Enhanced Recovery After Surgery  
Kaiser Permanente NCAL Journey  
IHI Forum 2015

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Get Up, Get Moving, Get Better!

Session Objectives

- Explain the principles of Enhanced Recovery After Surgery and how they come together to improve patient care

- Describe an implementation strategy for testing, optimizing, spreading, and measuring change across a region
No Presenter Disclosures
Why Now?

So many initiatives, so little time…

Patient-Centered Care → Patient-Driven Care
An innovation from the ground up

What is ERAS?
Reducing Surgical Stress & Disruption to Baseline Physiology

Not Physiologic

NPO After Midnight
Bed rest/Non mobilization
Nausea/Vomiting
Post Operative Pain
Tubes/Drains
In land Salt Water Drowning
ERAS is…

Design: What did we do differently?
3.8 Million Members
21 Medical Centers
with approximately:
• 230,000 hospital discharges/year
• 215,000 surgeries/year
• 8,000 Physicians
• 12,500 Nurses

How we told the story
How we created the clinical pathways

- Multidisciplinary Subject Matter Expert (SME) Workgroup conducts extensive review of literature and internal operations

**SME Workgroup**
- Surgery
- Anesthesiology
- Pharmacy
- POM
- HBS
- PT
- Nursing
- Quality & Safety
- ED

How we tested, learned, and rolled out

**Site 1**
Local Planning/Prep (1 month)

**Site 2**

**Alpha Testing (~ 3mos)**
- Colorectal Only + Add Hip Fx Continue Colorectal
- Hip Fx Only + Add Colorectal Continue Hip Fx

Early Adopter sites who are independently testing & optimizing various parts of the pathways

To facilitate rapid testing & learning cycles, regional consultants will facilitate biweekly calls & monthly calls with early adopters

1 month check-in point to evaluate learnings & add 2nd pathway for alpha sites

6 months later: Regional Summit: 21 Med Ctrs
ERAS Summit ~ 400 participants from across NCAL

Scale & Spread (Regional Implementation)

Regional Summit (June 30) → Local Planning → 1st Pathway 6 weeks later → 2nd Pathway 6 weeks later
### How we created “Mentor” roles

<table>
<thead>
<tr>
<th>Mentor 1</th>
<th>Mentor 2</th>
<th>Mentor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT</td>
<td>FRE</td>
<td>FRS</td>
</tr>
<tr>
<td>RWC</td>
<td>ROS</td>
<td>OAK</td>
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<tr>
<td>SFO</td>
<td>SAC</td>
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<td>SRF</td>
<td>SLN</td>
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<td>SRO</td>
<td>SSC</td>
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<td>SSF</td>
<td>VAL</td>
<td>SJO</td>
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<tr>
<td>WCR</td>
<td>VAC</td>
<td>RCH</td>
</tr>
</tbody>
</table>

### How we empowered patients

**MY CALENDAR: RECOVER SAFELY AND QUICKLY**

Follow these steps before and after your colon surgery.

<table>
<thead>
<tr>
<th>PAIN MANAGEMENT</th>
<th>Night before surgery</th>
<th>Morning of surgery</th>
<th>First day after surgery</th>
<th>Second day after surgery</th>
<th>After discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Control</td>
<td>Choose a preferred pain killer</td>
<td>Consult doctor</td>
<td>Pain reliever by mouth</td>
<td>Pain reliever by mouth</td>
<td>Pain reliever by mouth</td>
</tr>
<tr>
<td>Oral Care</td>
<td>Brush and rinse teeth</td>
<td>Oral rinse</td>
<td>Brush and rinse teeth</td>
<td>Brush and rinse teeth</td>
<td>Brush and rinse teeth</td>
</tr>
<tr>
<td>Skin Care</td>
<td>Shave</td>
<td>Use provided soap</td>
<td>Use provided soap</td>
<td>Use provided soap</td>
<td>Use provided soap</td>
</tr>
<tr>
<td>Diet</td>
<td>No solid food as directed by your surgeon</td>
<td>Clear fluids including carbohydrate drinks until 2 hours before surgery</td>
<td>Clear liquids</td>
<td>Clear liquids</td>
<td>Clear liquids</td>
</tr>
<tr>
<td>Activity</td>
<td>Walk</td>
<td>Don’t smoke</td>
<td>Don’t smoke</td>
<td>Drink fluids</td>
<td>Drink fluids</td>
</tr>
<tr>
<td>Incentive Spirometer</td>
<td>10 times each hour when awake</td>
<td>10 times each hour when awake</td>
<td>10 times each hour when awake</td>
<td>10 times each hour when awake</td>
<td>10 times each hour when awake</td>
</tr>
<tr>
<td>Treatments</td>
<td>Foot pump, if prescribed by doctor</td>
<td>Foot pump, if prescribed by doctor</td>
<td>Elevate to prevent lower body</td>
<td>Elevate to prevent lower body</td>
<td>Elevate to prevent lower body</td>
</tr>
</tbody>
</table>

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How we embedded practice into IT

- Started with paper and pencil until we knew we had it right
- To date: 13 ERAS ordersets released for our EMR
- ERAS “flag” triggers patient banner & populates patient lists

Decision Support: Making the right thing easier to do

How we approached data analytics & reporting

- Comprehensive measurement strategy
- Intrinsically tied to clinical pathways

Balancing

Implement  Process  Outcomes

Core  Reusable  Representative
How we leveraged healthcare informatics to enable rapid PI

- Capitalize on rich EMR
- Fully administrative approach
- Support PI at all levels within organization

Macro: at-a-glance performance across all measures, identify variation across all hospitals

Micro: weekly patient-level burst reports to local care improvement teams

Roseville Story
ERAS on the ground: What it took to capture the magic!

- Overcame short time frame to implement the project
- Enhanced patient communication
- Breaking down of silos
- New paradigm for how the entire health care team practices
- Common focus and purpose
- Framing the experience for our patients and families

The Role of the ERAS Surgeon Champion

Glenn Tse, MD
Celebrating Successes Big & Small

How do we know it works?
Patients have a notably improved recovery experience

This was a night and day difference from the last time I had surgery.

My neighbor/friend was in the hospital for days. I was all ready to go home!

Let me know if you ever need me to be in a Kaiser commercial.

I was worried about having to get the patients up so early after surgery, but they were actually easier to mobilize! They were more alert, and their pain better managed.

Every patient should be an ERAS patient!

Statistically significant sustained results

Faster Recovery

Fewer Complications

Hardwired Practices
How to read the following SPC control charts

Jan’13-Jan’14: Baseline
Feb’14-Sep ’14: Early Adoption
Oct ‘14 onwards: Full Implementation

Faster Recovery with Less Harm

Colorectal-Average Hospital LOS (days)
Colorectal-Harm Free Surgery = ALL

Hip fx-Average Surgical LOS (days)
Hip fx-Harm Free Surgery = ALL
Significant Increased Adoption of Multimodal Pain Management

Colorectal-Multimodal Analgesia
ERAS Colorectal Multimodal + ALL

Baseline
Full implementation

85 pts/mo
(compared to 12 pt/mo baseline)

Total Hip-Multimodal Analgesia
ERAS Total Hip Multimodal + ALL

Baseline
Full implementation

64 pts/mo
(compared to 2 pt/mo baseline)

Significant Reduction in Total Opioid Use

Colorectal-Morphine Equivalence
ERAS Colorectal Morphine Equivalence + ALL

Baseline
Full implementation

32%

Total Hip-Morphine Equivalence
ERAS Total Hip Morphine Equivalence + ALL

Baseline
Full implementation

28%
**Significant Increase in Early Feeding Postop**

Colorectal-Early Feeding w/in 12 Hrs
ERAS Colorectal Early Feeding = ALL

**Significant Increase in Early Ambulation**

Colorectal-First Ambulation w/in 12 Hrs
ERAS Colorectal First Ambulation = ALL

Hip Fx-Early Feeding w/in 12 Hrs
ERAS Hip Fx Early Feeding = ALL

Hip Fx-First Ambulation w/in 12 Hrs
ERAS Hip Fx First Ambulation = ALL
Significant Increase in Continued Ambulation (POD1 – POD3)

**Colorectal-Sustained Ambulation**
- Increased from 351 pt days/mo (compared to 258 days/mo baseline) to 99 pt days/mo (compared to 19 days/mo baseline) after full implementation.

**Hip Fx-Sustained Ambulation**
- Increased from 351 pt days/mo (compared to 258 days/mo baseline) to 99 pt days/mo (compared to 19 days/mo baseline) after full implementation.

Where we’re headed
Vision: Enhanced Recovery Hospitals

2014

Colorectal & Hip Fx
~4500 annual cases total

2015

Total Knees & Hips
~12,000 annual cases total

... +
Other Surgeries

Medical patients

Destination

Enhanced Recovery Hospital

It Takes a Village!

We would like to extend a special Thank You to:

- The Gordon and Betty Moore Foundation
- ERAS Executive Sponsors
- ERAS Steering Committee
- Quality and Operations Support
- Patient Care Services, Quality & Safety, NSQIP
- Regional Health Education
- KP HealthConnect

...And countless other subject matter experts and frontline collaborators who have and continue to make this work possible!
Questions? Comments?