

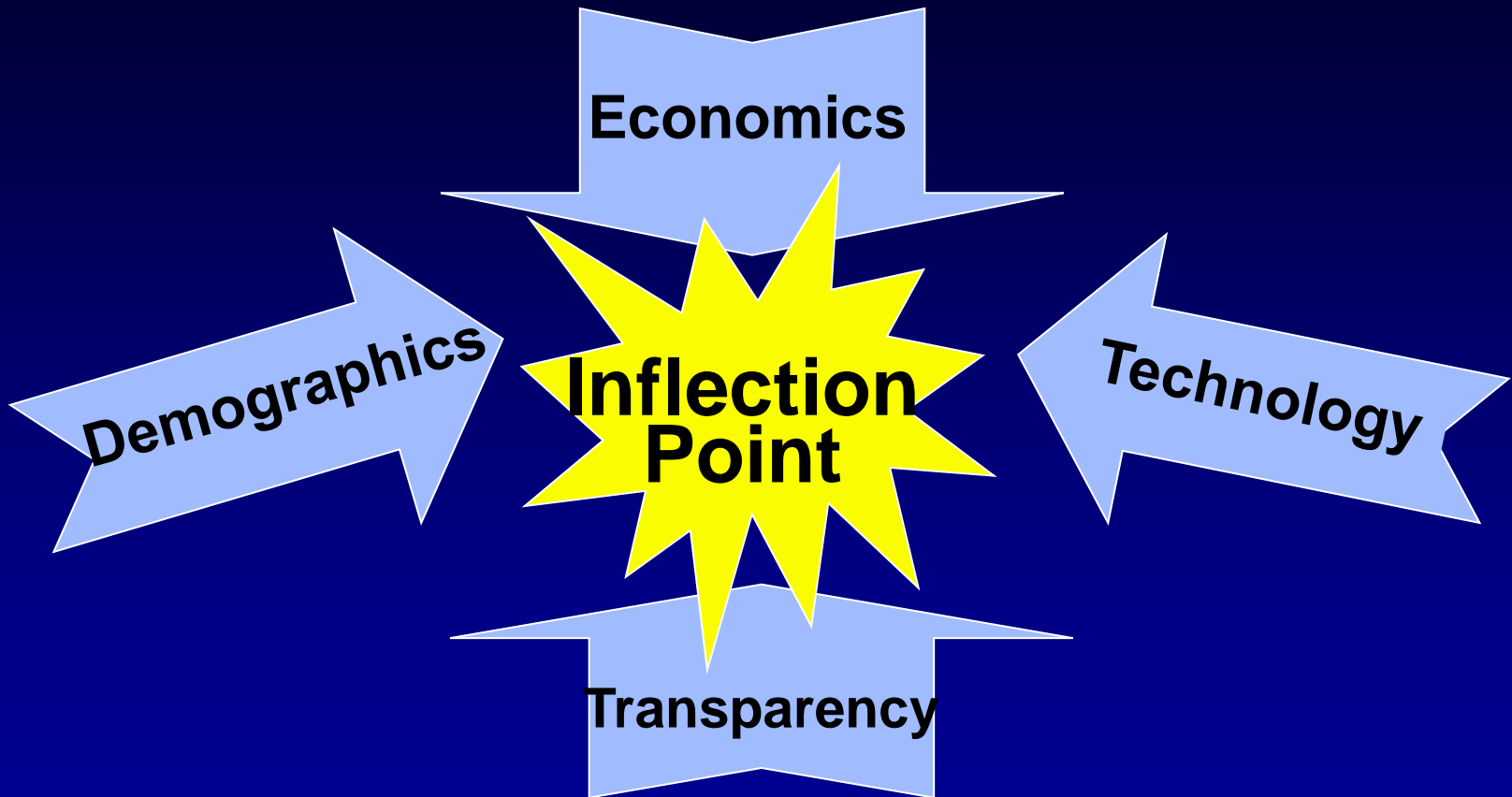


Care Paths and Reducing Unnecessary Variation

**Patient Experience Summit:
Empathy + Innovation**

May 19, 2014

U.S. Healthcare is Undergoing Dramatic Change



“Plan or be Planned For”

Russell L. Ackoff

**Our strategy for adapting to
the change**

Shift to a focus on value

What Does 'Value' Really Mean?

$$\text{Value} = \frac{\text{Outcomes}}{\text{Cost}}$$

Outcomes

Quality

Health Status

Process

Experience

Cost

Event

Episode

Per Capita

Drivers of Value

- **Unsustainable costs**
- **Variable quality outcomes**
- **Transparency**
- **Dissatisfaction**

All providers are at financial and reputational risk

The Shift

Volume-Based



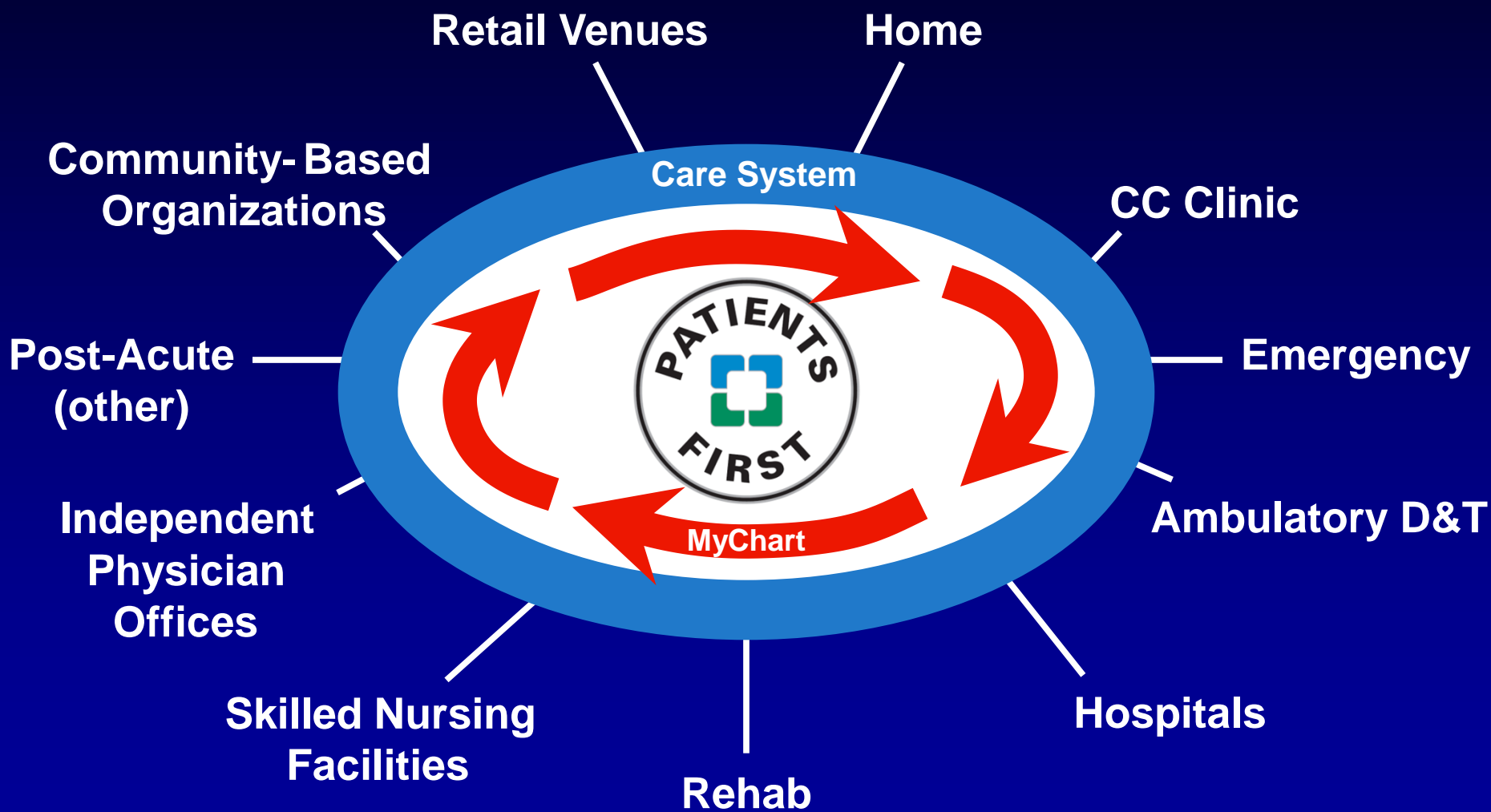
Value-Based

Payment	Fee-for-Service	Outcomes Based
Focus	Acute Episodes	Bundles & Populations
Role of the Provider	Single Episodes	Care Continuum
Information	Retrospective	Real-time & Predictive

Fundamentally new orientation & capabilities

Cleveland Clinic Integrated Care Model

A Value-Based Model of Care



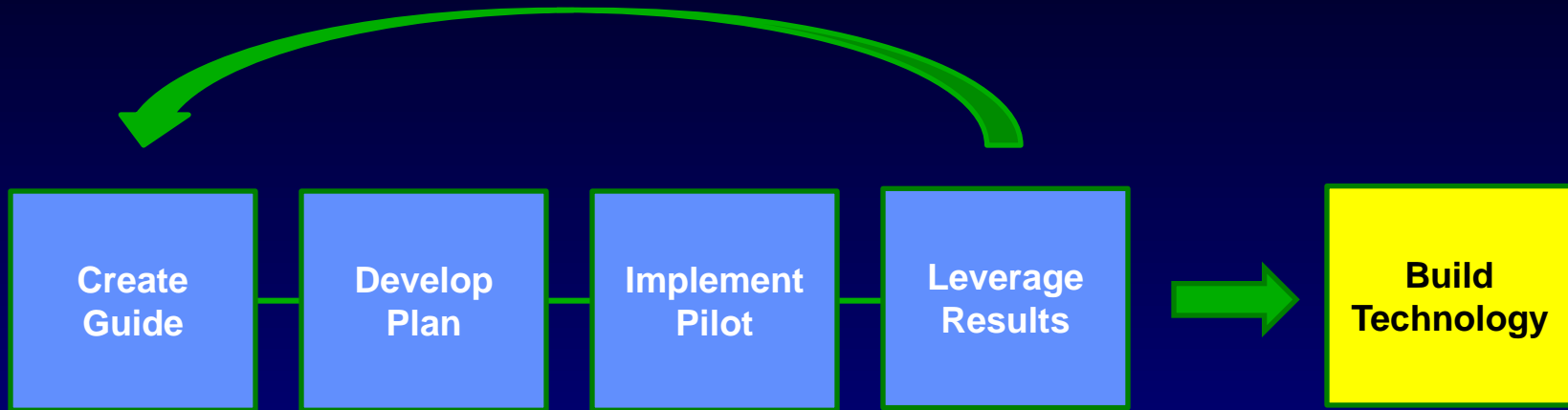
Care Path Defined

- **Established multidisciplinary care plan used to optimize the value of care by reducing unnecessary practice variation and cost**
 - **Evidence or experience-based**
 - **Not always a single approach**
 - **Expected practice yet allows judgment**
 - **Some clinical activities will not apply**

Fully Mature Care Path Guide Should Address:

- **Quality metrics**
- **Appropriateness criteria**
- **Screening & prevention guidelines**
- **Health status measures**
- **Cost**

Care Path Development Cycle



Output

Rationale
Algorithms
Metrics

Analysis
Process Maps
Education

Data Review
PDCA

Lessons Learned
Next Steps

Message

Case for Change
Vision

What, where,
when, why of
change

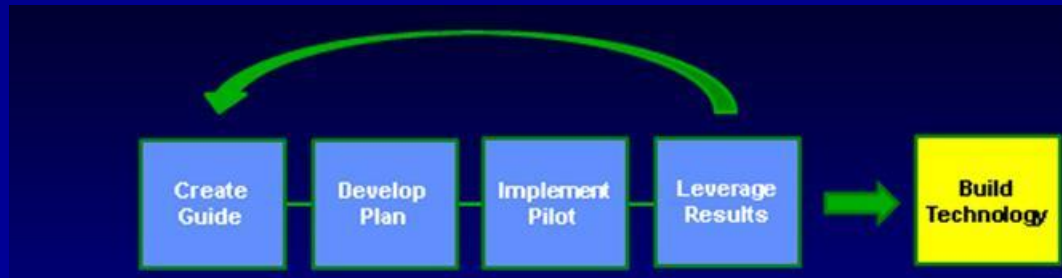
Performance
updates
Adjustments

Successes
Recognition

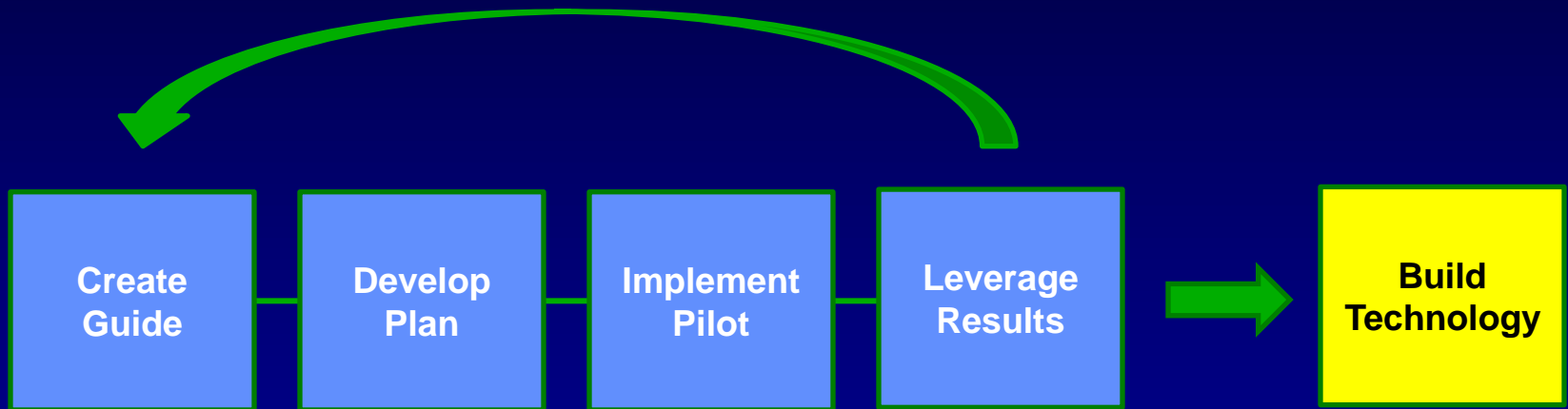
Enables Culture Shift

From Care Path Guides to Implementation

- **Care Path Core Team**
 - **Physician champion (disease-specific)**
 - **Clinical lead (department-specific)**
 - **Continuous/Quality Improvement**
- **Care Path Examples**
 - **Hip and Knee Replacement**
 - **Induction of Labor**
 - **Sepsis**



Hip and Knee Replacement Care Path



Knee and Hip Replacement

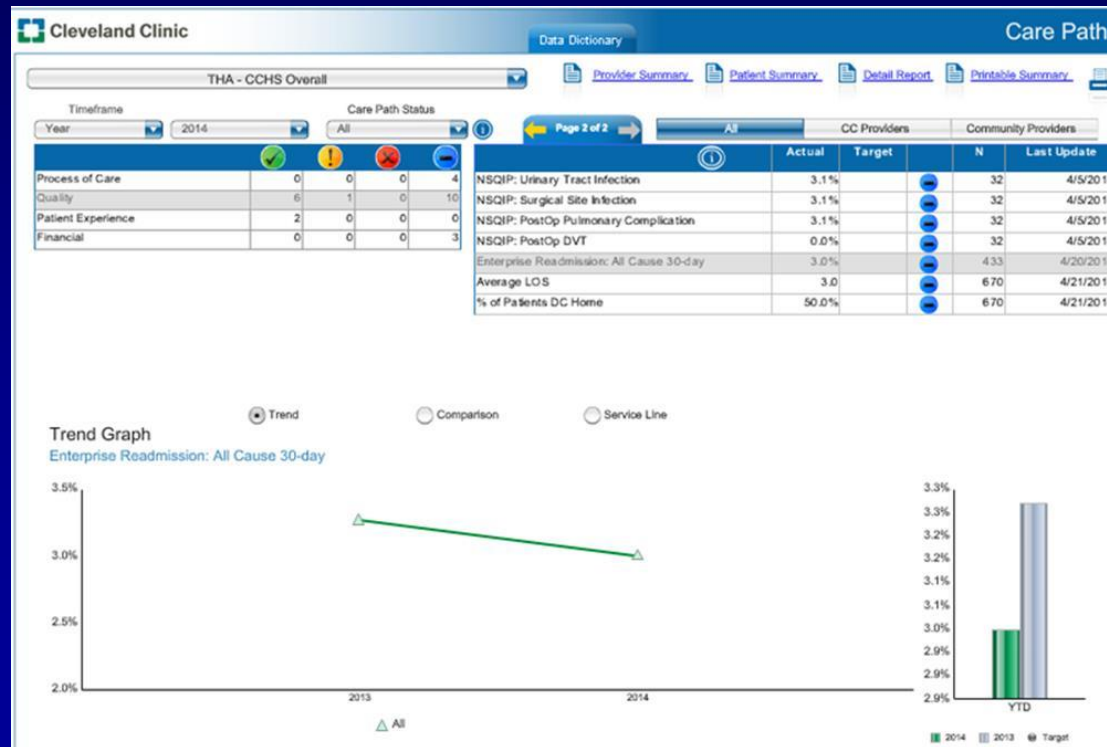
- **Major focus for payors and employers**
- **Externally reported quality indicators**
- **Partnering with other organizations**
- **Cost and quality – transparency is growing**
- **Need to understand current variation in cost and performance for risk contracting**

Guide to Technology Solution

- **Goal to use existing technology tools to support clinical practice as described in guide**
- **Proof of concept of technology solution**
- **Multidisciplinary group of clinicians, technology, reporting, quality, clinical compliance, process improvement**

Dashboard Development

- Metrics to define what parts of care path drive value
- Data by surgeon, facility and service line
- Peer review and peer to peer process improvement



Results: Improvement in Utilization

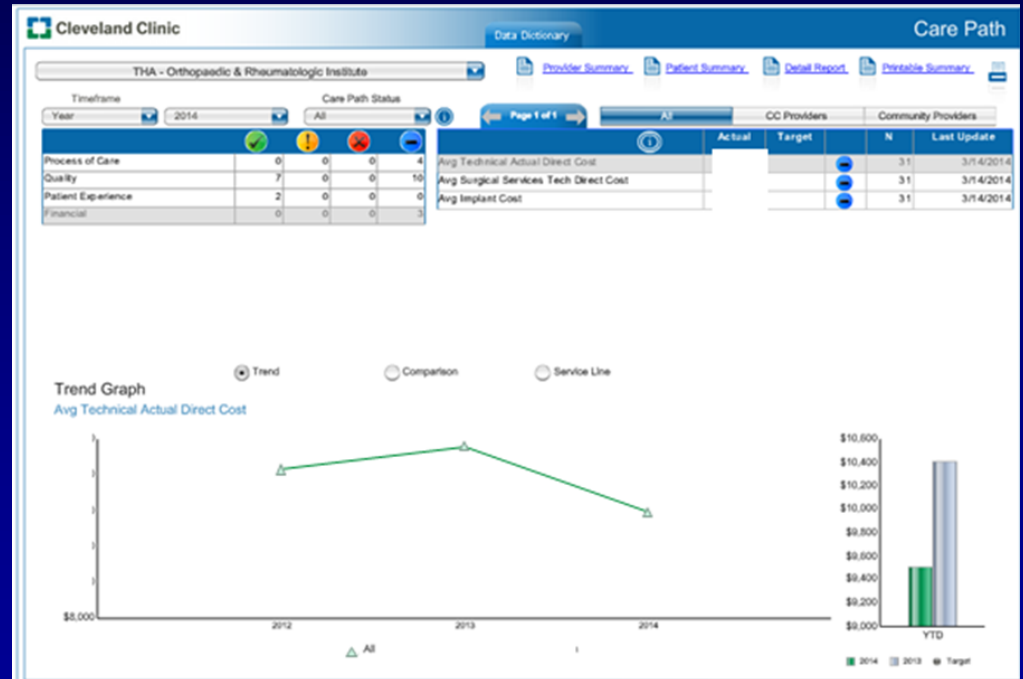
Month	THA			TKA		
	Designation	Note	Both	Designation	Note	Both
January	27%	50%	23%	29%	49%	26%
February	45%	54%	34%	44%	59%	40%
March	54%	71%	48%	62%	81%	58%
1 st Quarter	44%	60%	37%	48%	65%	45%

Utilization Rates by Surgeon: Slow adopters take extra work: Carrots and Sticks

March 2014 Care Path Compliance	Yes	No	Total	Percent
	2		2	100.00%
	13		13	100.00%
	1		1	100.00%
	9		9	100.00%
	3		3	100.00%
	1		1	100.00%
	6	1	7	85.71%
	12	3	15	80.00%
	5	2	7	71.43%
	2	1	3	66.67%
	2	1	3	66.67%
	3	3	6	50.00%
	3	4	7	42.86%
	1	2	3	33.33%
	2	9	11	18.18%
	1	5	6	16.67%
	1	31	32	3.13%
		2	2	0.00%
		3	3	0.00%
		6	6	0.00%
		2	2	0.00%
Grand Total	67	75	142	47.18%

Early Outcomes

- Physician review of supply cost has reduced the use of miscellaneous supply cost categories by \$250k (reduction of 75% on MC)
- Savings \$1,200 direct cost per case in four months without change in cost of implant
- Result from following care path and reducing unnecessary variation in practice



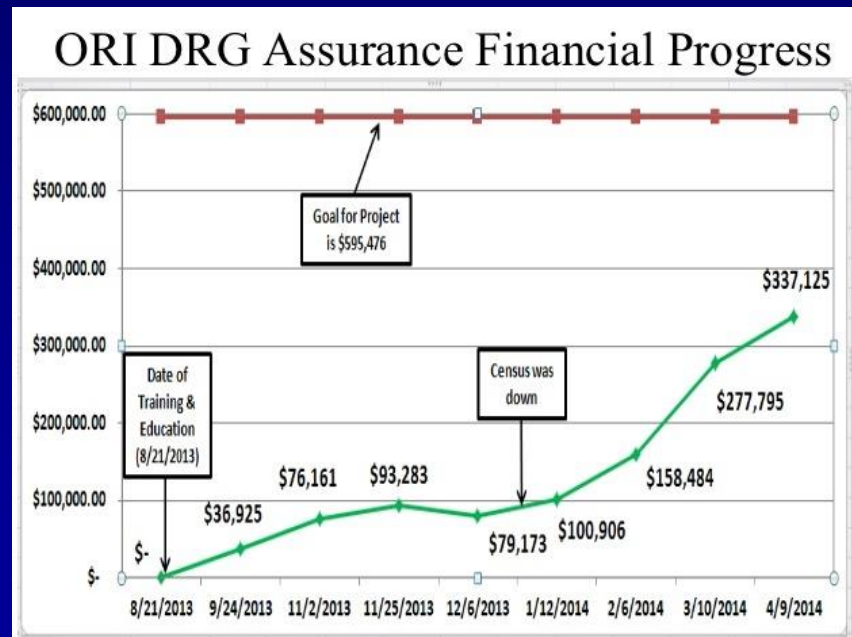
Cost and LOS: Rapid Recovery Program

- One of the highest element in our cost is LOS
- LOS before/after care path implementation

Surgery	Variable	Care Path	
		Pre	Post
THA	LOS	3.1 days	2.0 days
	Cost		- 1,800/case
TKA	LOS	3.2 days	2.3 days
	Cost		- 2,000/case

Structured Documentation: Improves Revenue

- Care path notes have improved documentation
- Better communication which improves provider and physician satisfaction
- DRG assurance has improved also (extra revenue)



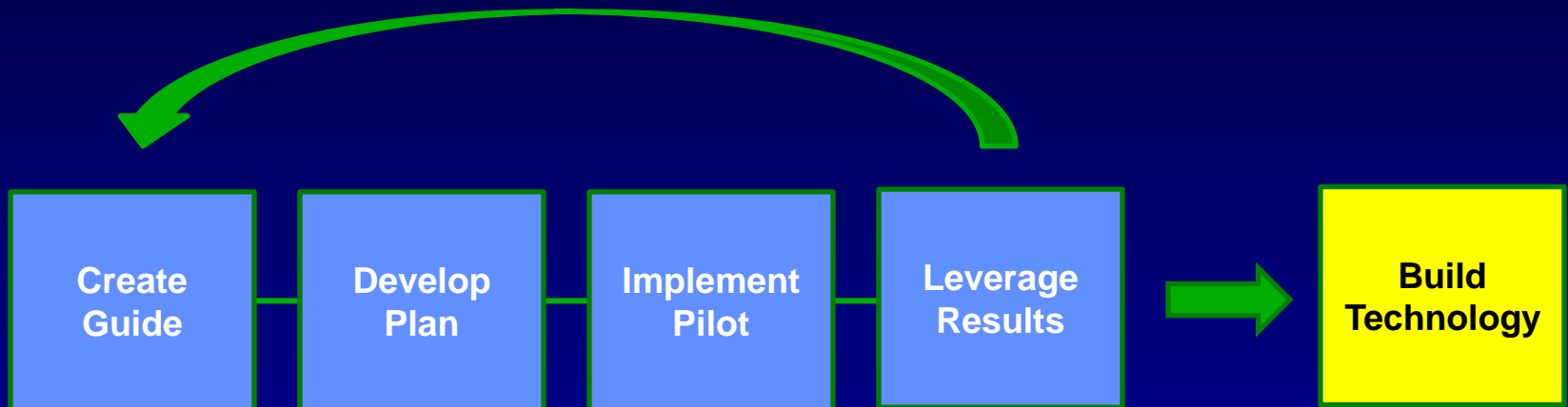
Next Steps

- **Optimization of technology based upon early findings**
- **Development of episode bundle products**
- **Deeper understanding of cost**
- **Identification of new opportunities for improvement**

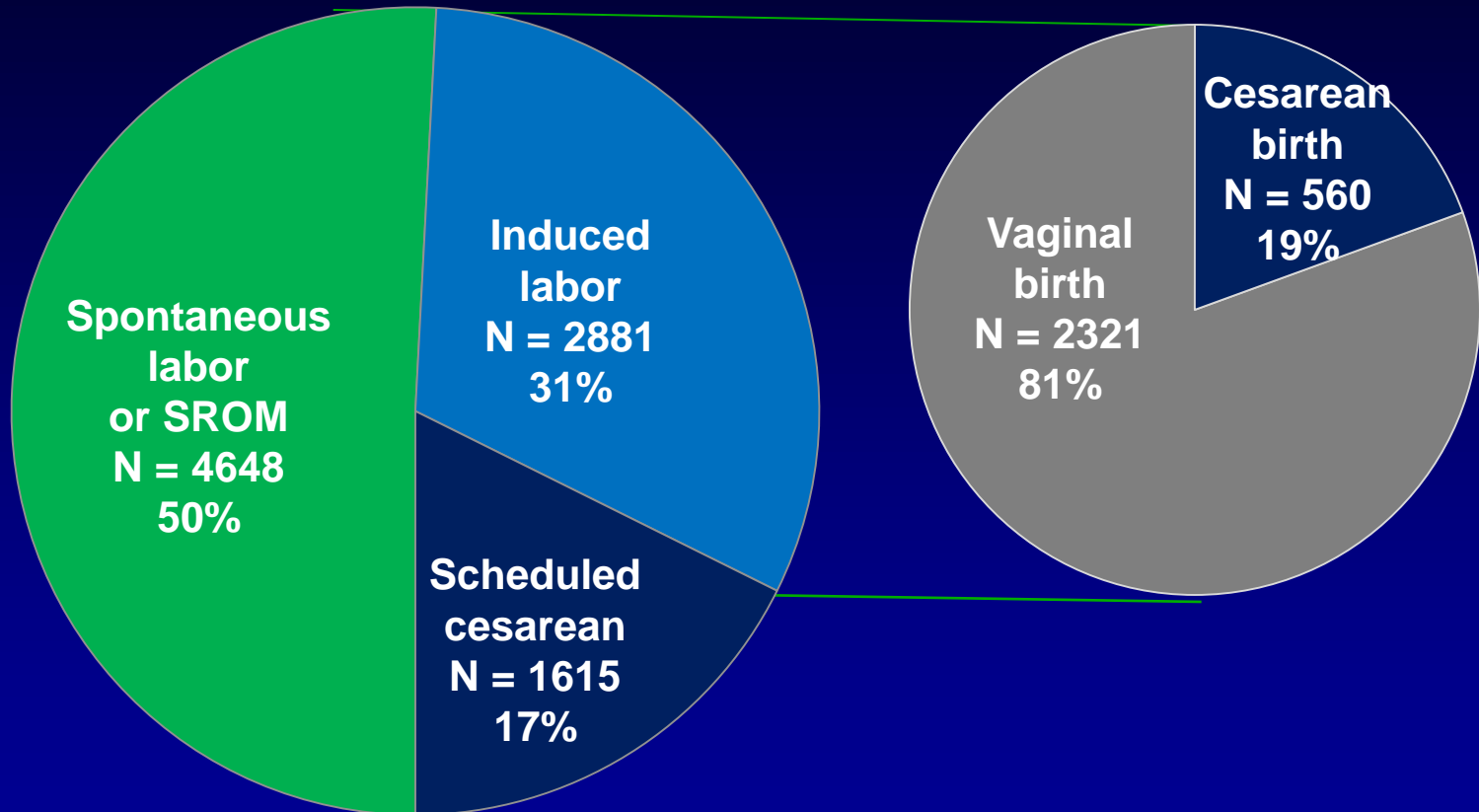
Lessons Learned

- **Improvement in cost and quality occur before full care paths are fully implemented**
- **Accurate and validated data is required for provider engagement**
- **Staff education takes time**
- **Must define best practice and use data to drive to that expectation by provider**
- **Communication of defined goals and expectation by leadership is critical**

Induction of Labor Care Path



Analysis: Births at ≥ 37 weeks



Source: EMR Data, CCHS 2013, Complete Charts ≥ 37 weeks . Total births = 9144.
CCHS rate of labor induction in 2013 was 31%. U.S. rate of labor induction was 23.1% in 2008.
U.S. Census Bureau., Statistical Abstract 2012.

Induction of Labor: Impact

Outcomes

- **C-section rate: 19.4% with vs. 10.2% without**
- **Longer length of stay**

Cost

- **Excess cost \$3000-\$5000 per birth**

Care Path Guide

- **Medical indications**
- **Low risk patient: induce at 41 weeks**

Induction Pilot: Define & Plan

Define phase

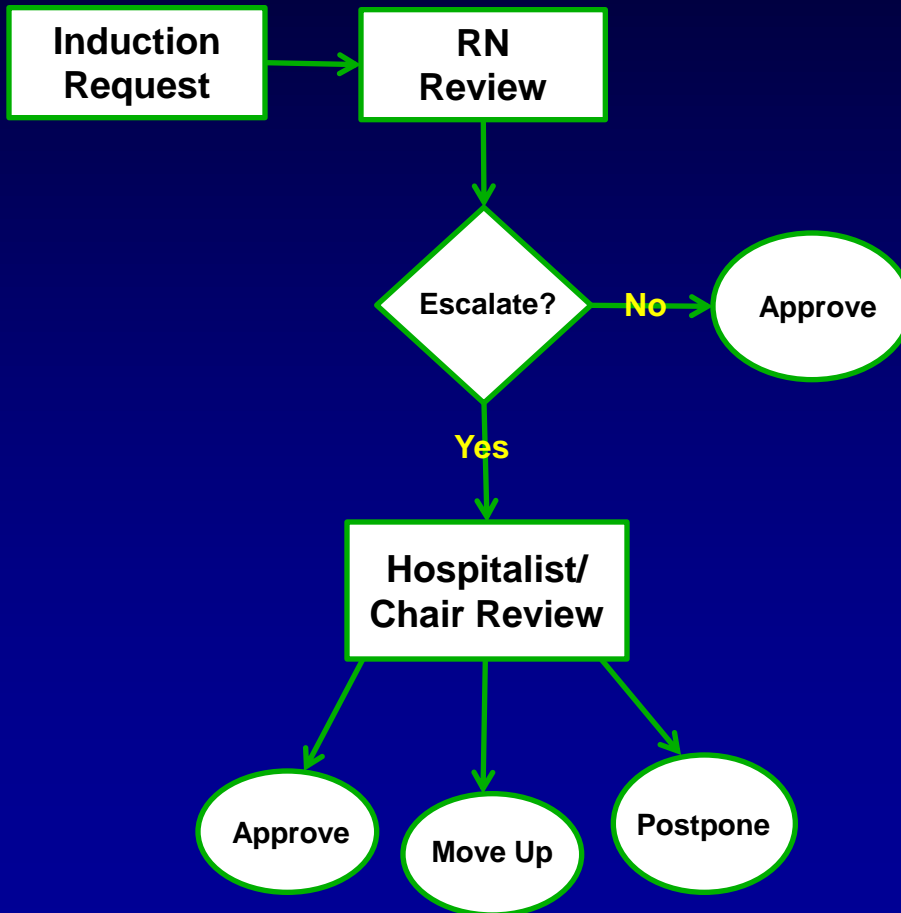
- 1. Opportunity:**
30% not indicated
- 2. Pilot team**
- 3. Current state:**
Baseline, process map

Plan phase

- 1. Future state:**
Metrics, process map
- 2. Staff notification:**
Go live date.
- 3. Monitoring plan:**
Weekly data review,
PDCA

Induction Pilot: Implement Phase

Go Live December 4, 2013



Pre-Admission Review Form – Induction of Labor Care Path Scheduled Date _____
Review Closing Date _____

RN

Patient Name _____ DOB _____ MRN _____ Dx _____
Provider Name _____ EGA on induction date _____ EDD date _____
Cervical ripening prior to admission? _____ MRM recommended? _____
Notes:

____ Approved as requested. CLOSED folder.
____ Hospitalist review. HOSPITALIST folder.

Reviewer signature _____ Date _____

LABORIST

Notes:

____ Approved as requested. APPROVED folder.
____ Move up to earlier induction date. CHANGE folder. Page attending OB to offer move-up.
____ Ob/Syn Chair review. CHAIR folder. Page chair to discuss referral for second review.

Reviewer signature _____ Date _____

CHAIR/DESIGNATE

Notes:

____ Approved as requested. APPROVED folder.
____ Move up to earlier induction date. CHANGE folder. Page attending OB to offer move-up.
____ Postponed. CHANGE folder. Page attending OB to reschedule induction.

Chair signature _____ Date _____

Review Form

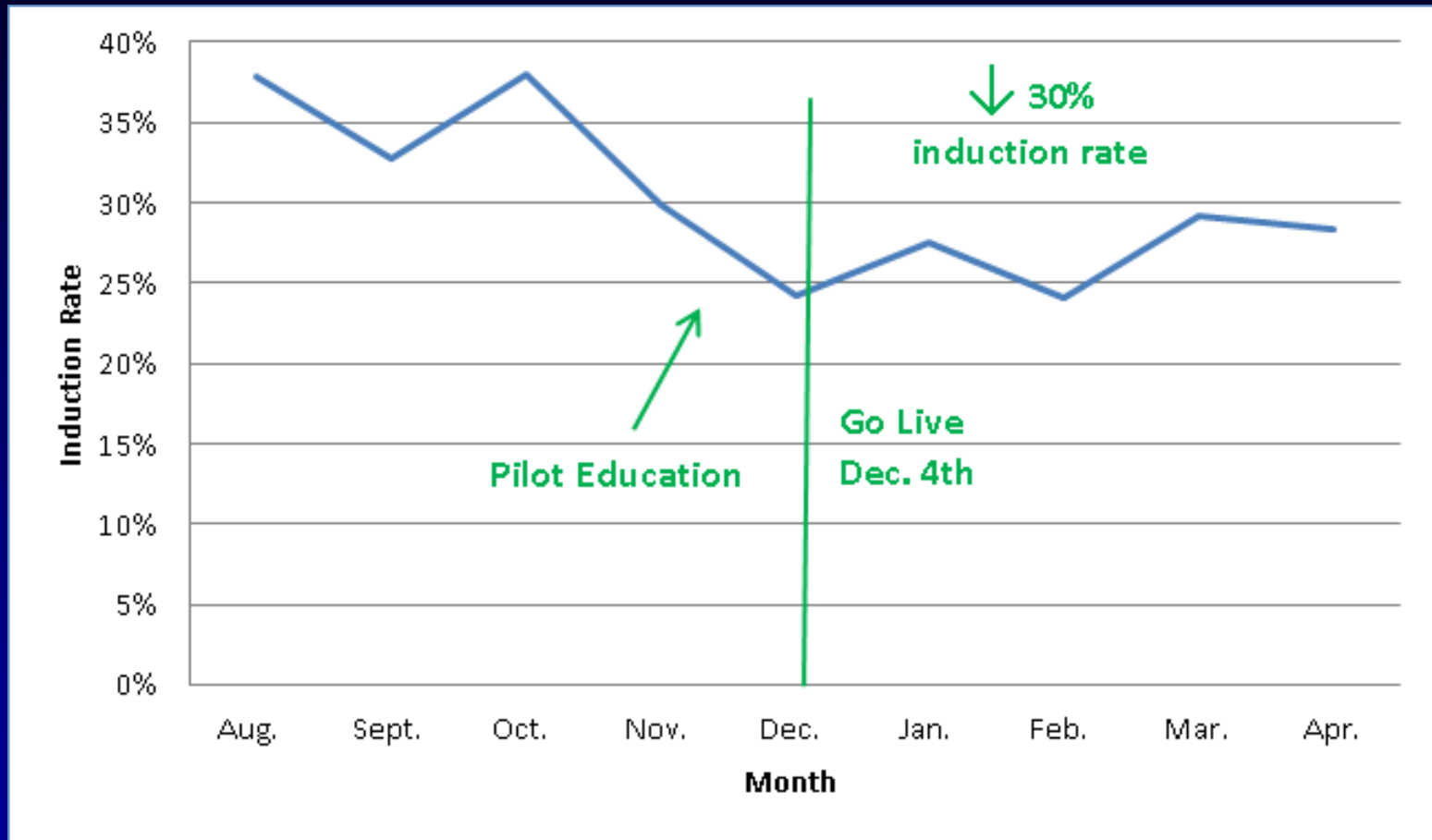
Pilot Results: Induction Requests

	# Cases since Pilot Launch*
Total # Induction Requests	529
Physician Reviewed	51
Decision: Move Up	5
Decision: Postpone	10

↓ 20%
induction requests

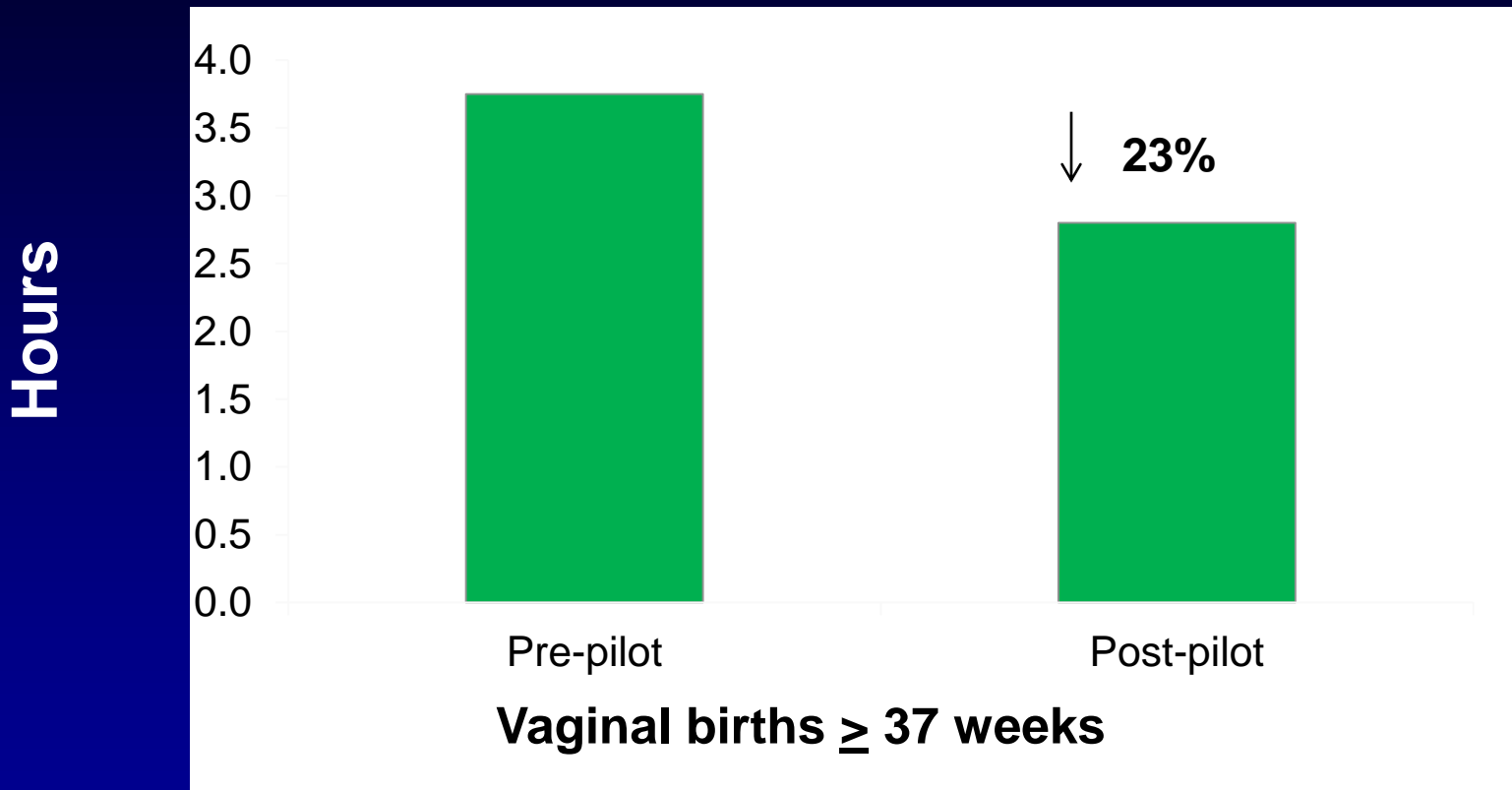
1 patient was induced

Pilot Results: Induction Rate



Source: EMR data excludes EGA <37wk, 8/2013 – 4/2014

Pilot Results: Door to Admission*



* Admission criteria: 5 cm and/or ruptured membranes

Source: EMR data excludes EGA <37wk, 10/2013 and 2/2014

Induction Pilot: Transition Phase

- Results
- Reward and recognition
- Sustainment plan
- EMR changes

Scheduled Delivery Checklist:

Initial Anticipated Delivery Details:

Anticipated Delivery Method:

Anticipated Delivery Date: Preferred Time: Preferred Delivery Location:

Clinical Details for Anticipated Delivery

Induction Details:

Primary Medical Reason for Induction: Primary Non-Medical Reason for Induction:

Planned Induction Method:

Clinical Pelvimetry:

Bishop's Score

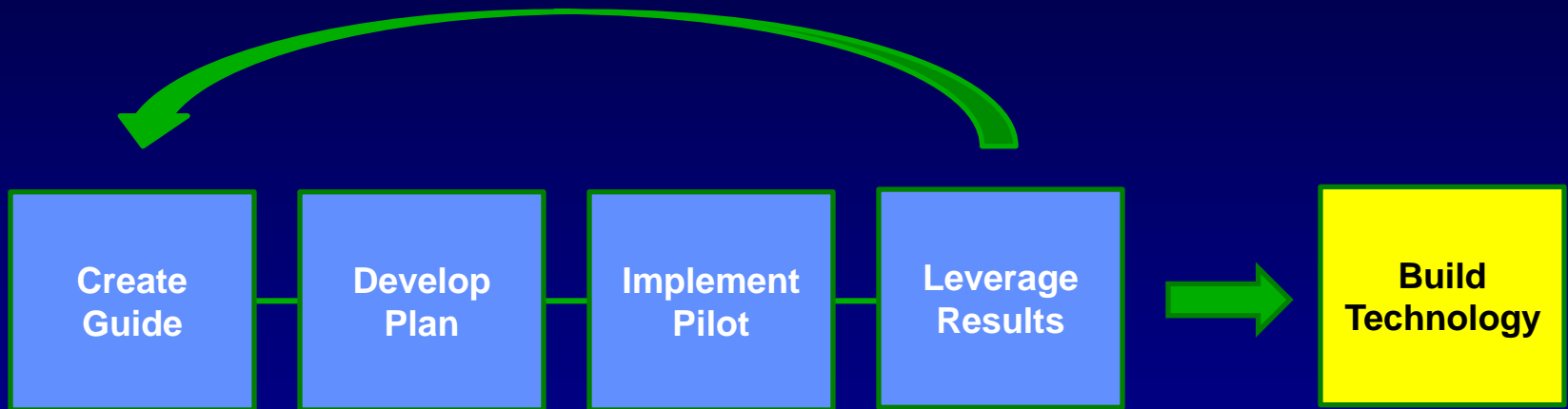
Dilation:	Effacement:	Station:	Position:	Cervical Consistency:	Total Score:
<input type="radio"/> 0 - Closed/0 cm	<input type="radio"/> 0 = 0-30%	<input type="radio"/> 0 = -4 to -3	<input type="radio"/> 0 = Posterior	<input type="radio"/> 0 = Firm	<input type="text"/>
<input type="radio"/> 1 - 1 cm to 2 cm	<input type="radio"/> 1 = 40-50%	<input type="radio"/> 1 = -2	<input type="radio"/> 1 = Middle	<input type="radio"/> 1 = Medium	
<input type="radio"/> 2 - 3 cm ro 4 cm	<input type="radio"/> 2 = 60-70%	<input type="radio"/> 2 = -1 to 0	<input type="radio"/> 2 = Anterior	<input type="radio"/> 2 = Soft	
<input type="radio"/> 3 - 5 cm to 10 cm	<input type="radio"/> 3 = Greater than 80%	<input type="radio"/> 3 = 1 to 4			

Amnio for FLM: EFW: MFM advising delivery < 39 weeks:

Lessons Learned

- **Work with the willing**
- **Leaders must stay on message**
- **Care paths are about people: EQ**
- **Small-scale, rapid cycle**
- **Communication, rapid revision**
- **Change paper in minutes, change EMR in months**

Sepsis Care Path



Sepsis

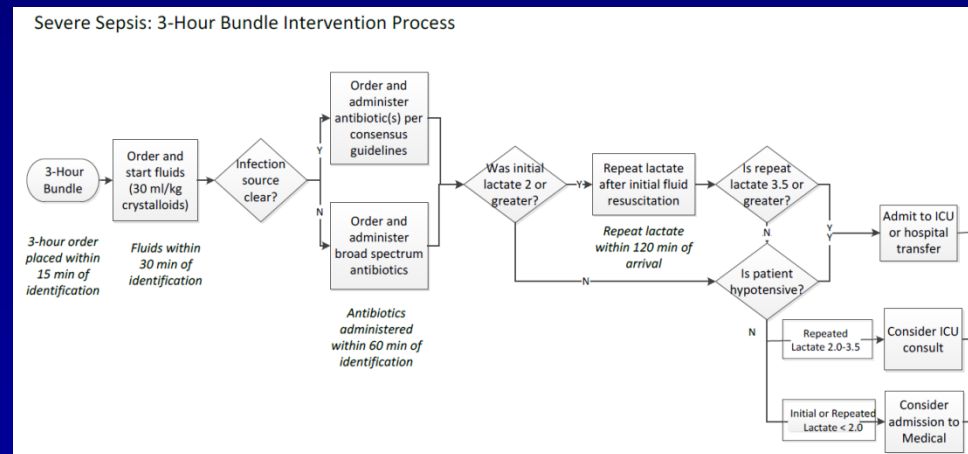
- **Systemic response to infection that can lead to acute organ dysfunction (severe sepsis) and hypotension (septic shock)**
- **Incidence ↑83%**
- **Mortality 30-45%**
- **1 of top 5 most costly diseases (\$25,000-\$50,000 per episode)**
- **2/3 of sepsis patients > 65 years**
- **1 of top 5 malpractice claims for ED**

Sepsis: Target Opportunities

- **Surviving Sepsis Guidelines est. in 2003**
- **No standard screening process or method**
- **No adherence to 3- or 6-hr sepsis bundles**
- **ED average length of stay = 5.5 hours**

Severe Sepsis Care Path Guide

- **Cross-institute and hospital collaboration**
- **Goals**
 1. **Early screening of patients for sepsis**
 2. **Compliance with 3- and 6-hr sepsis bundles**
 3. **Expedited admission process**



Sepsis Pilot Planning

- **Pilot Scope**
 - ED arrival → Medical ICU admission
 - Main Campus and Fairview hospitals
- **Assemble Team**
 - ED, ICU, Pharmacy, RT, Lab, Throughput

- **Assess current state**
- **Design future state**
 - Sepsis screening form

Severe Sepsis Screening Tool

1. Are any two of following signs & symptoms of infection both present and new to the patient?

- YES (2 or more present)
- NO

Hyperthermia > 38.3 °C (101.0 °F)

Hypothermia < 36 °C (96.8°F)

Tachycardia > 90 bpm

Tachypnea > 20 bpm

Altered mental status

Oxygen saturation < 92%

SBP < 90 mmHg or MAP < 70 mmHg

2. Is the patient's presentation suggestive of a new, serious infection?

(E.g. Pneumonia, lung infection, urinary tract infection, meningitis, skin/soft tissue infection, wound infection, etc.)

- YES
- NO

If the answer is yes to both questions 1 and 2:

- ✓ Order SEPSIS SCREENING PANEL
- ✓ CT/RN hand form to Charge Nurse
- ✓ Charge Nurse obtain physician signature and hand off form for completion

Sepsis Care Path

ED Process Metrics

Goal	Metrics	Target
Earlier identification of ED patients with sepsis through triage screening	Positive screening to lactic acid result	≤ 30min
Expedited ICU admission process from ED	Sepsis alert to ED departure	≤ 60 min
	ED Arrival to ED departure (LOS)	≤ 175 min

Sepsis Pilot

Education and Training

Content

- Disease (incidence, mortality, malpractice)
- Process (screening, bundles, ED LOS)
- Overcoming biases (fluids)

People

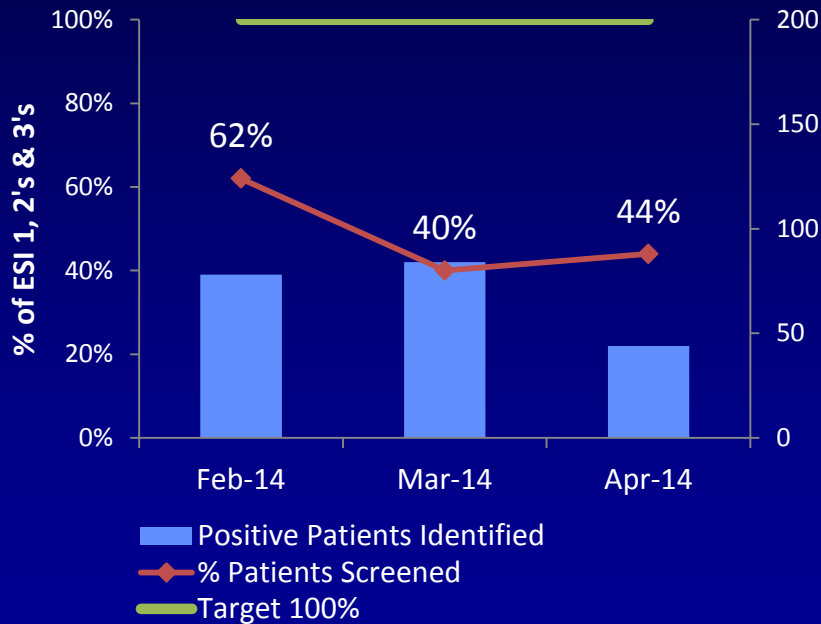
- Delivered by ED and ICU physician and nursing leadership
- Delivered to 100% ED/ICU nursing, providers and support
- High level of engagement

Monitoring Plan

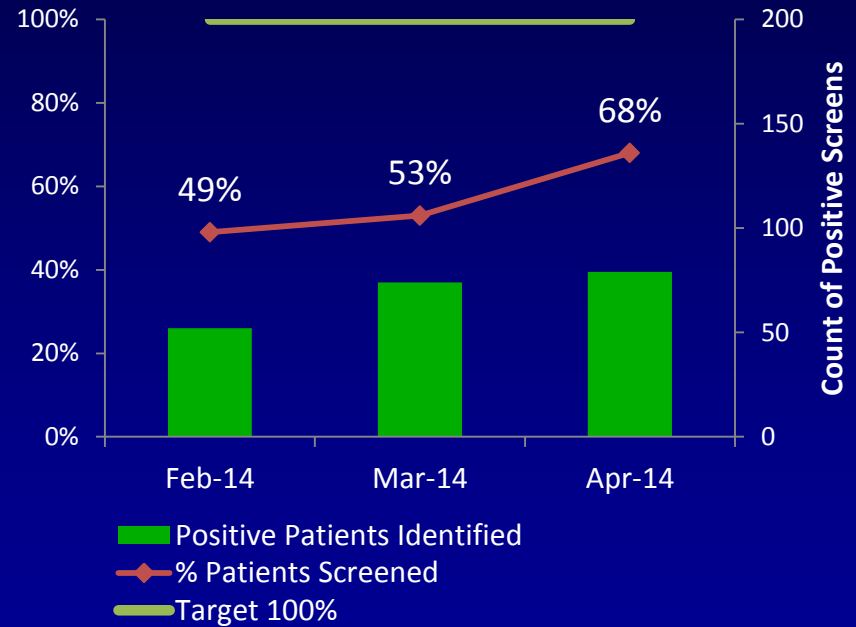
- Data collection
- Continuing education
- Process adjustments

Sepsis ED Screening for Sepsis: Rate and Results

Main Campus ED

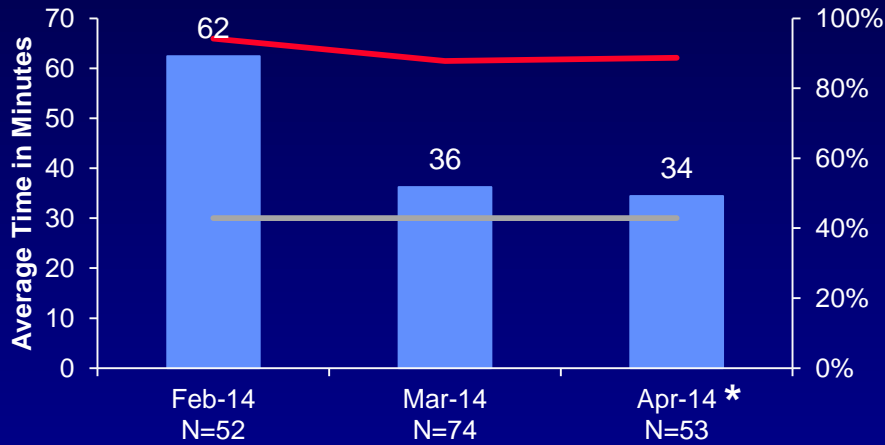


Fairview ED

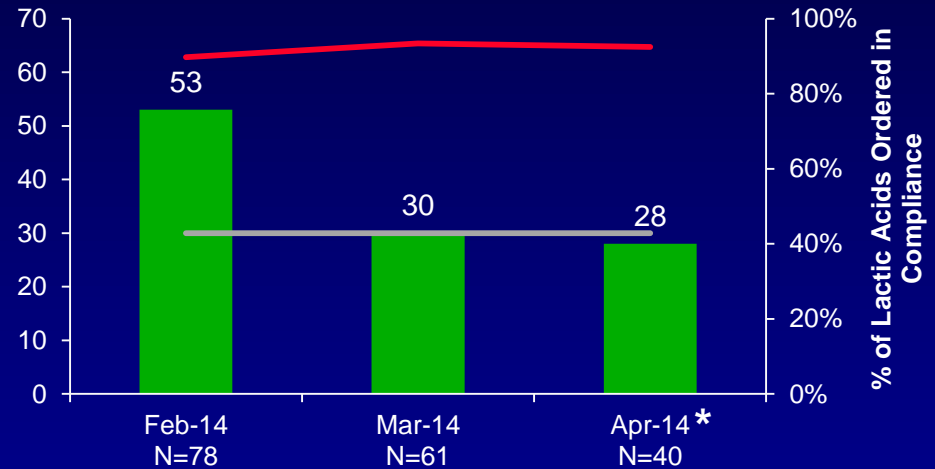


Positive Screening to Lactate Result (30 min)

Main Campus ED



Fairview ED



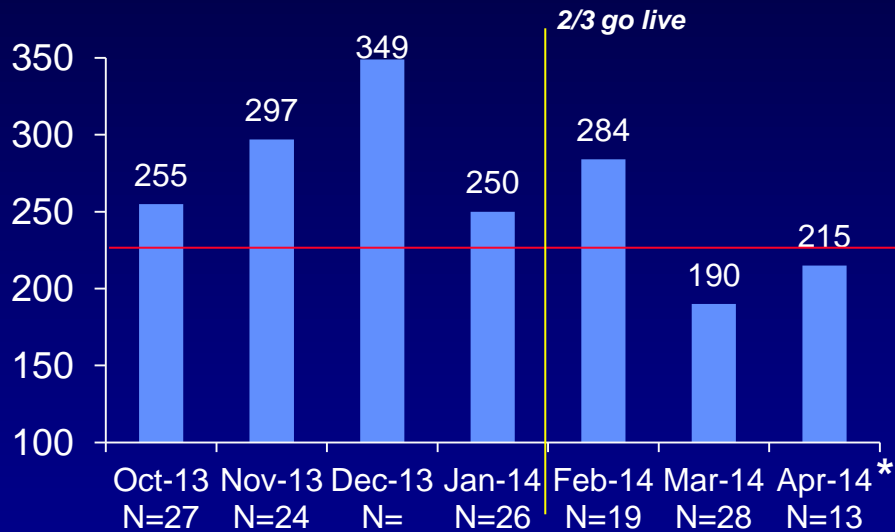
■ Average Time (Min) — Target = 30 Min — % Lactates Ordered

■ Average Time (Min) — Target = 30 Min — % Lactates Ordered

*Data through 4/19/2014

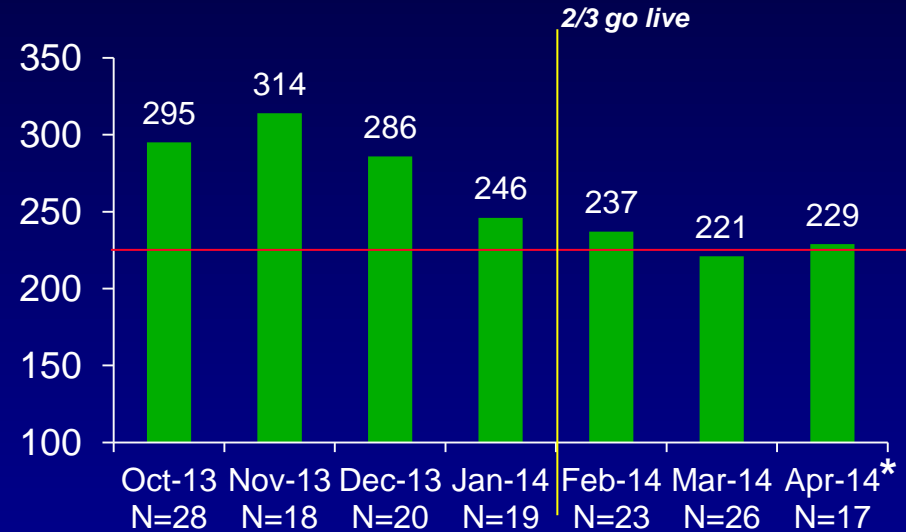
ED LOS for Sepsis ICU Admissions (175 min)

Main Campus ED



↓ 19%
(by 54 min)

Fairview ED



↓ 21%
(by 62 min)

Sepsis Care Path

Next Steps

- **ED Process**
 - **Cost and discharge destination analysis**
 - **Plan for sustainment**
- **Epic Changes**
 - **Order sets**
 - **Electronic screening alert**
- **Process Expansion**
 - **Emergency Departments**
 - **Inpatient floors**

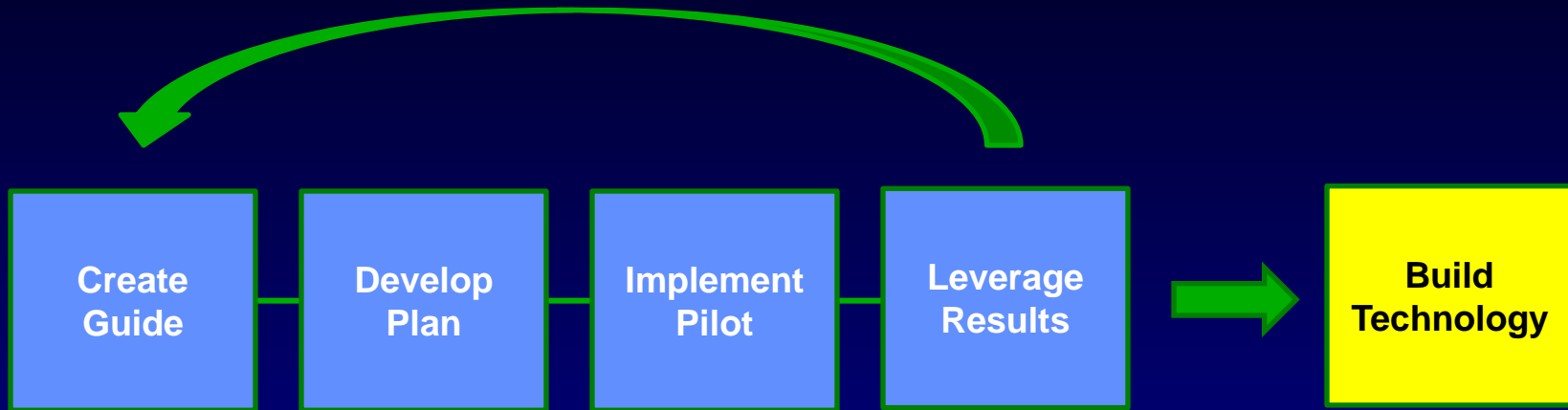
Lessons Learned

- 1. Education: 100%, focus on case for change and address concerns**
- 2. Data: review regularly and act on it (challenge of communication)**
- 3. Process: must be simple and automation must occur quickly to hardwire results**

Summary

- **Strong physician and nursing champions**
- **Iterative communication focusing on individual caregiver concerns with change**
- **Performance data must be reviewed and shared (foundation for culture change)**
- **Optimal approach is pilot → learn → build**

Care Path Development Cycle



Output

Rationale
Algorithms
Metrics

Analysis
Process Maps
Education

Data Review
PDCA

Lessons Learned
Next Steps

Message

Case for Change
Vision

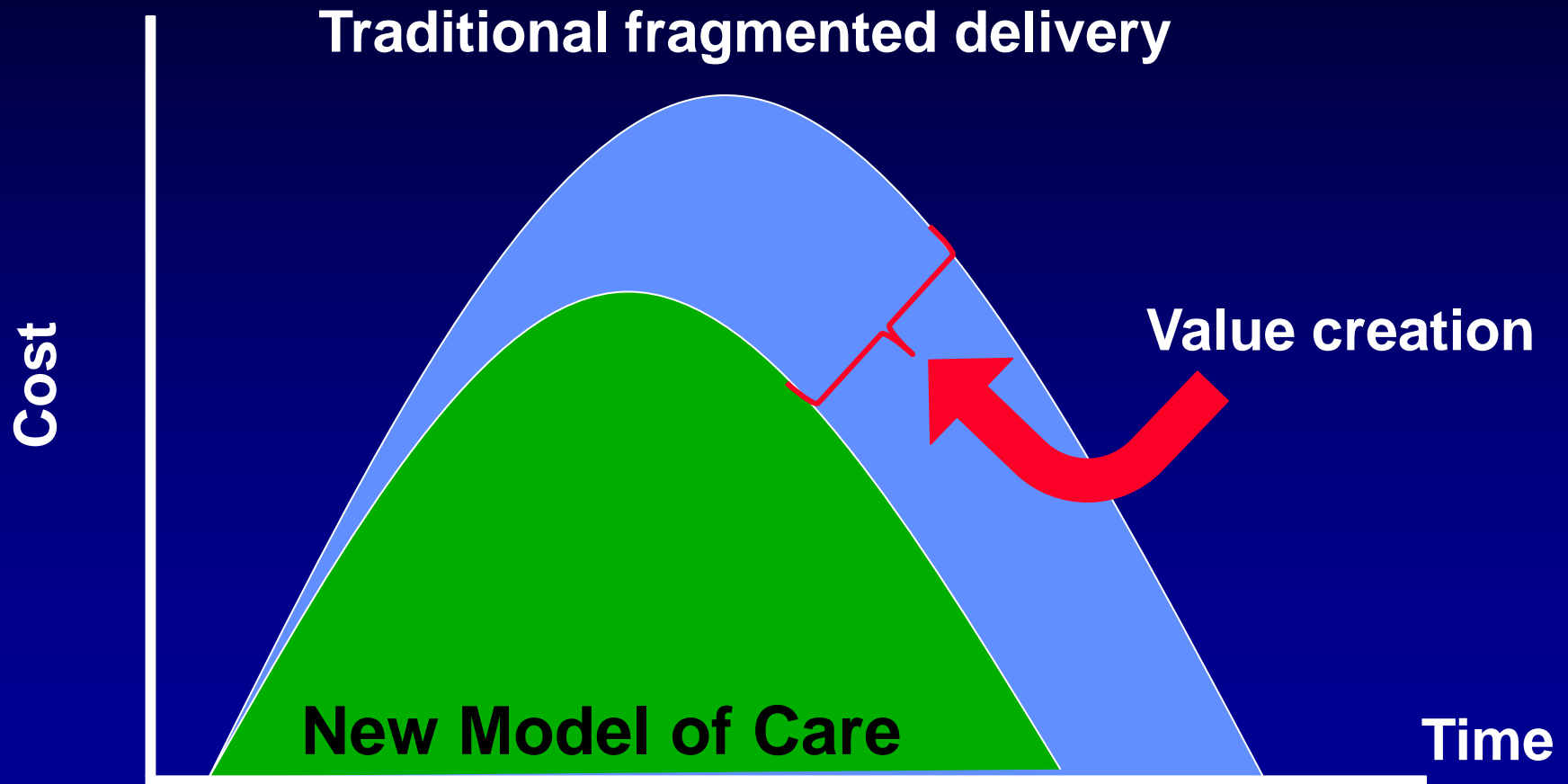
What, where,
when, why of
change

Performance
updates
Adjustments

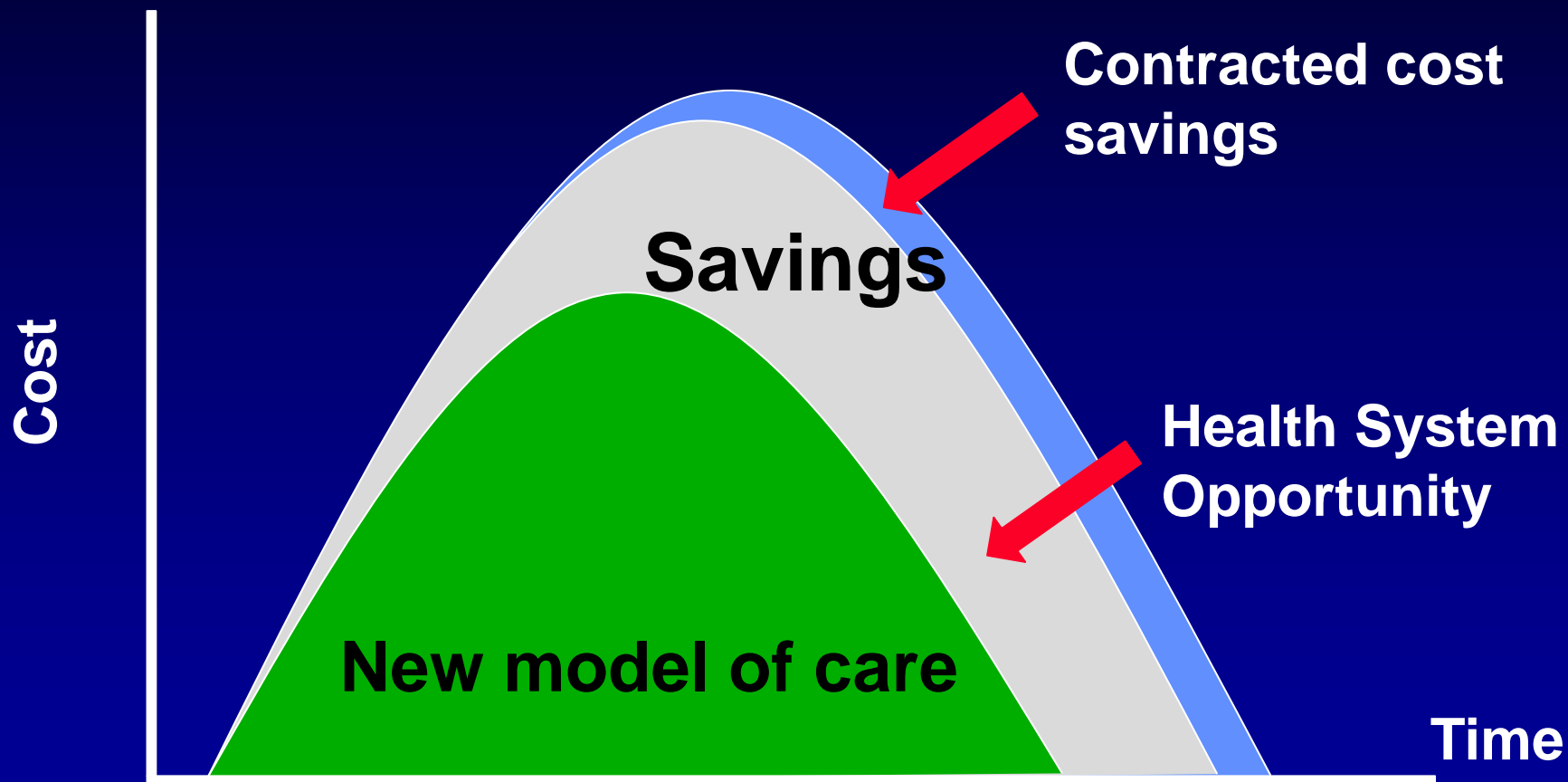
Successes
Recognition

Enables Culture Shift

Value is Created by Care Redesign

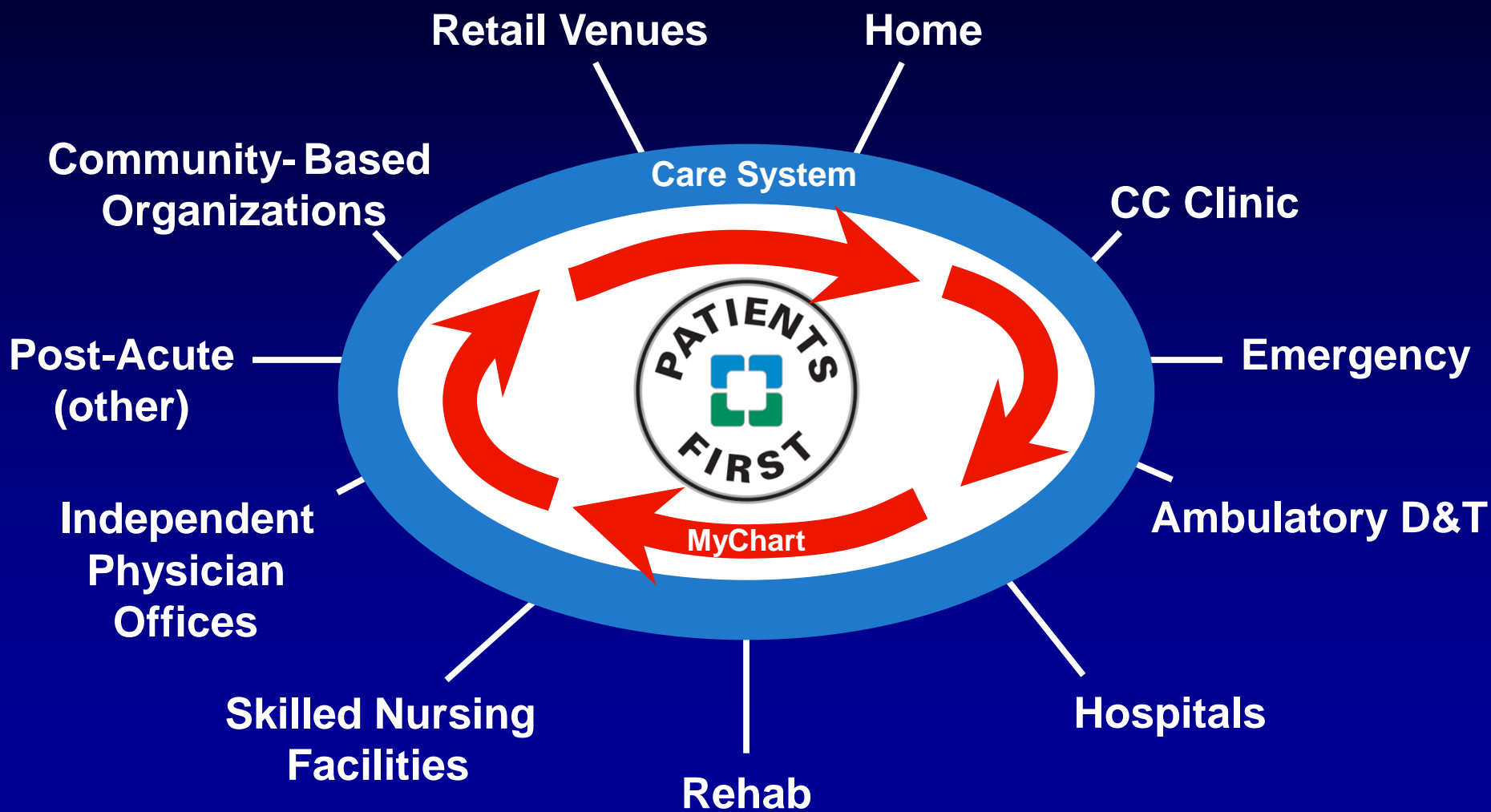


Management of the cost associated is required as our payment system evolves



Cleveland Clinic Integrated Care Model

A Value-Based Model of Care





Cleveland Clinic

Every life deserves world class care.