

Workflow Process Redesign during Clinical Information Systems Implementation: Overview, Methods and Tools

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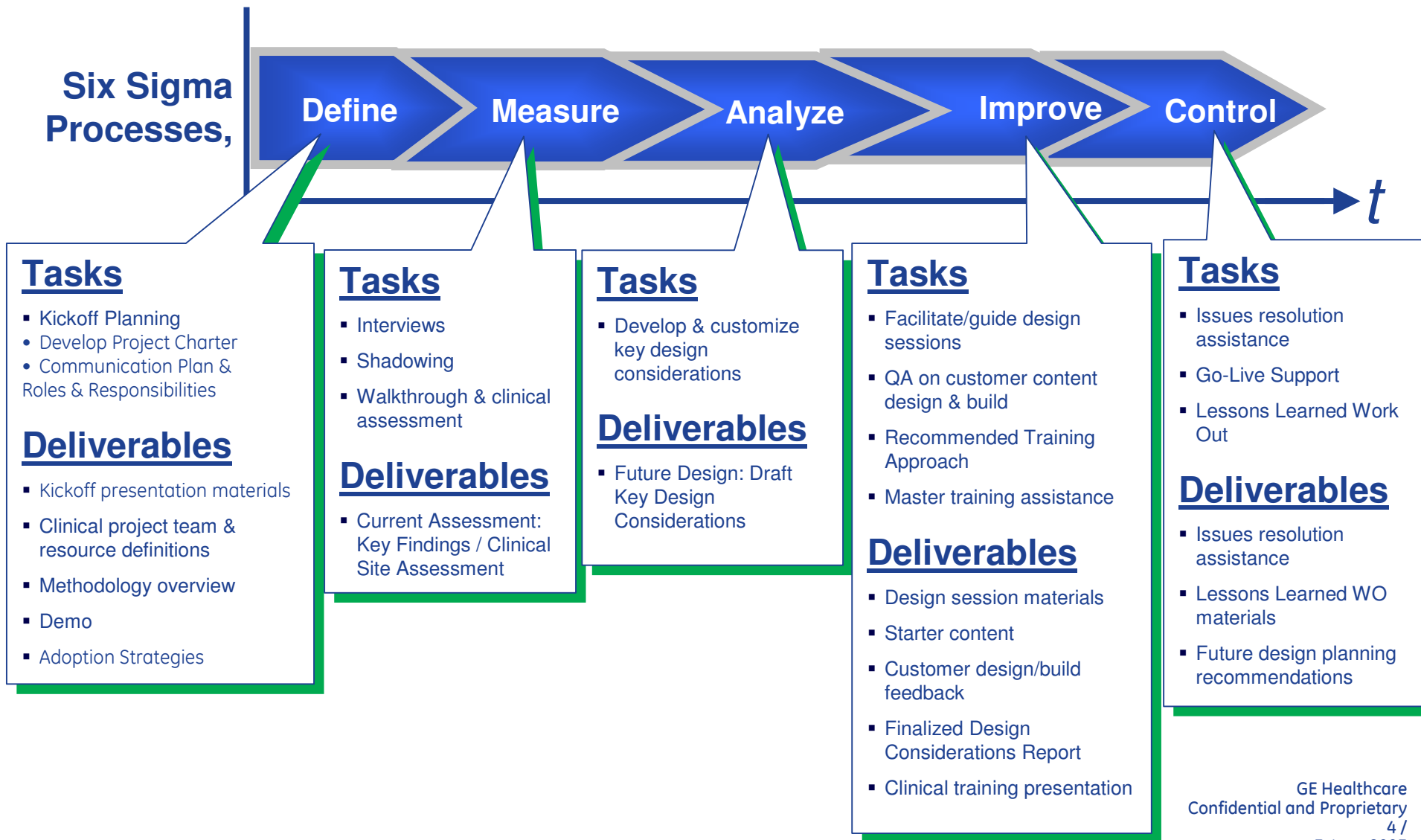
Skills and Systems for Today and Tomorrow: Objectives

- ✓ Verbalize an understanding of workflow assessment and analysis processes in clinical information systems implementation.
- ✓ Describe change management processes and the application in clinical information systems implementation.
- ✓ Understand the importance of a control plan in sustaining change.



Workflow Assessment and Analysis

Implementation Tasks & Deliverables



Define

Tasks

Kickoff Planning

Develop Project Charter

Communication Plan & Roles Responsibilities

Deliverables

Kickoff presentation materials

Clinical project team & resource definitions

Methodology overview

Demo

Adoption Strategies

Identify Project CTQs (Critical to Quality)

- Who are your customers?
- How do we obtain the voice of the customer (VOC)?
- What do they need?
- How can we measure what they need?
 - Surveys, Focus Groups, Interviews
- Goal: to solve the right problem

Kick Off Planning

- Defining the agenda

- What type of project?
 - New information system
 - Deployment of current system but to new service area
 - Deployment of new modules to existing system
- Define the time, topic (include the purpose), attendees and locations
- Validate the agenda is a “fit”

Develop Project Charter

Five Elements:

- Business case
 - Why the project should be done
- Problem and Goal Statement
 - Problem statement and the improvement plan
- Project scope
 - What will be fixed?
- Milestones
 - Key steps and dates
- Roles
 - Who will be involved?

Communication Plan & Roles Responsibilities

- Define team sides
- Define team members
 - PM, Consultant, Clinical Application Specialist, Interface and Installation Engineer, Trainers, Clinicians, Database Administrator, Project Champions
- Define the team members roles for project
- Define length of time team members will be on the project
- Define percent time commitment team members will have to project
- Define who represents the Executive Steering Committee

How we fit into the EHR project team

Client Team

Customer PM

- ✓ Manages project work plan and coordinates all project activities and resource needs
- ✓ Coordinates resource needs and scheduling across departments
- ✓ Leads IT and interfacing needs with core centrality application
- ✓ Ensures desktop PC availability and standardization
- ✓ Communicates status and manages escalation process for issues

Clinical Specialists

- ✓ Site clinical lead for workflow redesign
- ✓ Leads all content design sessions
- ✓ Owns configuration of all content in centrality
- ✓ Performs testing and validation of content w/ design team
- ✓ Migrates content from testing to production

Physician & Nursing Liaison

- ✓ Provides project leadership and buy-in
- ✓ Ensures the workflow and content meets physician and nurse
- ✓ Participates in select design team meetings as appropriate
- ✓ Ensures completion of training of MD / Nursing teams

Training Leads/Super Users

- ✓ Develops training plan and training materials
- ✓ Conducts/delivers training to end-users
- ✓ Assists in validation of the content configuration

Interface Engineer

- ✓ Work with GEHC Interface team to define and implement:
- ✓ Responsible for ongoing maintenance / support of interfaces

Network Engineer

- ✓ Responsible for Servers / Operational Procedures
- ✓ Coordinates client workstation installations

Database Administrator

- ✓ Responsible for DBA tasks; backup, restore, copy

Vendor Team

PM

- ✓ Manages project work plan and coordinates all GEHC project activities and resource needs
- ✓ Coordinates GEHC resource needs and scheduling across departments
- ✓ Leads customer and GEHC technical resources/activities
- ✓ Communicates status and manages escalation process for issues

Clinical Consultant

- ✓ Facilitates and completes current assessments and future design
- ✓ Facilitates and develops Workflow changes
- ✓ Leads customer content design sessions.
- ✓ Drive physician/nursing buy-in

Clinical Applications Specialist

- ✓ Leads configuration training and guides customer Clinical Specialists in configuration of content
- ✓ Conducts Master Training sessions
- ✓ Conducts Administrator Training sessions
- ✓ Provides go-live support

Integration Engineer

- ✓ Leads interface design sessions w/ customer
- ✓ Works w/ customer to implement interfaces
- ✓ Provides customer w/ sample test scenarios
- ✓ Completes data migration

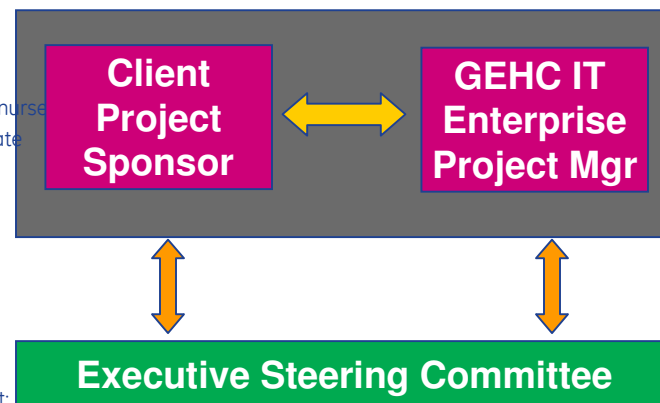
Network Engineer

- ✓ IF necessary – can work w/ customer to define network specifications.

Installation Engineer

- ✓ Installs server hardware and application software

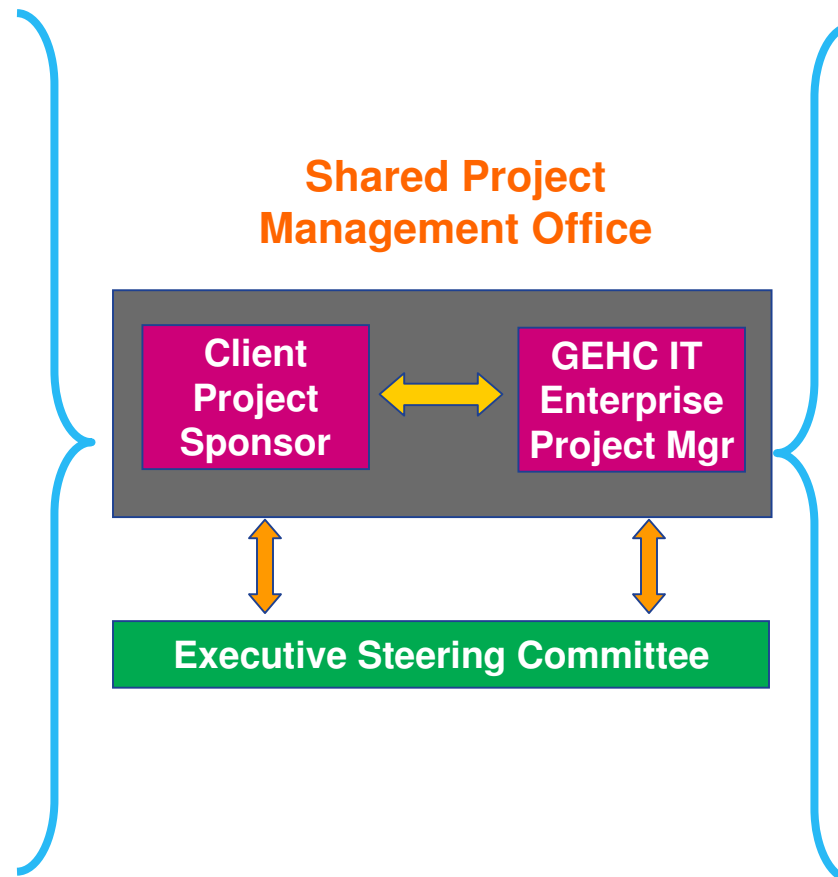
Shared Project Management Office



Long Term Who Sustains the Project

Clinician Team

IT Team



Demo

- Evaluate if a demo of the system/modules need to be reviewed prior to the kickoff meeting
 - Determine what modules?
 - Determine who will see the demo
 - Keep it high level

Adoption Strategies

- Grand Rounds

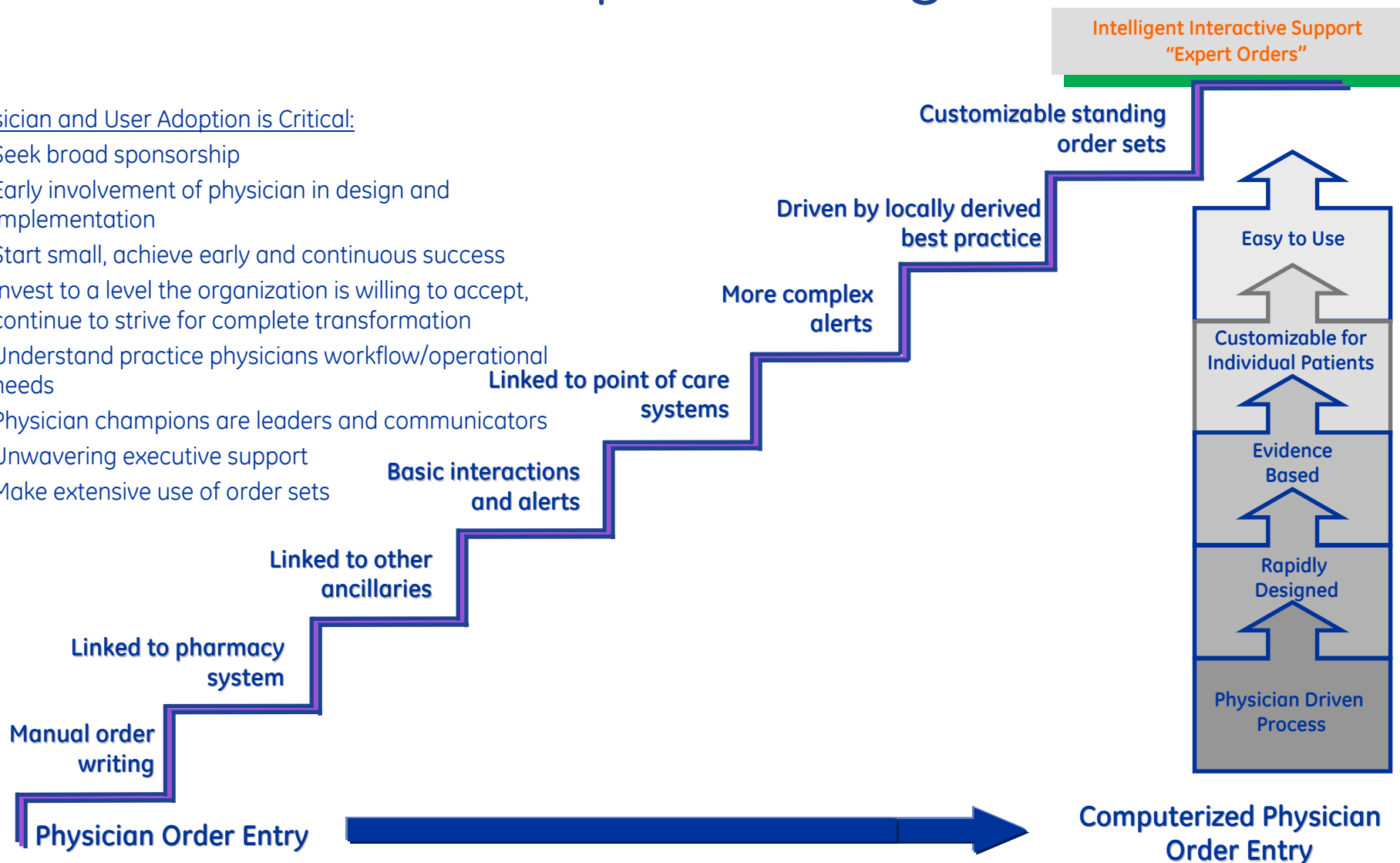
- Purpose of the project
- Modules being utilized by users
- Phase of the project and Project Updates
- Other system users

- Identifying Champion

Engaging physicians early is a major success factor in implementing a CIS

Physician and User Adoption is Critical:

- Seek broad sponsorship
- Early involvement of physician in design and implementation
- Start small, achieve early and continuous success
- Invest to a level the organization is willing to accept, continue to strive for complete transformation
- Understand practice physicians workflow/operational needs
- Physician champions are leaders and communicators
- Unwavering executive support
- Make extensive use of order sets



Define Workflow Assessment

- Identify Project CTQs (Critical to Quality)
- Develop Team Charter
- Communication Plan & Roles & Responsibilities

Measure



Tasks

Interviews

Shadowing

Walkthrough & Clinical Assessment

Deliverables

Current Assessment: Key Findings / Clinical Site Assessment

Defining Current State Analysis/Future State Analysis

- Assessing the clinical workflow
 - Onsite Assessment vs remote
 - Pre-assessment information
 - Key interviews
 - Direct/Indirect workflow observation
 - Gathering paper documentation tools used during the current state

Developing Key Questions

- Identify key questions during assessment
 - Track for later discussions
- Examples of key questions:
 - Can the CIS support this functionality?
 - How will the information presented on paper fit into the new system?
 - Is there a module within the new system that can be utilized to support what is currently done?

Deliverable of Assessment/ Key Findings

Tools:

- Diagrams of current/future state
- Key decision document
 - Present findings using recommendations to:
 - Create a shared vision of the system implementation by teams
 - Guide clinical design and build sessions
 - Aid with educational tools during project development
- Review documentation with customer
 - Validate assessment findings
 - Review key decision options
 - Iterative process

Case Study:

Workflow Assessment and Analysis

Background:

- ✓ 450-bed hospital in MidWest
- ✓ Implemented IT systems to help improve patient flow and safety
- ✓ Phased roll out of Product module approach; included Inpatient then Ambulatory
- ✓ 15-month engagement
- ✓ Design and Measure phase: Deliverables and tasks included: review of paper documentation, mock-up of screen design, demo's of system, hand off of deliverables was based on phased approach

Change Management

Change Management Process

Includes the requesting, determining the ability, planning, implementing and evaluation of change to a system.

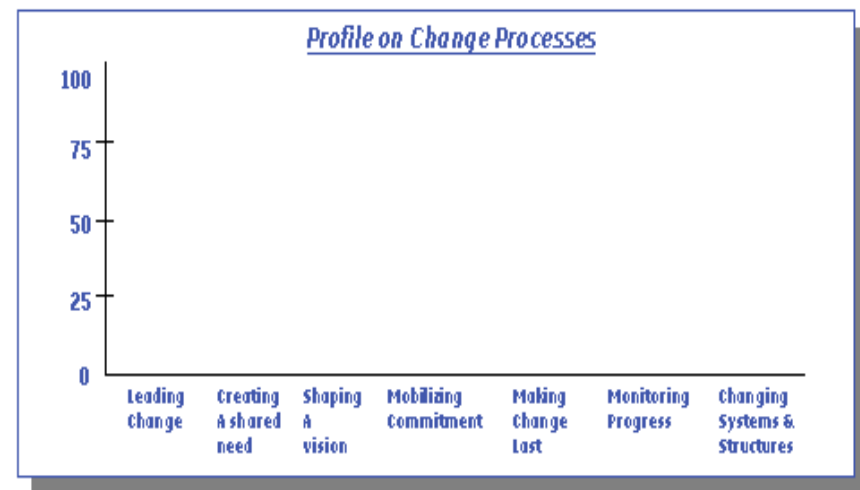
Goals:

- Support the process of change
- Allow staged documentation of changes

Change Management Profile

- ✓ Helps team assess current approaches
 - ✓ Helps chart a new course for change initiative
 - ✓ Planning tool to guide work
 - ✓ Opportunity to deal with organizations current beliefs
1. Distribute the profile and ask each team member to reflect on current state
 2. Collate responses and discuss to arrive at consensus
 3. Use chart for Gap Analysis
 4. Use chart to develop a plan to focus on the change processes

The CAP Profile chart is shown below:



Leading Change

Having a champion who backs the change; who has visible, active public dedication and support of change.

Leading Change Personal Contract

- ✓ List those things needed to drive change
 - ✓ Commitment to change
1. Individually complete the chart
 2. Check with the team
 3. Discuss and resolve differences

Areas to Drive Change	
Time	▪ ▪ ▪
Energy & Passion	▪ ▪ ▪
Focus & Agenda	▪ ▪ ▪

Creating a Shared Need

The reason to change, whether driven by threat or opportunity, is instilled within the organization and widely shared through data, demonstration or demand. The necessity for change must exceed its resistance.

Threat vs. Opportunity and 3D Matrix

Threat vs. Opportunity Matrix

- ✓ Build a case for change
- 1. Pick which of the 4 quadrants fits to need for change
- 2. Write a sentence describing need for change speaking to the 4 quadrants
- 3. Team debates and discusses each statement to create one that encompasses each effort

	<i>Threat if we do not change</i>	<i>Opportunity if we do change</i>
<i>Short Term</i>	1	3
<i>Long Term</i>	2	4

3 D's Matrix – Demand, Data/ Diagnosis, Demonstration

- ✓ Add facts to bolster need for change

1. Review need for change from Threat vs Opportunity
2. Fill in the 3 D matrix with data, facts, situations
3. Validate data from stakeholders outside the team

Types of Proof	Have now:	Need to get:
Data/ Facts: <ul style="list-style-type: none"> ▪ Numbers / Trends / Statistics ▪ Graphs / Financials ▪ Benchmark / Competitive data 	H _____ L	H _____ L
Demonstrate: <ul style="list-style-type: none"> ▪ Best Practices ▪ Visiting other Organizations / Panels/ Pilots/ Testimonials 	H _____ L	H _____ L
Demand: <ul style="list-style-type: none"> ▪ Dynamic Leadership (Setting High Standards/ Accountability) ▪ Customers / Suppliers / Competition (Int / Ext) 	H _____ L	H _____ L

Shaping a Vision

The desired outcome of change is clear, genuine, widely understood and shared; the vision is shaped in behavioral conditions.

Shaping a Vision

Key Phrases Exercise

✓ Used to involve the entire team and capture individual perspectives

1. Individually write down key phrases that capture the essence of the team

2. Collate into a Vision Statement

3. Test on customers and employees

4. Modify as needed

Shaping a Vision Elevator Speech

- ✓ Be able to clearly and simply state the need for change to rally support
- ✓ 90-120 second pitch

1. Team reviews project scope/team mission, need for change and vision
2. Team members form their own version of the speech
3. Team members pair up and deliver pitch and receive feedback

1.	A "reality check" to ensure that team members see the project the same way.
2.	To ensure that the team members spread a unified consistent message.
	<i>"Here's what our project is about..."</i> (Charter, Project Definition Tools)
	<i>"Here's why it's important to do..."</i> (Shared Need Tools)
	<i>"Here's what success will look like ..."</i> Shaping a Vision Tools + Milestones)
	<i>"Here's what we need from you..."</i> (Responsibilities, Commitments, Project Plans)
	<i>"Here's what you can count on from me .."</i> (Commitments, Action, Follow-up)
	(Output may change by stakeholder - one size does not fit all)

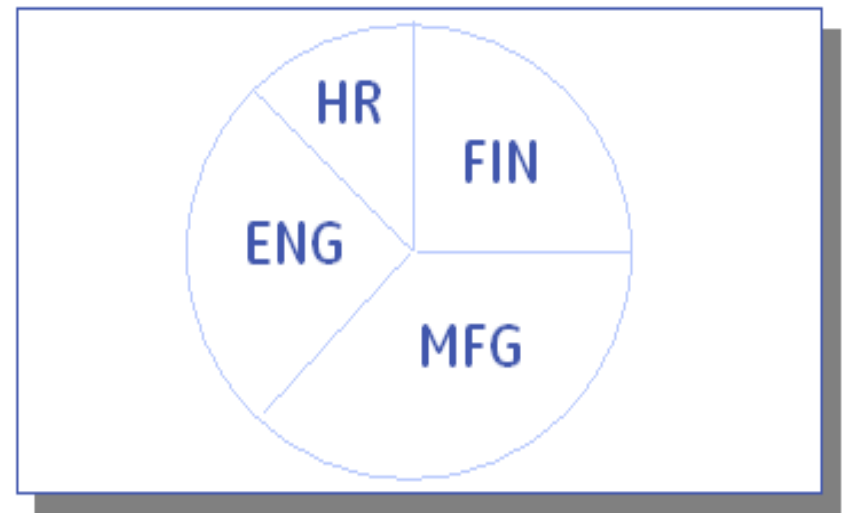
Mobilizing Commitment

There is a strong commitment from constituents to invest in the change, make it work, and demand and receive management attention; Constituents agree to change their own actions and behaviors to support the change.

Mobilizing Commitment

Key Constituents Map

- ✓ Identify constituents impacted by change
 - ✓ Broaden team perspective
1. List the group impacted by change
 2. Cluster like groups
 3. Create Pie chart
 4. Discuss with group until consensus



Mobilizing Commitment

Stakeholder Analysis for Change

- ✓ Assists team with Who are the stakeholders? and Where do they stand?
- ✓ Helps team discover how to influence relationships and effective strategies

1. Identify Key Stakeholders

2. List each stakeholder and discuss where they are currently in regard to the change initiative

<u>Stakeholder Analysis for Change</u>					
Names	Strongly Against	Moderately Against	Neutral	Moderately Supportive	Strongly Supportive

Making Change Last

Once change is started, it endures, and learnings are transferred throughout the organization. Change is incorporated with other key initiatives; early wins are encouraged to build momentum for the change.

Making Change Last

Making Change Last Checklist

✓ Helps team assess items required to make change last

✓ Team answers each question and plans actions needed to make change last

1. Divide into groups and each group answer one question, rotate through rest of questions

2. Think of best practices and identify

3. Brainstorm on how best practices can be used to Make Change Last

Questions to ask:

Early Successes – Have we identified any quick wins to help build momentum?

Commitment - Do the actions of the team members demonstrate long term commitment?

Excitement - Does the team show enthusiasm for the change?

Resources - Are resources still available to complete the change?

Integration - Have the lessons learned been passed on and adapted throughout the rest of the organization?

Learn from Experience - As the organization has changed? Has our plan reflected this?

Monitoring Progress

Progress is real; targets are set and realized; indicators established to assure accountability.

Monitoring Progress

Monitoring Progress Assessment

- ✓ Assessment to track change effort
- ✓ Laying foundation for monitoring progress begins early and is done throughout

1. Team reviews the questions

2. Define actions to ensure tracking of progress and sharing results

- > Have we clearly stated our objectives in measurable terms?
- > Have we translated objectives into observable behaviors?
- > Have we set milestones that we all understand and agree to?
- > Are expected results tied to external and internal goals?
- > Have we ensured that outcomes will be evident to stakeholders?
- > Are individuals and teams accountable for results?
- > Do we know which measures will show progress toward the goal?
- > Have we established new ways to gather data?
- > Do we have accurate and timely baseline data to work with?

Changing Systems and Structures

Making sure that the management practices (Staffing, Development, Rewards, Measures, Communication, Organizational Design and Information Technology Systems) are used to complete and support change

Changing Systems and Structures

Systems & Structures Assessment

- ✓ Helps team think of current practices in Systems and Structures that might reinforce behavior
- ✓ Provides start point for action plan to maintain helpful practices and change those that hinder

1. Review the Vision statement and input in the tool
2. Brainstorm each side of the chart for systems and structures
3. Agree on enablers and restrainers
4. Develop and action plan to modify and leverage Systems and Structures

Helping	Hindering	Actions			
Helping/Hindering		What	Who	By When	Profile-% Complete
Staffing					
Development					
Measurements					
Rewards					
Communication					
Organization Design					
IT Systems					
Resource Allocation					
Other					

Case Study: Change Management

Background:

- ✓ 485-bed academic medical center in the Southeast
- ✓ Implemented IT system in 30 Room OR to improve anesthesia documentation and patient care
- ✓ Implemented process improvements to intra-operative scheduling and anesthesia documentation
- ✓ 14-month implementation
- ✓ Change Management Phase: Utilized Change managements tools including Change management profile, personal contract with leadership, elevator speech and 3 D's matrix to improve project impact and facilitate change.

Control Plan

Why Control Plans Are Important:

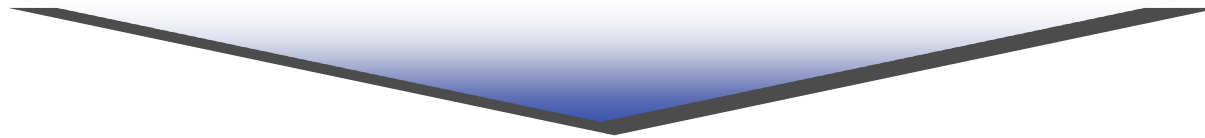
Process Redesign, in the context of an IT implementation, is a significant undertaking



Organizations are often rooted in their old processes



Change is difficult and requires specific attention to acceptance & accountability



Sustaining change takes time and attention, until the new workflow is engrained in the culture of the organization

Control plans provide the structure to sustain change

Key Elements of a Control Plan:

- ✓ # 1: Attention, visibility, & commitment to sustaining change by:
 - ✓ Project leadership
 - ✓ Executive Sponsor(s)
- ✓ A regular meeting that begins daily, and phases to less frequent intensity as the situation warrants
- ✓ A prescriptive methodology for data/metrics collection, and organization of metrics onto a dashboard
 - ✓ Chosen metrics are 2 tiered:
 - ✓ Project-level: those that most directly measure the impact of change (eg. cycle time reduction, % compliance to a new workflow change, % discharges that are pre-scheduled, etc) ... measured daily
 - ✓ Organization-level: high-level metrics that measure enterprise-wide success (eg. diversions, Discharges before noon, revenue/margin impact, ROI, etc)
- ✓ A standing agenda for the control meetings that covers:
 - ✓ Metrics & dashboard review
 - ✓ Data deep dives as appropriate
 - ✓ Open issues review & updates
 - ✓ Action items

Collectively, these elements create a control plan for ensuring sustainable gains

Case Study:

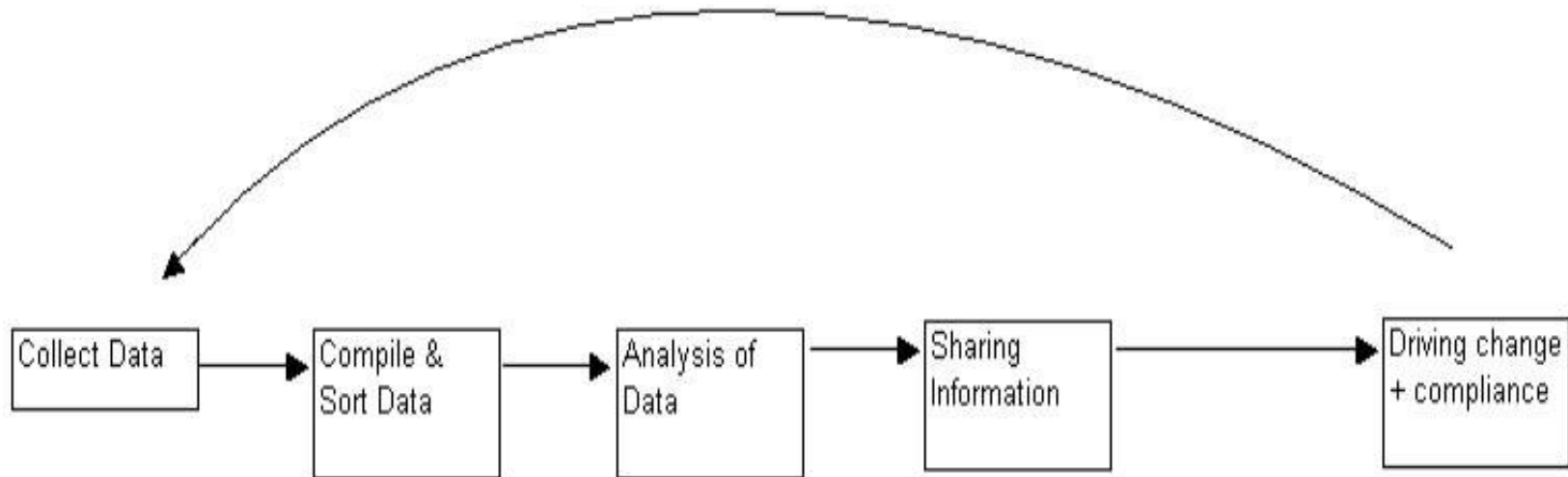
Sustaining Change Through Implementation of a Control Plan

Background:

- ✓ 600-bed hospital in Southeast
- ✓ Implemented IT systems to help improve patient flow
- ✓ Implemented process improvements to facilitate admission, discharge, and bed turnover; 7 project-level metrics chosen to measure workflow change impact
- ✓ 5-month engagement
- ✓ Control phase: Daily control meetings for 5 weeks, then reducing frequency for next 5 weeks; currently meeting weekly to review progress, next steps

Case Study: Sample Control Rhythm

Daily Metrics Rhythm

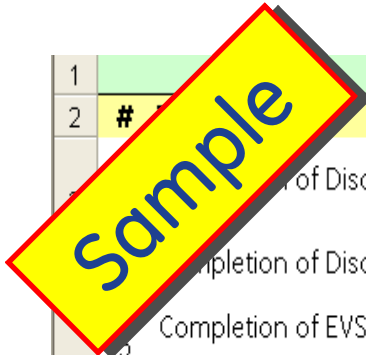


<u>Scope:</u>	By Unit	By Unit + collective	By Unit + collective	<u>Unit data:</u> to Unit Leaders <u>Collective data:</u> Implementation team	By Unit (Unit leaders, with support from Implementation Team)
<u>Format:</u>	Variable	Excel	Excel	Metrics Dashboard	Variable

Prescribing the daily rhythm provides methodology to control plans

Case Study:

A Detailed Plan for Data Review & Action



		Reporting Rhythm			
#		Who:	Sent to:	How:	Frequency
1	1				
2	2	Person 1	Person 2	Person 2 email address	Daily (M-F), 12pm
3	3	Person 1	Person 2	Person 2 email address	Daily (M-F), 12pm
4	4	Person 2	-	-	Daily (M-F), 12pm
5	5	Person 2	-	-	Daily (M-F), 12pm
6	6	Person 3	Person 2	Person 2 email address	Daily (M-F), 12pm
7	7	Person 2	Unit Directors	TBD	Daily (M-F), 3pm
8	8	Person 2	Implementation Team	Print out & review at status meeting	Daily (M-F), 4pm
9	9	Implementation Team	Dept Leadership	various	Following day

Step-by-step instructions lets everyone know their role in the process

Case Study:

Sample Dashboard & Run Chart

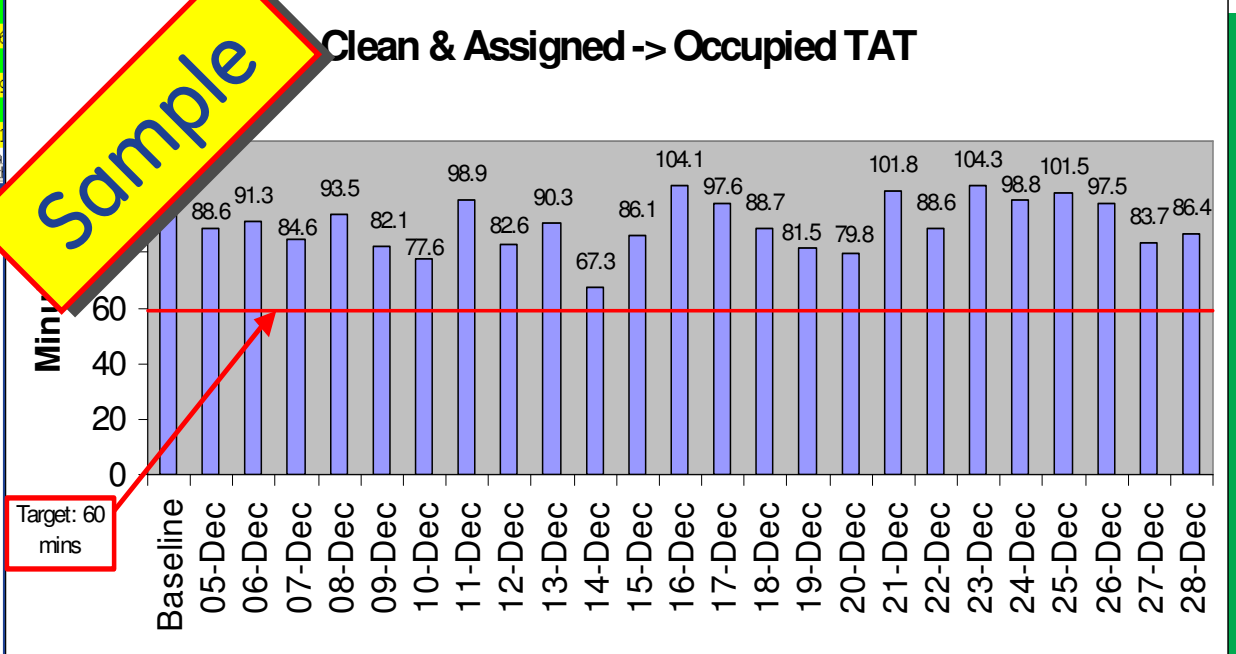
- ✓ Pull strategies working ... shaved approx 20 mins off baseline
- ✓ Several units already meeting target
- ✓ Challenge is to sustain change, avoid weekend & holiday bumps

Clean & Assigned- Occupied		Baseline:	109	Start Pt	Time Room is Assigned & Clean in TT						
		Target:	60	End Pt	Time Room is Occupied by next patient						
Unit	Dec 7th	Dec 8th	Dec 9th	Dec 10th	Dec 11th	Dec 12th	Dec 13th	Dec 14th	Dec 15th	Dec 16th	Dec 17th
9 Main	69	158	77	107	133	85	84	23	60	119	59
8 Main	18	171	95	111	126	86	103	77	104	0	344
6 Main	94	102	94	100	78	77	85	66	125	110	78
5 Main	195	67	48	84	113	61	65	63	73	170	92
5 E	87	71	66	42	51	68	70	65	71	79	42
			3		44		81				
	112	101	59	90	68	112	47	52	82	82	50
98	122	96	106	144	75	98	50	101	56	88	103
61	63	62	114	168	93	109	125	82	91	78	73
78	102	96	81	95	122	135	112	246	84	142	98
511											
3 East	89	54	142	82	38	11	160	103	70	111	119
FBC											
COU		115	121	85	185		100	97	93		
NICU		49	56		46		79				
MSICU		136	1	15							
STICU		70			43		89				
General PEDS		99	53	45	130		63	83			
PICU		63	2	73			4				
Overall	88.6364	91.25	84.6	93.5	82.0667	77.6154	98.8571				
% Change	-1.9%	-1.6%	-2.7%	-1.4%	-2.5%	-9.9%					

Sample

Sample

Run charts illustrate patterns of progress ... detailed dashboards provide direction for drill-down



Control Metrics Summary:

Metric	Baseline	Target	Re-Measure*	Change (%)
EVS Notification	5%	80%	41%	36%
EVS Turn Time	<u>STAT</u> : 58 mins <u>Next</u> : 91 mins <u>Dirty</u> : 118 mins <u>Adjustments</u> : 40%	<u>STAT</u> : 55 mins <u>Next</u> : 80 mins <u>Dirty</u> : 110 mins	<u>STAT</u> : 52.6 mins <u>Next</u> : 68.2 mins <u>Dirty</u> : 89.7 mins <u>Adjustments</u> : 25%	<u>STAT</u> : -5.4 mins (-9%) <u>Next</u> : -22.8 mins (-25%) <u>Dirty</u> : -28.3 mins (-24%) <u>Adjust</u> : -15% (-38%)
Clean/Assigned -> Occupied	109 mins	60 mins	89.9 mins	-19.1 mins (-18%)
Next Day D/C's Identified	N/A	TBD	54%	N/A
D/C Cycle Time	175 mins	140 mins	158 mins	-17 mins (-9.7%)
D/C's completed before 12 pm	18%	30%	21%	3% (16.7%)
Scheduled pre-noon d/c's completed	N/A	50%	52%	N/A

Sample

Summary tables provide at-a-glance performance metrics

Case Study: Sample Issues Tracker

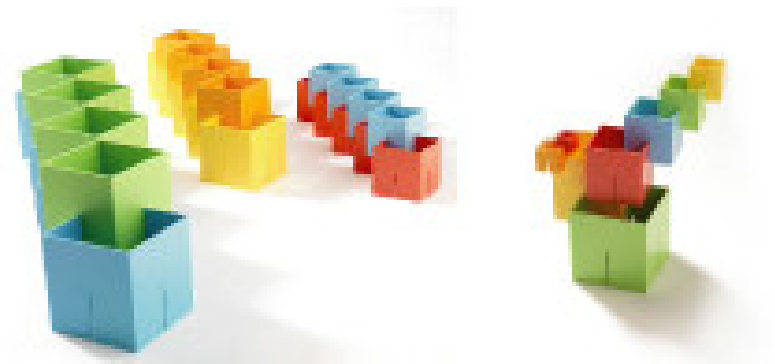
	A	B	C	D	E	F	G	H							
1	Enterprise Issues Tracker														
2	▼	Category	▼	Issue	▼	Description	▼	Owner	▼	Due date	▼	Status	▼	Notes	▼
3															
4															
5															

Goal: Drive every issue to closure!

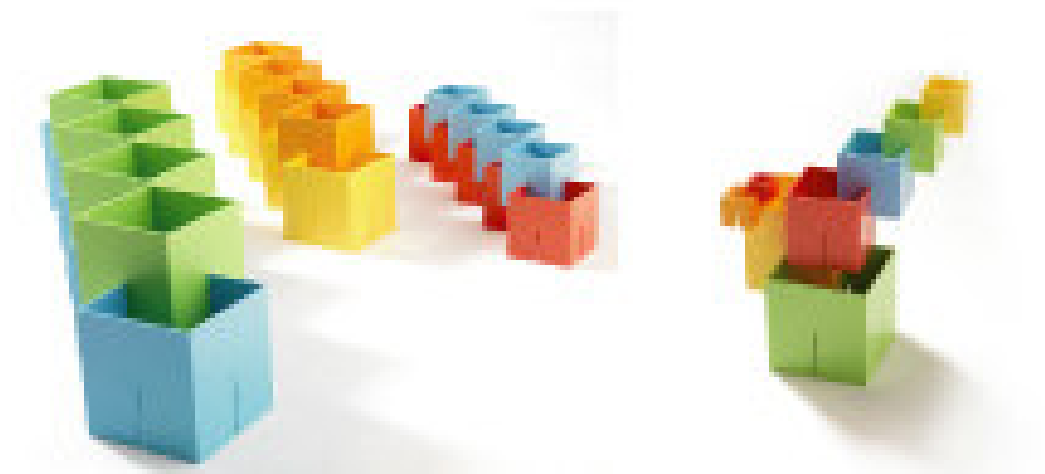
Closing Remarks

Skills and Systems for Today and Tomorrow

- ✓ Workflow Assessment and Analysis
- ✓ Change Management
- ✓ Control Plan



Questions?



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Change Management Process

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