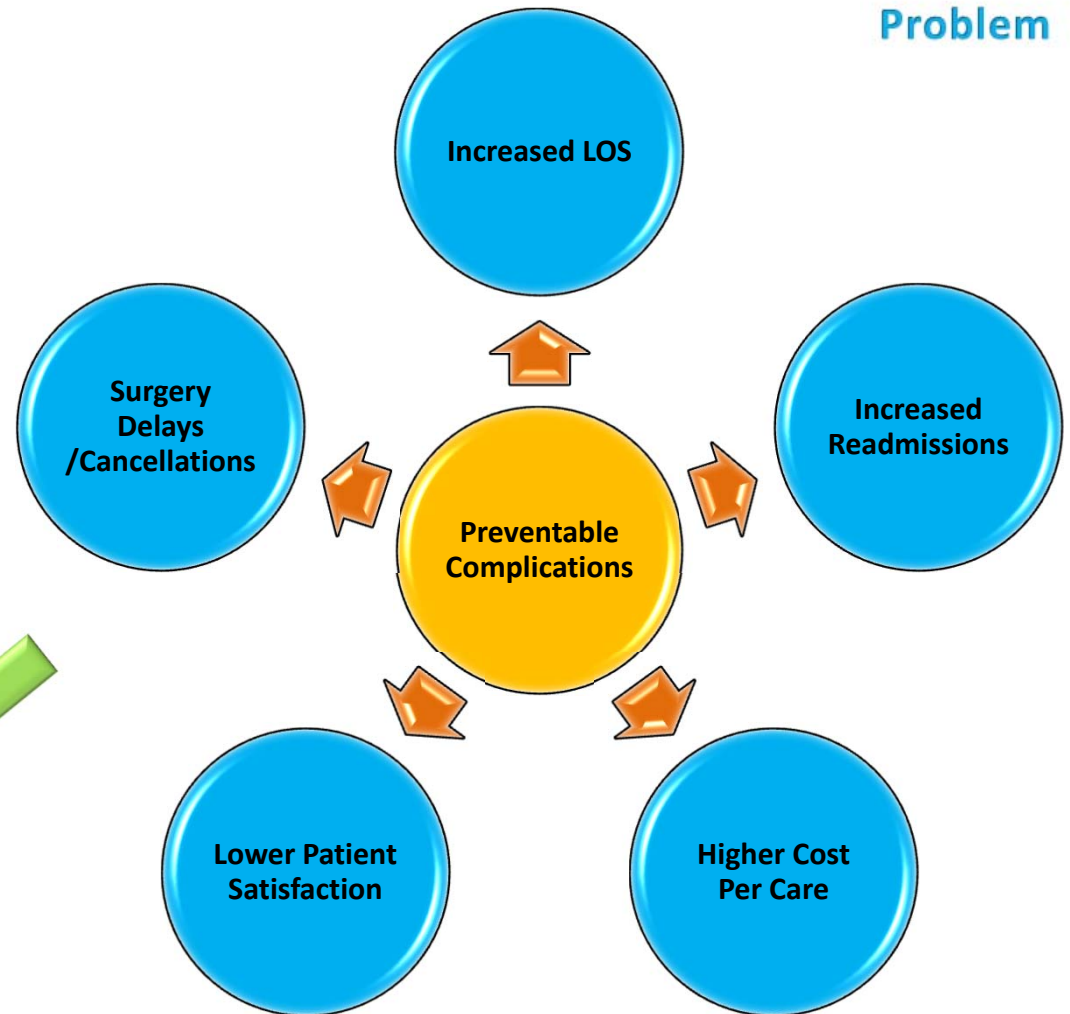
Local Problem

Patient outcomes were being **impacted** due to:

- Clinical variation
- Lack of coordinated care
- Patient disconnected from primary care provider

Causing:

- Increased costs
-

Increased LOS

Surgery Delays /Cancellations

Increased Readmissions

Preventable Complications

Lower Patient Satisfaction

Higher Cost Per Care

PERIOPERATIVE SURGICAL HOME™
Learning Collaborative 2020

TriHealth

Solution Selection Process

Design

National model for PSH Learning Collaborative

TriHealth chose to participate in the National Perioperative Learning Collaborative and pilot a perioperative surgical home program.

Colorectal as the Preferred Service Line

- Manageable volume (~300 patients)
- Cohesive and collaborating group of physicians and team members
- Looking for an engaged service line that would allow us to stand up a successful model that could be extended and repeated across the enterprise.
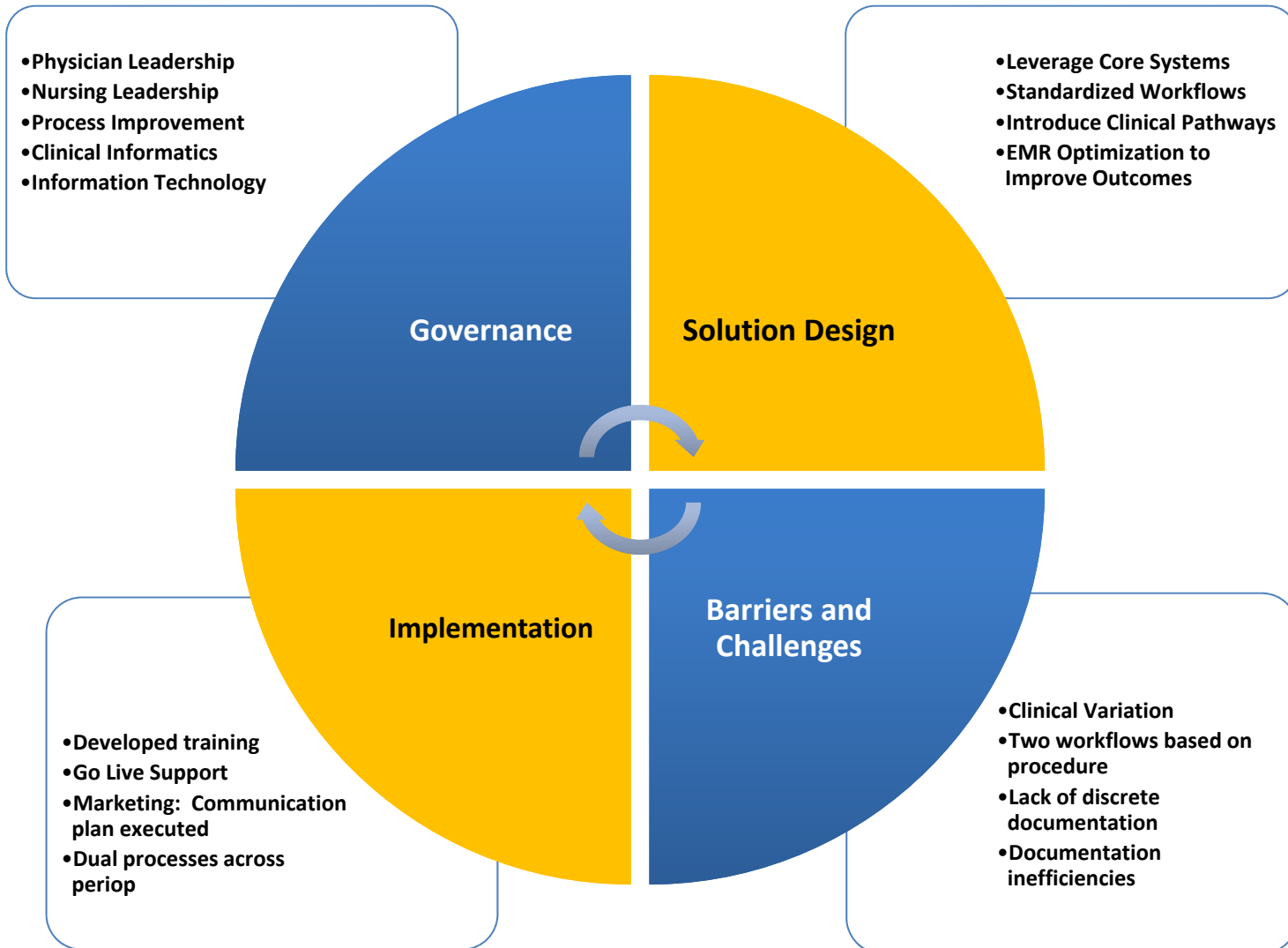
Where We Started

	Mar 2016 – Feb 2017
Average Length of Stay	8.2 Days
Surgical Site Infections	21
Delayed Cases	9
% Readmission	14.00%
Average Cost Per Case	$11,693
Overall Patient Experience (Top Box)	72.50%

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Workflow and Solution Design

Design

- Physician Leadership
- Nursing Leadership
- Process Improvement
- Clinical Informatics
- Information Technology

- Leverage Core Systems
- Standardized Workflows
- Introduce Clinical Pathways
- EMR Optimization to Improve Outcomes

Governance

Solution Design

Implementation

Barriers and Challenges

- Developed training
- Go Live Support
- Marketing: Communication plan executed
- Dual processes across periop

- Clinical Variation
- Two workflows based on procedure
- Lack of discrete documentation
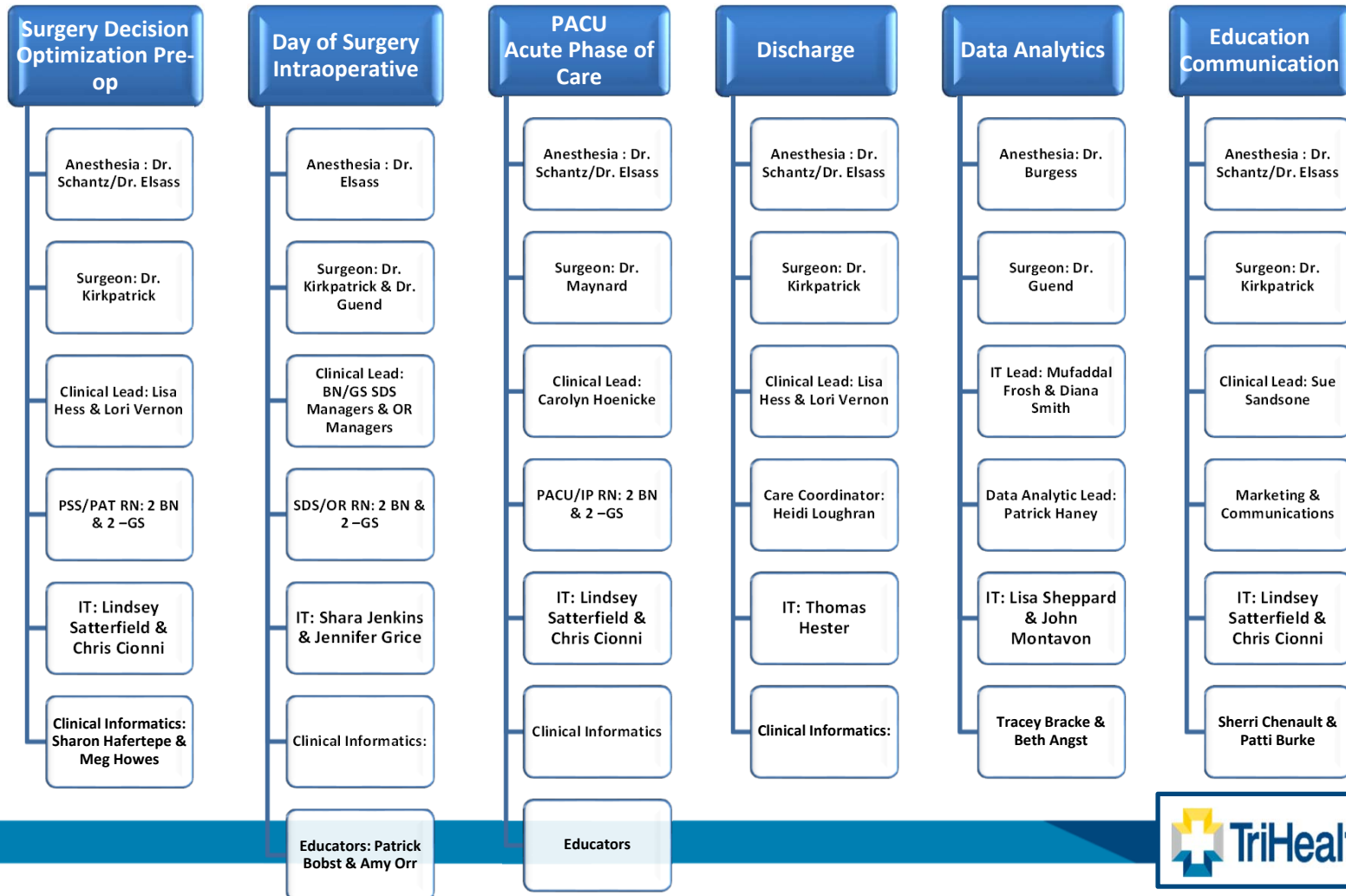- Documentation inefficiencies
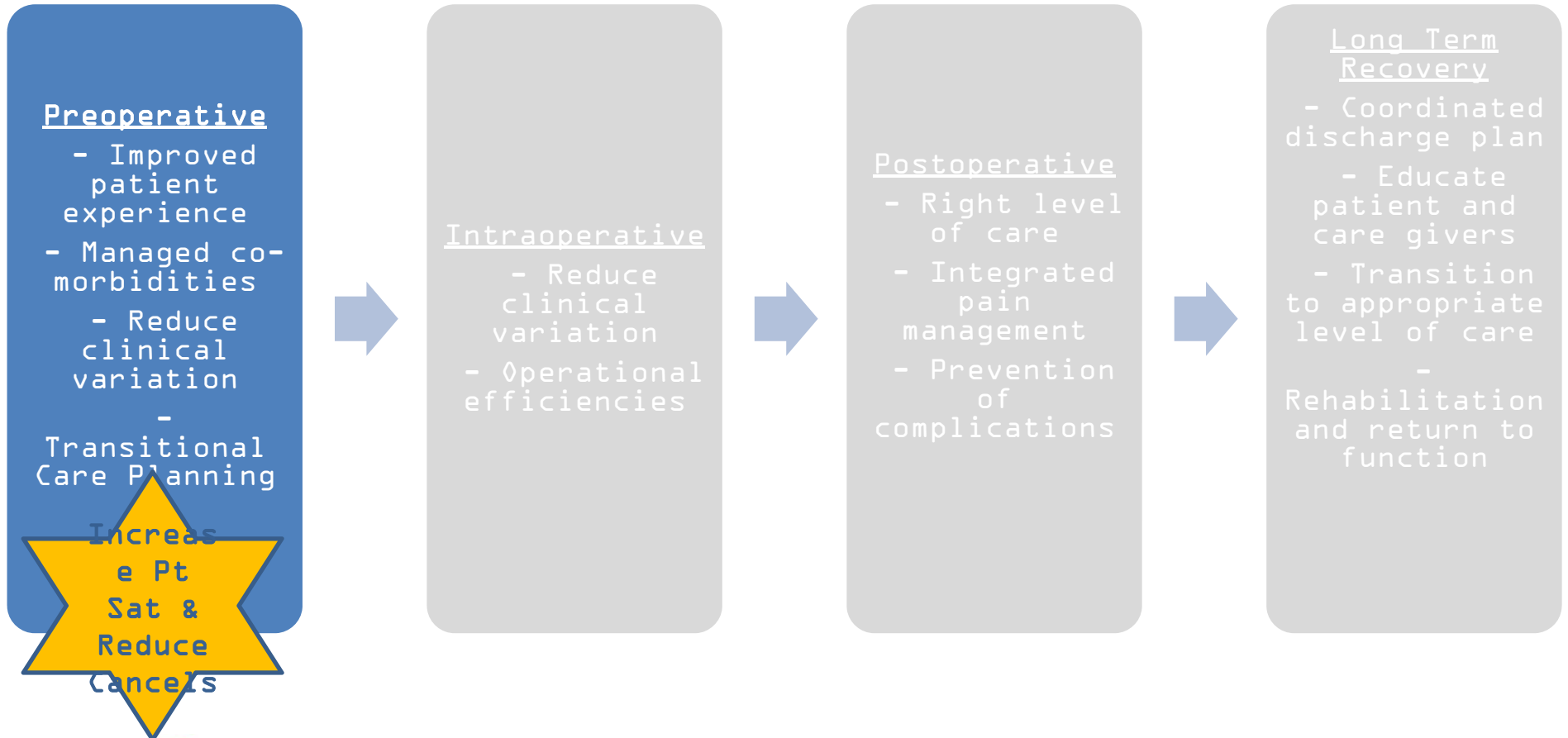
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Governance and Clinical Decision Making

Design

PSH Core Group
Dr. Matt Schantz, Dr. Elsass, Dr. Kirkpatrick, Dr. Guend, Mary Pat Gilligan, Julie Sheedy, Diana Smith, Judie Conley
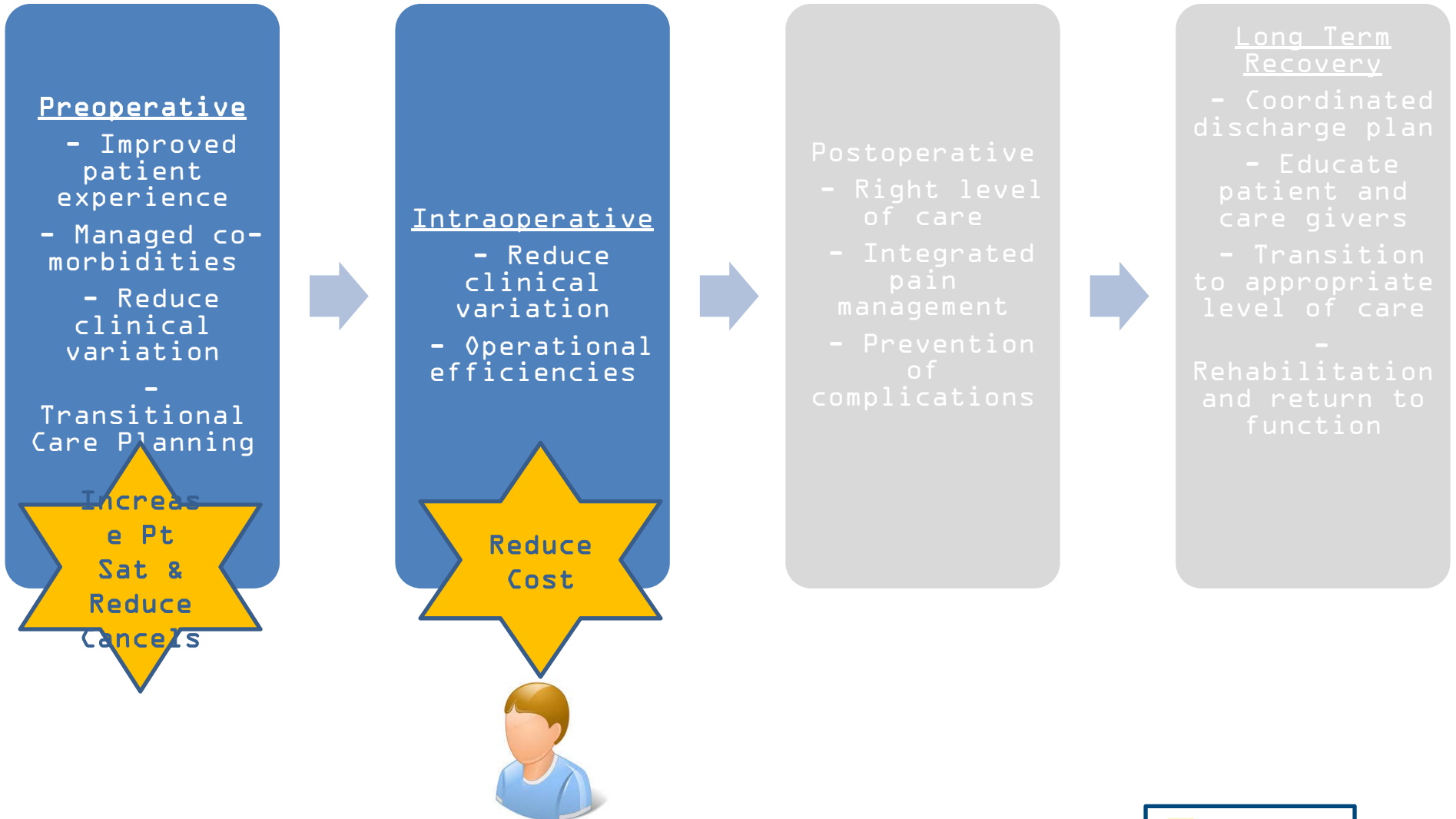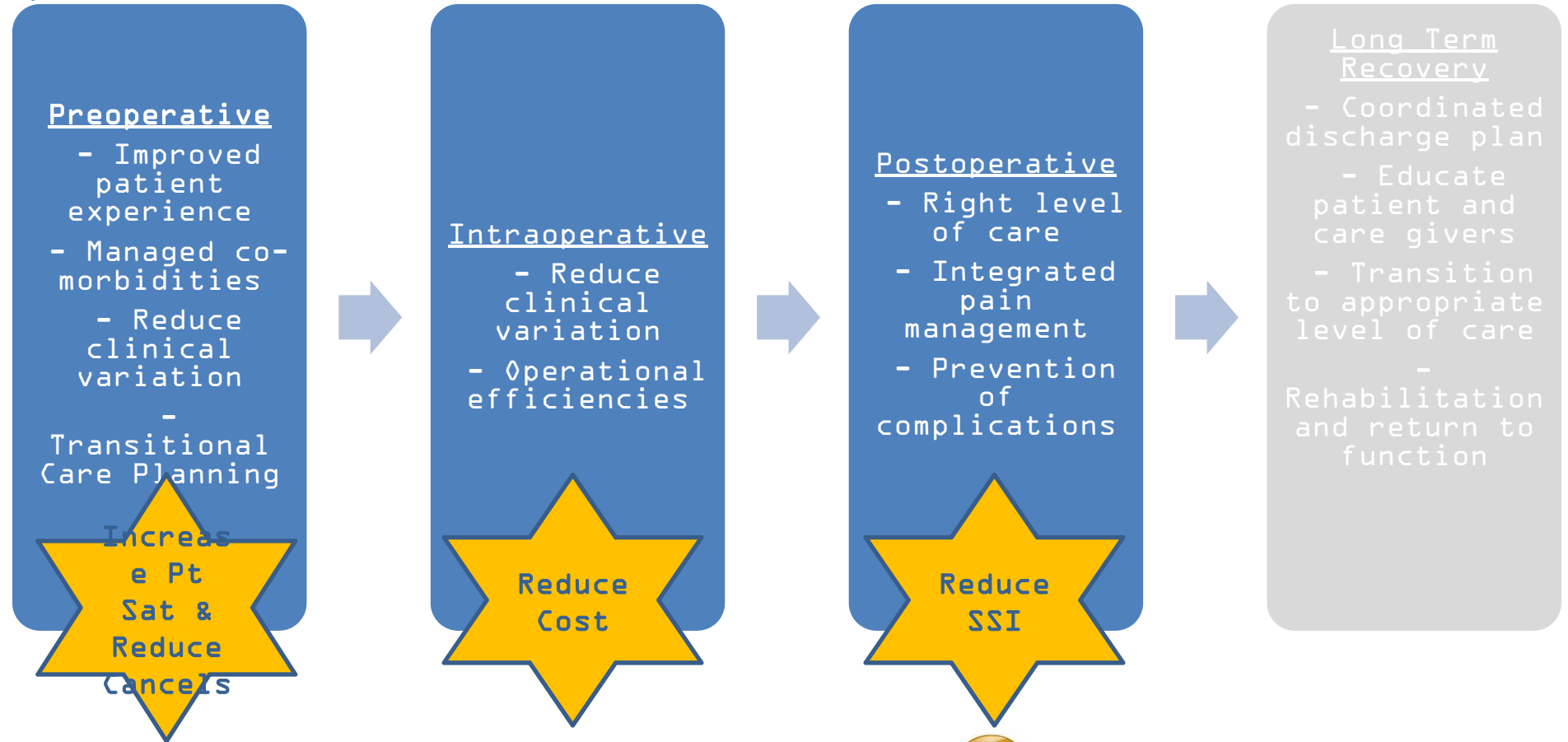
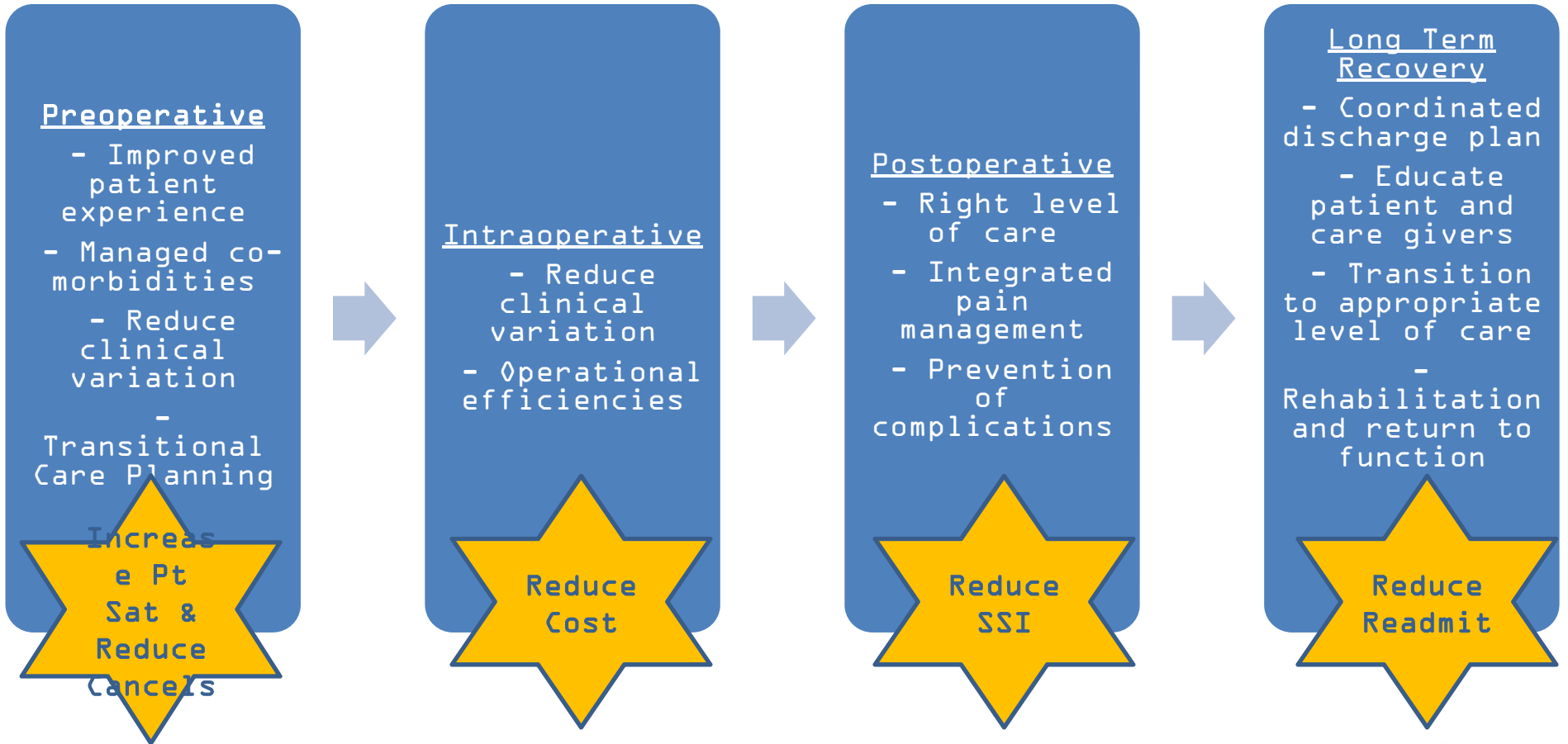| Surgery Decision Optimization Pre-op	Day of Surgery Intraoperative	PACU Acute Phase of Care	Discharge	Data Analytics	Education Communication
Anesthesia : Dr. Schantz/Dr. Elsass	Anesthesia : Dr. Elsass	Anesthesia : Dr. Schantz/Dr. Elsass	Anesthesia : Dr. Schantz/Dr. Elsass	Anesthesia: Dr. Burgess	Anesthesia : Dr. Schantz/Dr. Elsass
Surgeon: Dr. Kirkpatrick	Surgeon: Dr. Kirkpatrick & Dr. Guend	Surgeon: Dr. Maynard	Surgeon: Dr. Kirkpatrick	Surgeon: Dr. Guend	Surgeon: Dr. Kirkpatrick
Clinical Lead: Lisa Hess & Lori Vernon	Clinical Lead: BN/GS SDS Managers & OR Managers	Clinical Lead: Carolyn Hoenicke	Clinical Lead: Lisa Hess & Lori Vernon	IT Lead: Mufaddal Frosh & Diana Smith	Clinical Lead: Sue Sandsone
PSS/PAT RN: 2 BN & 2 –GS	SDS/OR RN: 2 BN & 2 –GS	PACU/IP RN: 2 BN & 2 –GS	Care Coordinator: Heidi Loughran	Data Analytic Lead: Patrick Haney	Marketing & Communications
IT: Lindsey Satterfield & Chris Cionni	IT: Shara Jenkins & Jennifer Grice	IT: Lindsey Satterfield & Chris Cionni	IT: Thomas Hester	IT: Lisa Sheppard & John Montavon	IT: Lindsey Satterfield & Chris Cionni
Clinical Informatics: Sharon Hafertepe & Meg Howes	Clinical Informatics:	Clinical Informatics	Clinical Informatics:	Tracey Bracke & Beth Angst	Sherri Chenault & Patti Burke
	Educators: Patrick Bobst & Amy Orr	Educators			

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Intended Outcomes

Preoperative
- Improved patient experience
- Managed co-morbidities
- Reduce clinical variation
- Transitional Care Planning

Increase Pt Sat & Reduce Cancels

Intraoperative
- Reduce clinical variation
- Operational efficiencies

Postoperative
- Right level of care
- Integrated pain management
- Prevention of complications

Long Term Recovery
- Coordinated discharge plan
- Educate patient and care givers
- Transition to appropriate level of care
- Rehabilitation and return to function

TriHealth

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Postoperative

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- Prevention of complications

Reduce SSI

Long Term Recovery

- Coordinated discharge plan
- Educate patient and care givers
- Transition to appropriate level of care
- Rehabilitation and return to function

Reduce Readmit

TriHealth

Clinical Workflow

Office Appointment → Surgeon decision for surgery → Surgeon places Referral to TSOC

Surgery Scheduler at office schedules case

Referral goes to NN workque

NN completes chart review

Schedules TSOC phone visit or optimization visit

NN routes patient's chart to TSOC NP

Routed to In Basket

TSOC NP initates Epic Pathway/completes chart review to determine criteria for clearance

NN completes phone assessment

Patient arrives for visit

Ostomy RN appointment if appropriate at TSOC Visit

TSOC NN completes risk assessments (NSQIP, Frailty, OSA, Anemia, Nutrition, Glucose). Provides education on ERP, smoking cessation, and other risk factors. Provides TriHealth Bag (impact, incentive spirometer, sage wipes). Complete optimization outcomes.

TSOC NP assess patient, enters any additional orders needed based on risk assessments. Completes H&P if no PCP.

NN or NP Sends letter via Epic In Basket or Fax to PCP & Surgeon. Letter includes pathway optimization, H&P, referrals for clearance, timeline and any additional findings.

NN or NP Final Review

Patient cleared to arrive DOS NN completes 6-day out call via Master Daily Schedule. Transfers Epic Pathway onto Surgical/ Hospital Admission

Optimization not complete NP work with Surgeon/Anesthesia/ PCP to determine next steps

Clinical Workflow

IT Tools

```
Patient arrives          Pre-op
For Surgery         →    RN starts DOS
                         pathway step
                              ↓
                         Intra-op    →   PACU           →   Surgeon/Resident
                              ↓            Rn starts PACU      enters post-op
                                           pathway step        orders via
                         ICU                                   pathway
                         Pathway                                  ↓
                         Discontinued                         Patient
                                                              transferred to
                                                              floor
                                                                  ↓
                                                              Inpatient
                                                              RN starts POD1
                                                              pathway step
                                                                  ↓
                                                              Inpatient
                                                              RN starts POD2
                                                              pathway step
                                                                  ↓
                                                              Inpatient
                                                              RN starts POD3
                                                              pathway step
                                                                  ↓
```

Discharge Day RN starts DC pathway step → Warm handoff from IP Care Guide to DC Care Guide → DC Care Guide reaches out to patient within 72 hours, 30 days and 90 days → DC Care Guide sends letter on day 45 → DC Care Guide sends letter on 90 day post discharge to Patient, Surgeon, and PCP → Removes FYI from patient header

- Completes Patient Engagement survey
- Reviews DC Instructions
- Med-Rec review
- Appetite/fluids
- Psycho/social needs
- Ostomy assessment (if needed)
- Wound assessment
- Diabetes assessment
- Checks surgeon appt. as schedule
- PCP appt. within 14 days

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TSOC Inclusion

IT Tools

- TSOC Inclusion
- Patient Flagging
- BPAs
- Clinical Workflow Optimization
- Clinical Pathway
- Pathway Review
- Physician Workflow Optimization
- Documentation
- Reporting Tools

Flagging Patient As TSOC

IT Tools

TSOC Inclusion

Patient Flagging

BPAs

Clinical Workflow Optimization

Clinical Pathway

Pathway Review

Physician Workflow Optimization

Documentation

Reporting Tools

Best Practice Alerts

IT Tools

Integration of passive and end user facing BPAs

Diabetes Ref/Con orders - TSOC Diabetes Check

Time taken: 1614   7/23/2018

Values By   + Create Note

ⅴ TSOC Diabetes

TSOC Diabetes   Trigger Referral/Consult BPA

BestPractice Advisory - Tom, Knee

(!) Add TSOC Diabetes Referral and Consult orders

| Order | Do Not Order | 🏠 AMB Referral to Diabetic Education |
| Order | Do Not Order | ✈ Inpatient Consult to Diabetic Advisory Team |

✔ Accept

Route Encounter – Send TSOC Encounter to Provider

Time taken: 1616   7/23/2018   Show: ☑ All Choices

Values By   + Create Note

ⅴ Route Encounter

Route Chart   📄 Route to Encounter Provider

BestPractice Advisory - Tom, Knee

(!) TSOC Chart Routing to Nurse Practitioner Pool

| Send | Do Not Send | ✉ Send this advisory via In Basket |

No contacts

In Basket   ✉ New Msg ▾   Patient Msg   🔄 Refresh

↑ My Messages   🏠 > TSOC 0 unread, 25 total

Canceled Ord (1)   Status   Visit

CC'd Charts (1)   Pend   02/14/2018
?   Encounter Type: Office Visit
Charts (39)   Sent Date: 02/12/18

My Open Encounters (Pend   02/14/2018
Overdue Results (142)   ?   Encounter Type: Office Visit
                        Sent Date: 02/13/18
Referral Message
                        Pend   02/15/2018
↑ Results (1)   ?   Encounter Type: Office Visit
                        Sent Date: 02/15/18
TSOC
                        Read   01/30/2018
                ?   Encounter Type: Office Visit

AMB REFERRAL TO TSOC (PSH)

Routine, Internal referral, Qty-1

| Department: | BN PRE-SUI 🔍 | BN PRE-SURGICAL SVCS | GS PRE SURGICAL SVCS | BTLR PRE-SURGICAL SVCS |

| Urgency of Procedure: | 1 Week | 2 Weeks | 4 Weeks | Greater than 4 Weeks | |

Procedure: Laparoscopic APR with stoma [45395]

Does the patient need an   Yes   No   Comments
Ostomy Consult?

Temporary or Permanent?   Temporary   Permanent   Unsure

Type of Ostomy: Ileostomy   Colostomy   Loop   End   Abd quadrant Location   Other: spe

Planned ICU admission?   Yes   No

Reference Links: 1. TriHealth Surgical Optimization Center link

■ Nursing Communication: Nursing to discontinue duplicate orders or preoperative orders
Routine, Clinic Performed, Expected: 8/2/2018, Expires: 7/23/2019, Qty-1, Nursing to discontinue

☑ Pre-Op Referral to Wound Ostomy Nurse Details ■
🛑 Expected: 8/2/2018, Expires: 7/23/2019, Internal referral, Routine, Specialty Services Required

▼ Other Medications: Colon Surgery
☑ Day Before Surgery Pre-Op Antibiotic Outpatient Orders Panel

| TSOC Inclusion |
| Patient Flagging |
| **BPAs** |
| Clinical Workflow Optimization |
| Clinical Pathway |
| Pathway Review |
| Physician Workflow Optimization |
| Documentation |
| Reporting Tools |

TriHealth

Clinician Workflow Optimization

Clinical Pathways

- **Pre-op Surgeon and Anesthesia Orders**
- **Post-op Surgeon Orders**
- **Education**
- **Flowsheet Documentation**
- **Outcomes**

IT Tools

- TSOC Inclusion
- Patient Flagging
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- Documentation
- Reporting Tools

Pathway Review

IT Tools

Pathway Review

Document Outcomes Manage Pathways ✔ Mark as Reviewed ✖ Discontinue Pathway Release Orders

TSOC Colorectal Pathway

Optimization Phase	Six-Day Out Call Phase (sta...	Pre-op (Day of Surgery)	PACU	Post-op Day 0
Past	Past	Current	Future	
Today at 0945	Today at 1034	Today at 1633	~Today at 2033	
<1 Hour	5 Hours	4 Hours	4 Hours	

⌃ Outcomes

⌃ Select from the following:

✔ Enhanced Recovery Protocol Initiated - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

✔ Pre-Surgical Anemia Screening Initiated - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

✔ OSA Identified and Protocol Initiated - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

✔ OSA Morbid Obesity Identified and Anesthesia Order Set Initiated - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

✔ Frailty Identified and Corresponding Protocol Initiated - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

✔ Referral To Care Guide For Discharge Planning - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

✔ Education Provided For Smoking Cessation - Last documented as "Met" on 07/23/18 1634 by Tsoc, Np, CNP.

⌃ General (P.A.T. Orders)

⌃ TSOC Pre-admission Testing Labs

🏠 BAMP (NA,K,CL,CO2,GLU,BUN,CREAT,CA) - Routine, TriHealth, Future, Expected: 8/2/2018, Expires: 7/23/2019, Qty-1 TSOC patient? Yes(TSOC) For all patients taking diuretics or digitalis preparations or diabetic if not drawn in past 30 days. BN, BSC ,HSC, and Butler - Not for MAC cases. If blood glucose is greater than 200

Pathways Summary

SnapShot with Recent Visits

Pathways Summary

⌃ Active Pathways

(Current Visit)

Pathway	Current Step	Progress
TSOC Colorectal Pathway	Pre-op (Day of Surgery)	No Color

Step Started: 07/15/18 0111
Expected End: 07/15/18 0511
Initiated on 01/09/18 1048 by Tsoc, Np, CNP

⌃ Discontinued Pathways

Pathway	Initiated On
TSOC Colorectal Pathway	01/02/18 1034

Initiated By: Tsoc, Np, CNP
Discontinued On: 01/02/18 1643
Discontinued By: Tsoc, Np, CNP
Reason: Patient Discharged

| TSOC Colorectal Pathway | 01/02/18 1826 |

Initiated By: Tsoc, Np, CNP
Discontinued On: 01/09/18 1048
Discontinued By: Tsoc, Np, CNP
Reason: Patient Discharged

⌃ Active Pathway Outcomes

Expand

TSOC Colorectal Pathway

Six-Day Out Call Phase (start this step from MDS/hospital encounter) 01/12/18 1130 - 07/15/18 0111

Anemia criteria met and patient seen in Anemia Clinic
Blood glucose control path and applicable optimization efforts were initiated

Pre-op (Day of Surgery) - Current Step 07/15/18 0111 - 07/15/18 0511
ERP fluid and supplemental replacement completed
Refrained from smoking
Sage wipes completed as instructed
Multi-modality pre-op pain medications given
Bowel prep and oral antibiotics completed
Treatment completed for positive MRSA/MSSA colonization
DVT prophylaxis pre-op
DOS Cancelation not indicated

PACU Not Started
Outcomes have not yet been applied.

Centralized documentation

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Physician Workflow Optimization

Clinical Pathway automatically appears in Med Rec

IT Tools

- TSOC Inclusion
- Patient Flagging
- BPAs
- Clinical Workflow Optimization
- Clinical Pathway
- Pathway Review
- **Physician Workflow Optimization**
- Documentation
- Reporting Tools

TriHealth

Post-Discharge Documentation

IT Tools

Reportable patient satisfaction surveys

- TSOC Inclusion
- Patient Flagging
- BPAs
- Clinical Workflow Optimization
- Clinical Pathway
- Pathway Review
- Physician Workflow Optimization
- **Documentation**
- Reporting Tools

TriHealth

TSOC Dashboard Reports

Easy accessibility to real time analytics

IT Tools

- TSOC Inclusion
- Patient Flagging
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- Physician Workflow Optimization
- Documentation
- Reporting Tools

Quality Outcomes

Patient Satisfacation Survey

Response rate: 84%
218/260 returned survey

Legend: 2016-2017, 2017-2018

Compliance with IT Tools:
100% of Colo-rectal patients
followed the TSOC clinical pathway

Total volume: 260 cases

Increase Pt Sat & Reduce Cancels

Value
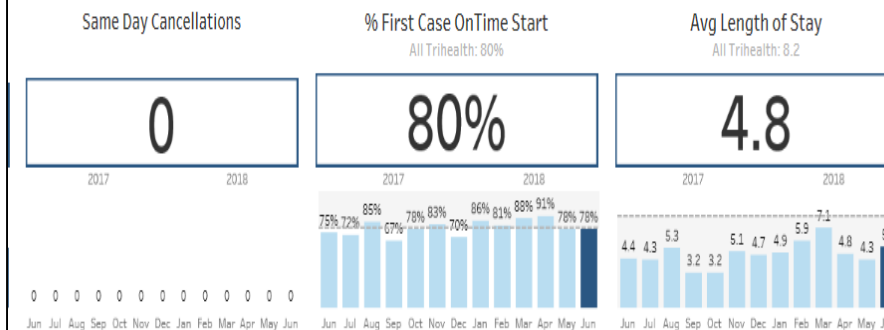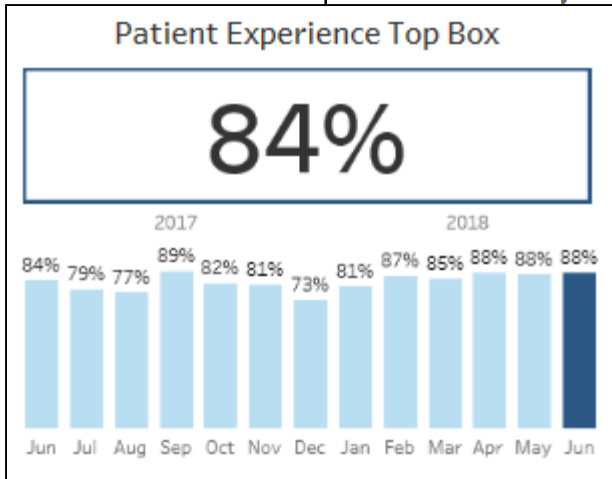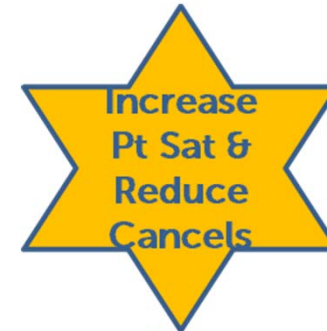
Increased Overall Patient Satisfaction 76% to 83%

No Case Cancellations
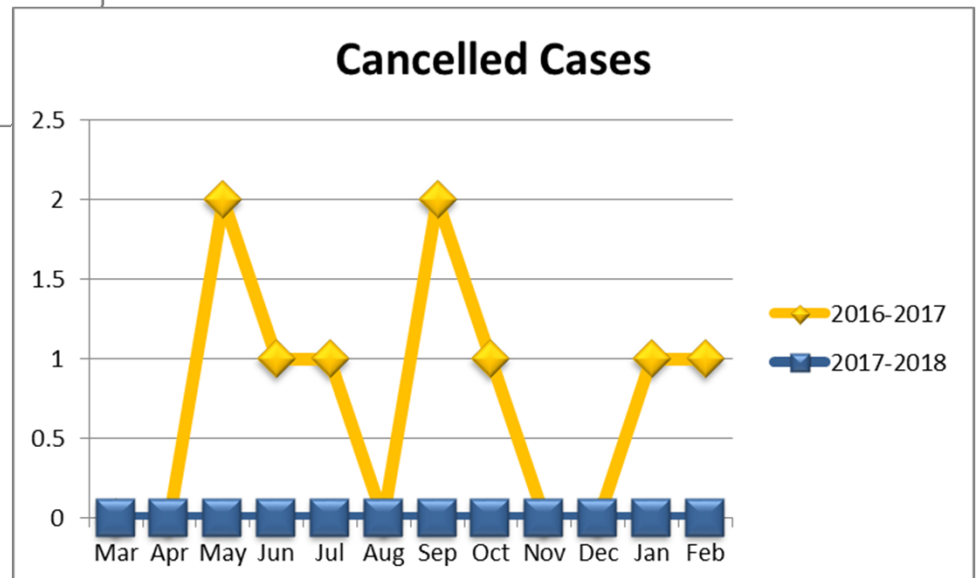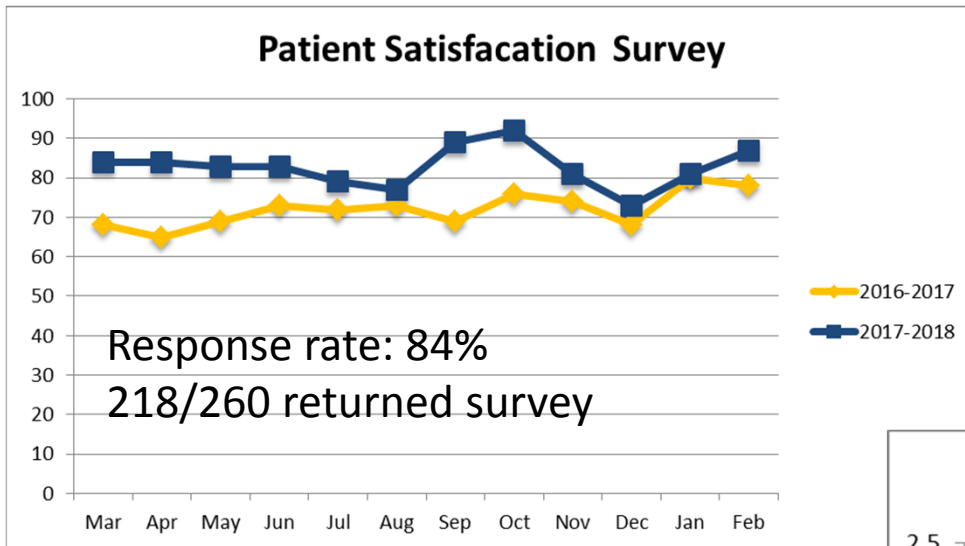
Cancelled Cases

Legend: 2016-2017, 2017-2018

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Quality Outcomes

Value

Reduce SSI

Length of Stay

(Line chart showing Length of Stay from Mar to Feb, y-axis 0–10)
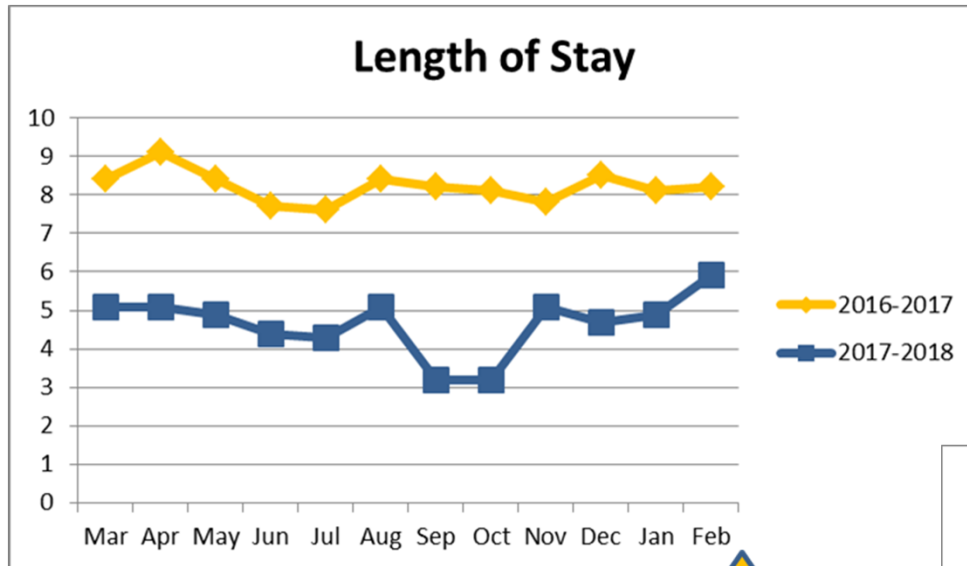- 2016-2017 (yellow line)
- 2017-2018 (blue line)

67% overall reduction in SSI
Source: HDM – Clinical Quality Dept

Compliance with IT Tools:

100% of Colo-rectal patients followed the TSOC clinical pathway

Total volume: 260 cases

Reduce Cost

5.8% overall reduction in ALOS
Source: TH TSOC Dashboard & Decision Support Financial Data Warehouse

Surgical Site Infections

(Line chart showing Surgical Site Infections from Mar to Feb, y-axis 0–5)
- 2016-2017 (yellow line)
- 2017-2018 (blue line)

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Quality Outcomes

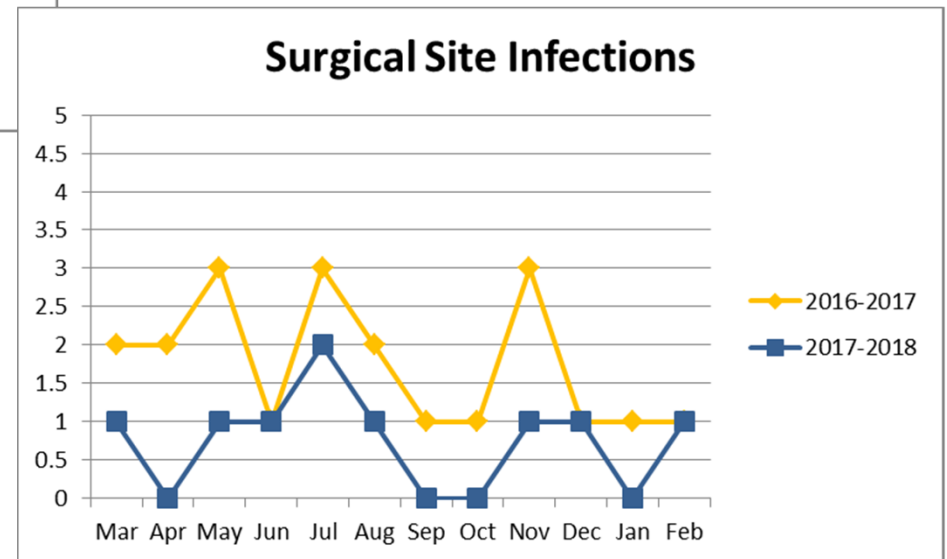**Compliance with IT Tools**:
100% of Colo-rectal patients followed
the TSOC clinical pathway

Total volume: 260 cases

	Case Volume	% Readmit	Cost/Readmit	Total cost
Pre-Pilot	248	14	$ 13,347.00	$ 453,798.00
Post- Pilot	260	8.2	$ 13,368.00	$ 280,728.00
Cost Savings				$ 173,070.00

*Pre-Pilot: Mar 2016 - Feb 2017
*Post- Pilot: Mar 2017 - Feb 2018
**TH average cost per readmission/all readmissions SOURCE: TH
Decision Support Financial Data Warehouse

Overall Project Outcomes

	2017	2018
Length of Stay	8.2	4.8
Surgical Site Infection	21	8
Delayed Cases	9	0
Readmission	14%	8.2%
Patient Experience Survey	72.5%	83%
Financial (Average cost per patient)	$11,693	$10,586

Soft & Hard ROI for TSOC

Value

Reduced Readmission **$173,070**	**Reduced SSI Cost** **$14,365**
Reduced Cost Per Case **$287,820**	**Cost Avoidance for Canceled Cases$_1$** **$66,960**

Total ROI

$542,215

1 Alex Macario MD, MBA Journal of Clinical Anesthesia (2010) 22, 233–236
What does one minute of operating room time cost?
http://ether.stanford.edu/asc/documents/management2.pdf

TriHealth

Keys to Success

Engaged end users to do usability testing during pathway and workflow development.

Usability Testing

At TriHealth, there is a strong culture of partnership between all team members. The ability to work successfully in complex multi-disciplinary teams by valuing everyone's contribution is critical to the success our initiatives.

Culture of Partnership

Keys to Success

Information System is Seen as Part of the Care Team

Partnership with patients care team

At TriHealth, Information System is considered part of the care team. There is a close relationship between IT and Clinical Operations.

Patient care team, such as PCP and Endocrinologist are part of the pathway for each patient. This enhances the improved surgical experience because co-morbidities are as well managed as possible prior to surgery with these physician partners.

Lessons Learned

- Stay focused on your "why" and communicate it often to the project team as well as end users
- Establish a steering group to oversee the alignment of all work streams that include all disciplines affected.
- The level of process change is very high and complex. We opted for a pilot area where we had engaged physician champions to start. Be very thoughtful of the pilot group to increase success.
- Be thoughtful about keeping the scope tight and cohesive. It's easy to get off track and expand scope.
- Select strong operational team members who work well together
- Set clear ground rules to gain consensus is critical
- Regular meetings to identify progress, barriers and challenges but also to celebrate wins is critical
- Collaboration and team work… respect and appreciation for all perspectives.
- Delivering a product that makes sense for patients and clinical providers requires respect and open mind related to priorities and work that needs to be done.

TriHealth

What's Next

Expanding TSOC and Clinical Pathway

Additional service lines:

- o Ventral Hernias
- o Urologic Gynecology
- o Urology
- o Enterprise Clinical Variation Project (OB/Spine)

Future

- Increase patient engagement via MyChart questionnaires
- Improve patient experience through text-messaging
- Enhance data collection
- Integrate Clinical Pathways into the Discharge Care Guide's role
- Refine and expand implications in addressing patients at risk for readmission to the

TSOC Recognition

Nationally Recognized

by ASA as

Industry Leading
Innovator Award

Nationally Recognized |
ASPAN as

First Place Winners

Nationally Recognized by

Studer Group

What's Right in

Healthcare

TriHealth

Wrap Up

Problem
Clinical Variation

Population Health/Triple Aim

Cost Per Care

Patient Engagement ✓

Design
Leverage core systems

Clinical Pathways

Clinical end user involvement

Strong clinical governance ✓

IT Tools
Identify patient population

Clinical pathways

Standardized & discrete documentation

Best Practice Alerts

Reporting Dashboard ✓

Value
Reduced LOS

Reduced Readmissions

Reduced SSI

Reduced Cost per Case

Increased patient satisfaction ✓

serve
Our mission is to improve the health status of the people **we serve**.

excel
Excellence in quality, safety and service.

respect
Respect for all people, differences and spiritual heritage.

value
Value our time, treasures and talents through stewardship.

engage
Engage our people and community needs to improve health.