

Quality Improvement: Common tools in project design

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Upon completion of this session, the participant will:

- Describe the fundamental concepts of quality improvement.
- Identify the models for a successful quality improvement project.
- Utilize basic quality improvement tools.
- Distinguish quality improvement and research.
- Articulate the process for QI study approvals through R&D and IRB

Objectives

Fundamental concepts of quality improvement

- History of Healthcare Quality
- Carilion Key Performance Indicators and Focus Areas

Models:

- Six Sigma, LEAN, Kaisen
- PDCA-PDSA-DMAIC

Basic Quality Improvement Tools

The relationship of Quality Improvement and Research

Carilion Approval process

- R&D
- IRB

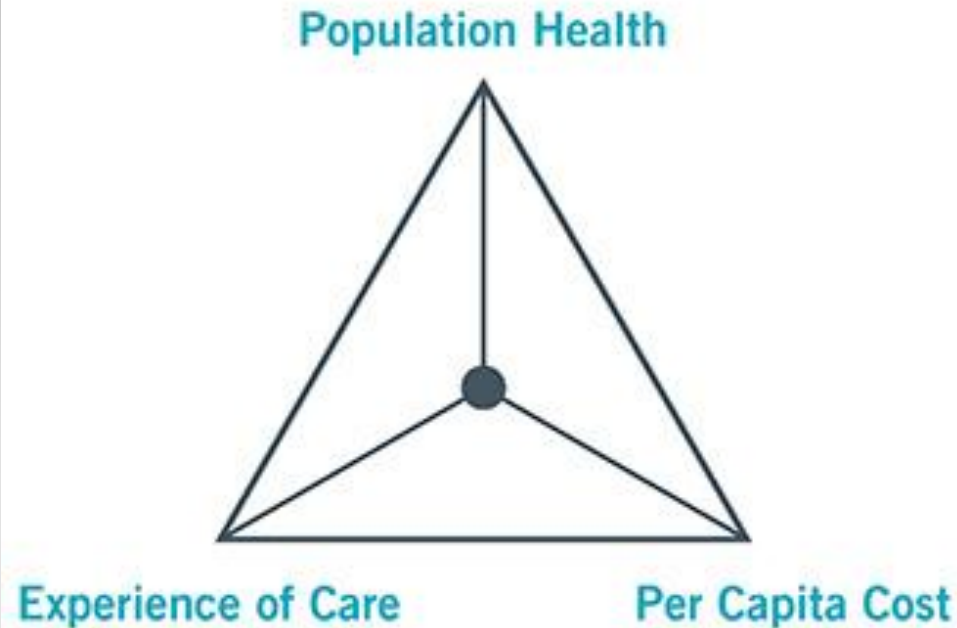
Agenda



Fundamental Concepts

History of Healthcare Quality

The IHI Triple Aim



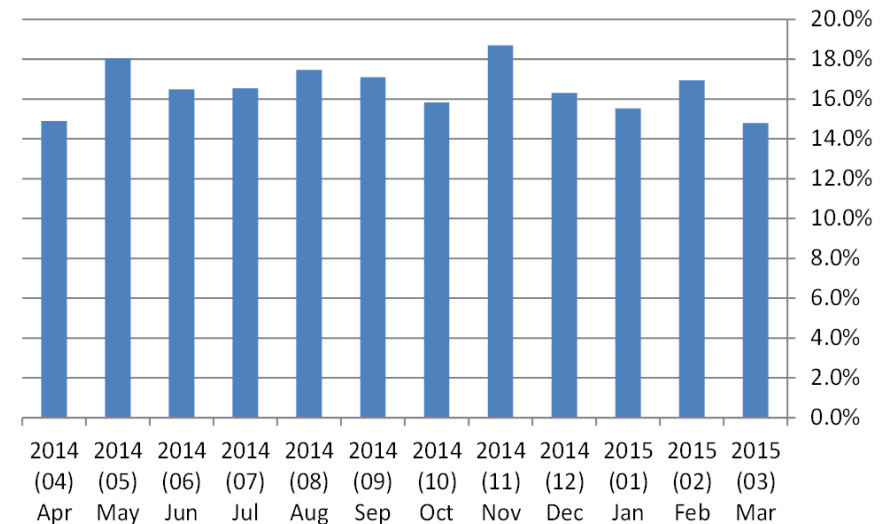
Fundamental Concepts

Carilion Key Performance Indicators and Focus Areas

ALL Adult Units SUMMARY

		Current Month		Previous		Rolling 12 Months				
UNIT	Description	Performance against Previous Month		Performance against Rolling 12		Performance against the Target		Measure	Section	GOAL
Total	% of Internal transfers that Leave the unit, taking greater than 60Min	45%	▲	41%	▼	44%	▲	M3	Internal Transfers	Reduce
Total	% of Internal transfers that come to the unit, taking greater than 60Min	45%	▲	41%	▼	44%	▲	M4	Internal Transfers	Reduce
Total	% of internal transfers that are posted After 10am	55%	▲	44%	▲	41%	▲	M5	Internal Transfers	Reduce
Total	% of patients who's Duration from Written D/C order to EXIT is > 3 Hours	52%	▲	43%	▼	45%	▲	M7	Discharges	Reduce
Total	% of patients who are discharged by Noon	11%	▼	15%	▼	17%	▼	M8	Discharges	Increase

Discharge Before Noon Trending



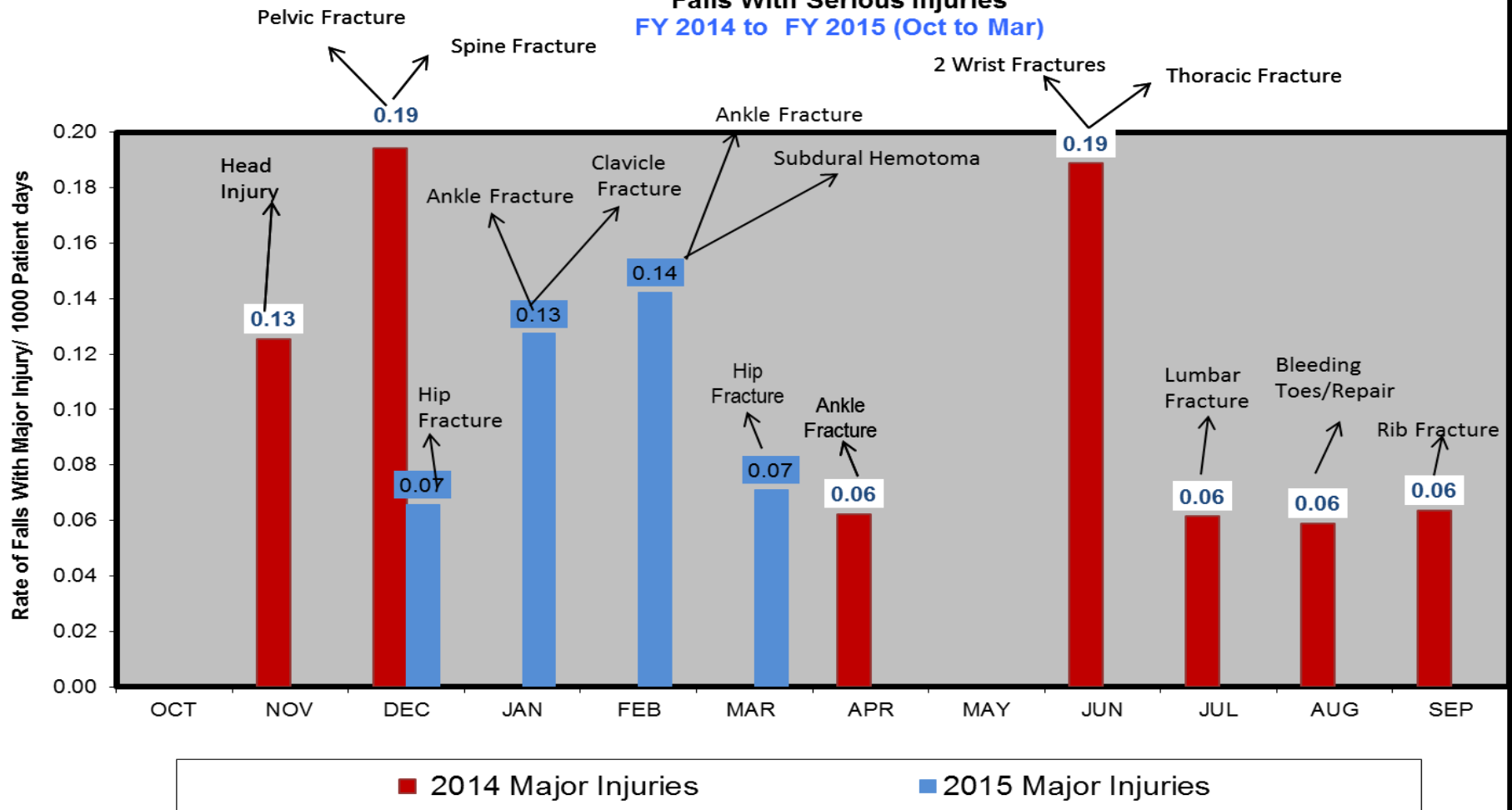
Throughput

- Falls with Serious Injury
- HAI
 - CAUTI
 - CLABSI
 - VAP
- VTE

Quality and Safety

Falls with Serious Injury

Carilion Reported Patient Falls TO NDNQI
Falls With Serious Injuries
FY 2014 to FY 2015 (Oct to Mar)



Hospital Acquired Infections (HAIs)

NUMBER OF REPORTED HAI's			
	CAUTI	CLABSI	VAP
JAN 14	12	4	0
FEB 14	13	4	0
MAR 14	19	2	1
APR 14	16	5	2
MAY 14	13	3	1
JUN 14	19	5	1
JUL 14	16	4	2
AUG 14	7	3	4
SEP 14	13	2	0
OCT 14	9	2	1
NOV 14	7	0	0
DEC 14	12	2	1
TOTAL 2014	156	36	13
JAN 15	11	0	1
FEB 15	7	3	0
MAR 15	8	3	3
TOTAL 2015 PTD	26	6	4

NOTE: 2 of the reported CLABSI 's were in NICU

Venous Thromboembolism (VTE)

Goal:

- Prevent Hospital Acquired Potentially Preventable VTE

Outcome:

- 10 (14%) of the 70 VTEs identified from January to March 2015 were determined to be potentially preventable
 - 11% were related to compliance with SCD use (SCDs not documented, documented off, patient refused)
 - 3% were related to omitted doses of anticoagulants
 - 0% did not have an anticoagulant ordered
 - 0% were related to RN/MD communication

Interventions:

- CNS monitoring VTE prophylaxis orders, implementation of orders and interventions concurrently (ongoing).
- Analysis of all VTEs with deep dives on potentially preventable VTEs .
- New SCD pumps with compliance meter function were implemented in January 2015. Documentation of compliance to begin pending Epic optimization.
- Education for all nursing staff in development.

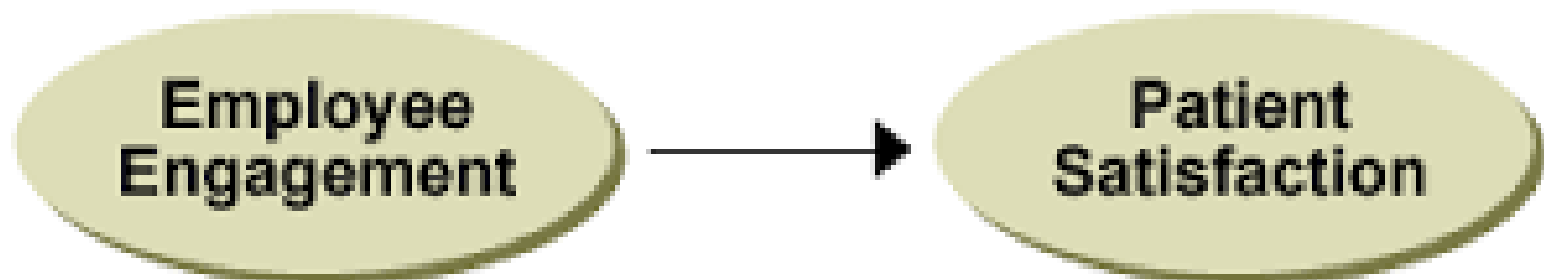


CARILIONCLINIC

Benchmark	Carilion Medical Center Roanoke, HCAHPS Compliance 2015(MAR)						
50 Percentile	82.19	69.75	74.98	66.78	71.20	87.21	
75 Percentile	86.87	78.06	79.45	72.60	79.03	89.90	
Top 10 Percentile	90.61	84.71	83.03	77.26	85.29	92.53	
FY 2017 VBP Phone Adjusted Thresholds: <i>P4P</i>	Communication with Nurses	Responsiveness of Staff	Pain Management	Communication about Medications	Hospital Environment	Discharge Information	Care Transition
MAR 15	85.38	72.89	73.33	66.71	68.96	91.00	59.08
FEB 15	86.75	80.08	66.15	65.43	71.74	86.11	63.61
JAN 15	77.66	81.81	75.80	73.77	76.83	85.30	58.32
DEC 14	81.72	71.15	73.30	64.15	58.88	92.03	55.12
NOV 14	84.40	79.87	79.13	61.87	64.93	90.30	52.82
OCT 14	80.97	81.12	79.13	73.77	65.81	88.54	65.00
SEP 14	80.43	78.40	69.48	78.53	66.05	83.84	60.31
AUG 14	80.43	78.28	71.89	75.76	64.33	90.98	58.32
JUL 14	70.18	71.26	64.75	63.04	70.42	86.03	42.30
JUN 14	81.54	63.89	57.16	68.73	59.48	88.67	50.90
MAY 14	79.90	62.57	70.80	57.70	57.48	87.63	55.16
APR 14	84.13	69.13	81.91	76.78	74.27	89.88	77.47
MAR 14	77.13	65.91	69.48	53.96	58.55	78.16	53.26
FEB 14	80.43	89.23	76.57	70.20	64.75	87.09	47.38
JAN 14	74.88	57.49	42.68	51.45	45.58	86.11	47.63

Patient Experience

Is there a relationship between employee engagement and patient satisfaction?



Employee Engagement

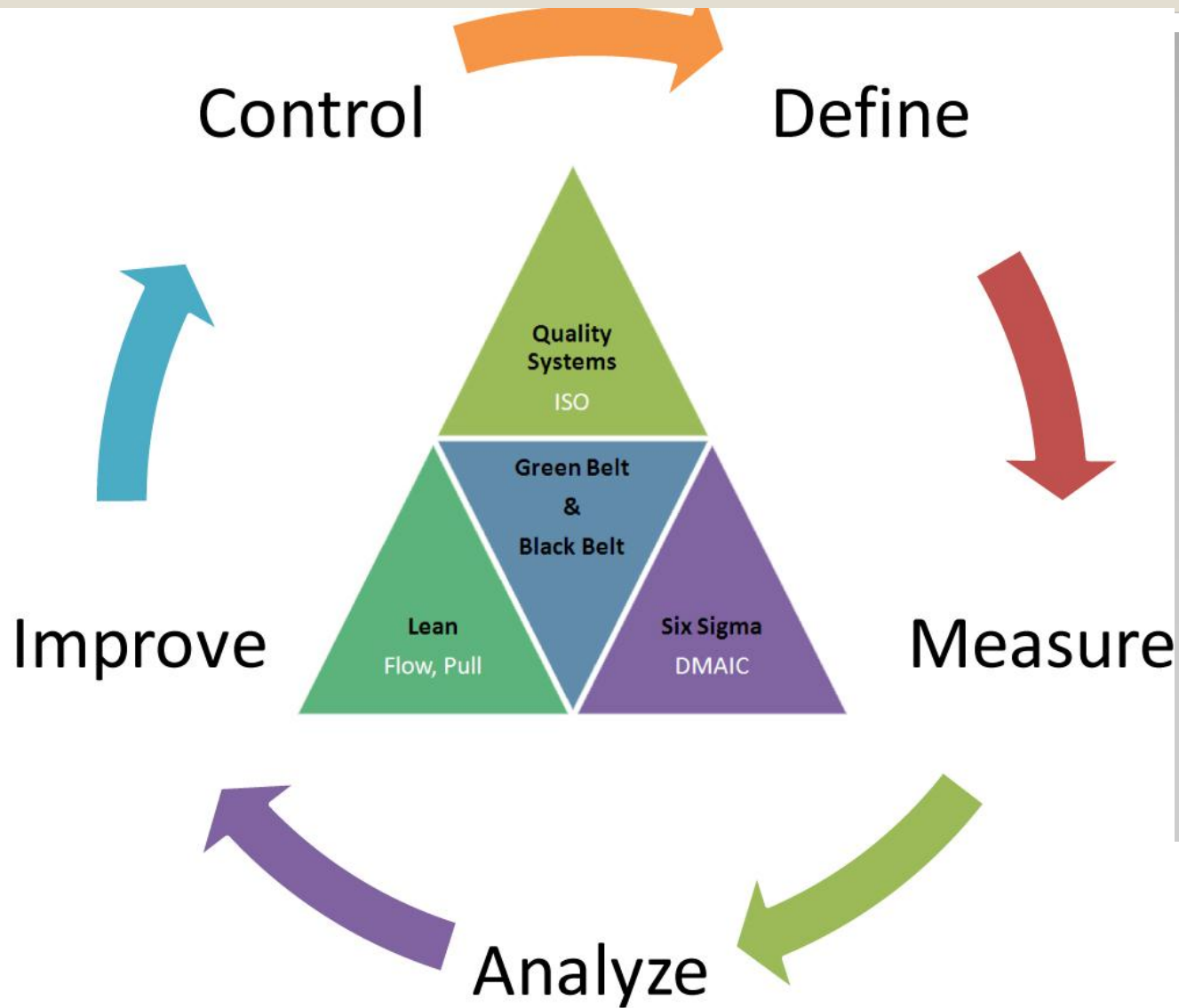


Key Steps for Basic QI

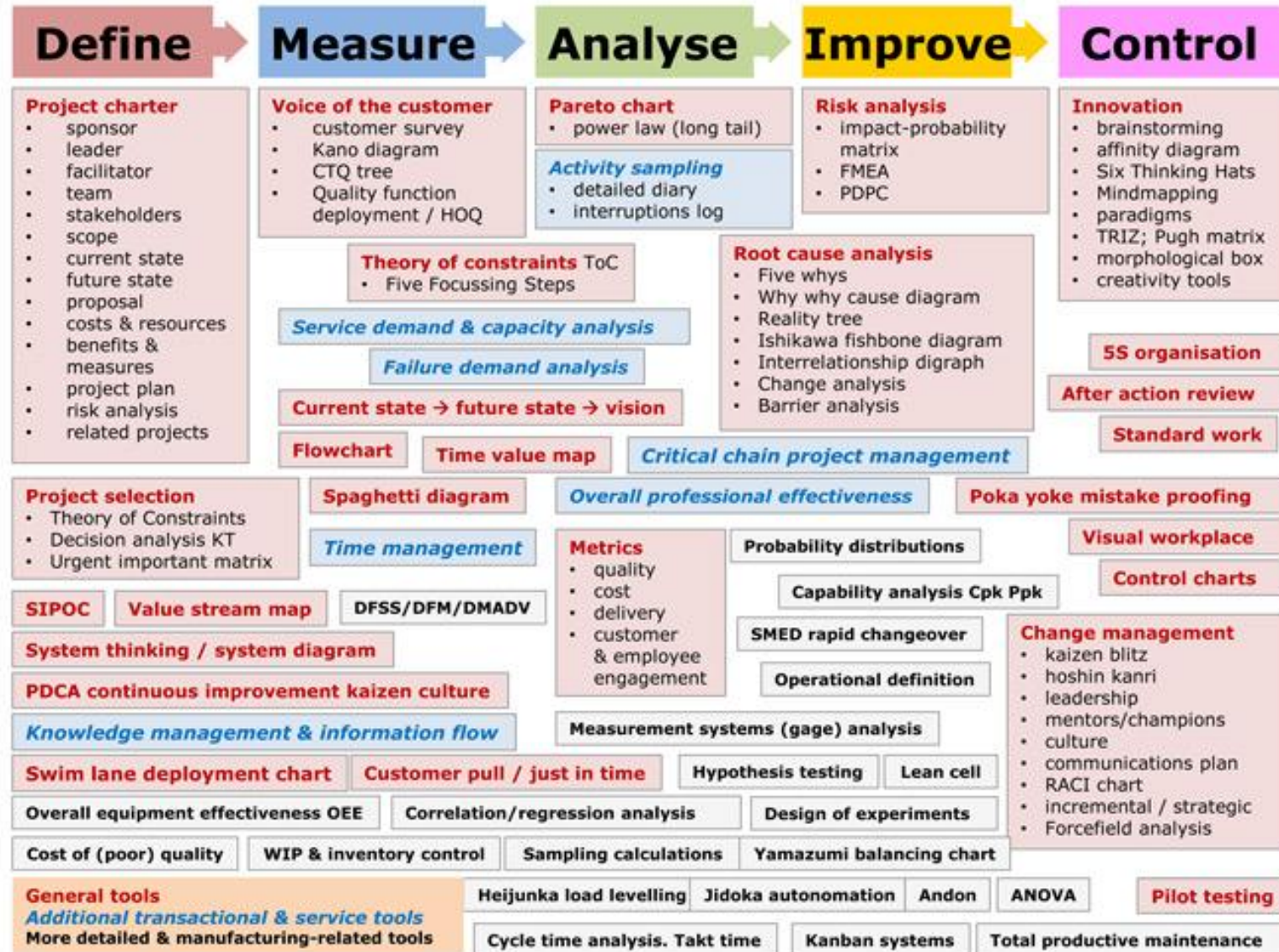
Models for Quality Improvement



PDCA and PDSA



Lean Six Sigma Tools



DMAIC



Continuous Improvement (Kaizen)



Kaizen



The Relationship of QI and Research

If you answer yes to one of these questions, then the project <u>is likely</u> to be research. Please complete the next section and Part II and submit this application.	YES	NO
Will the project seek to test interventions that are beyond current science and experience, such as new treatments and/or does the project involve care practices, interventions, or treatments that are not standard (neither consensus-based, nor evidence-based) ?		
Does your project utilize test subjects for new devices, products, drugs or materials?		
If you answer yes to one of these questions, then the project <u>is likely</u> QA/QI. Complete the project checklist section to determine if your project has any qualities that might make it research.	YES	NO
Does your project involve only service surveys issued or completed by Carilion patients, students or staff for the intent and purpose of improving services and programs of Carilion or for developing new services or programs?		
Is the goal of this project to implement a new hospital process founded upon evidence-based practice from current literature?		

IS it QA/QI or Research?

	Research	QA/QI
Purpose	To test a hypothesis OR to establish clinical practice standards where none are already accepted/established <input type="checkbox"/>	To assess or improve a process, program, or system OR to improve performance as judged by established/accepted standards <input type="checkbox"/>
Starting Point	To answer a research question or test a hypothesis <input type="checkbox"/>	To improve performance in a specific department/unit or area <input type="checkbox"/>
Background	Identifies a specific deficit in scientific knowledge from the literature <input type="checkbox"/>	Describes the nature and severity of a special local performance gap <input type="checkbox"/>
Methods	<p>Specific protocol defines the intervention, interaction, and use of collected data and may include randomization of individuals to different groups <input type="checkbox"/></p> <p>May use qualitative or quantitative methods to make observations, make comparisons between groups, or generate hypotheses <input type="checkbox"/></p> <p>Statistical methods primarily compare differences between groups or correlate observed differences with a known health condition <input type="checkbox"/></p>	<p>Mechanisms of the intervention may change in response to ongoing feedback <input type="checkbox"/></p> <p>Plan for intervention and analysis includes assessment of the system or process flow <input type="checkbox"/></p> <p>Statistical methods evaluate system level process and outcomes over time or compare data from before implementation of a new process to post-implementation data <input type="checkbox"/></p>

IS it QA/QI or Research? (con't)

	Research	QA/QI
Benefits	Designed to contribute to generalizable knowledge and may or may not benefit subjects	Designed to promptly benefit a local process, program, or system and may or may not benefit patients
Risks/Burdens	May or may not put persons at risk	By design, does not increase risk to persons, with exception of possible privacy or confidentiality concerns
End Point	Answer a research question	Promptly improve a local program/ process/system
Testing/Analysis	Statistically prove or disprove hypothesis	Compare a program/process/system to an established set of standards

IS it QA/QI or Research? (con't)



The Carilion R&D and IRB

- Research Projects Listing:

<http://insidecarilion.org/hubs/office-sponsored-projects/documents/research-projects-listing>

Research & Development Application:

<http://insidecarilion.org/webform/osp-application-conduct-research-or-qaqi-initiatives>

Research and Development

<https://www.carilionclinic.org/institutional-review-board>

Institutional Review Board (IRB)