

A PRACTICAL APPROACH TO AUDIT

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**August 2017
Palm Cove**

WHAT IS AUDIT? RACS

- **A systematic critical analysis of the “Quality” of surgical care**
- **Reviewed by peers**
- **Compared against explicit criteria or recognised standards, performance indicators and outcome parameters**
- **Used to improve surgical practice**
 - **A feedback mechanism to reliably redress problems**

August 2017

AUDIT CRITICAL FEATURES

- **Definition of quality**
- **Explicit criteria**
 - **Recognised standards?**
 - **Performance indicators?**
 - **Outcome parameters?**
 - **Process???**
- **Feedback Mechanism**
 - **How to reliably introduce new process (or a change in practice)**

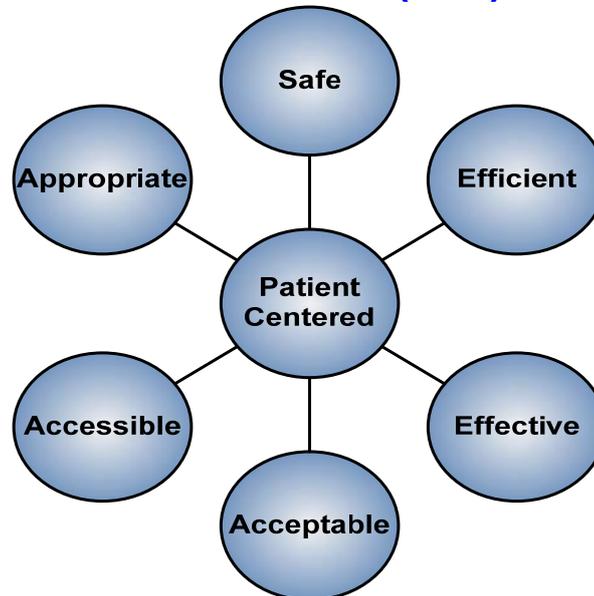
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QUALITY

- **What is it?**
- **Is it possible to “inspect in” quality?**

August 2017

Domains of Quality Institute of Medicine (IOM) 2000



DOES AUDIT RELIABLY IMPROVE QUALITY? ASSUMPTIONS

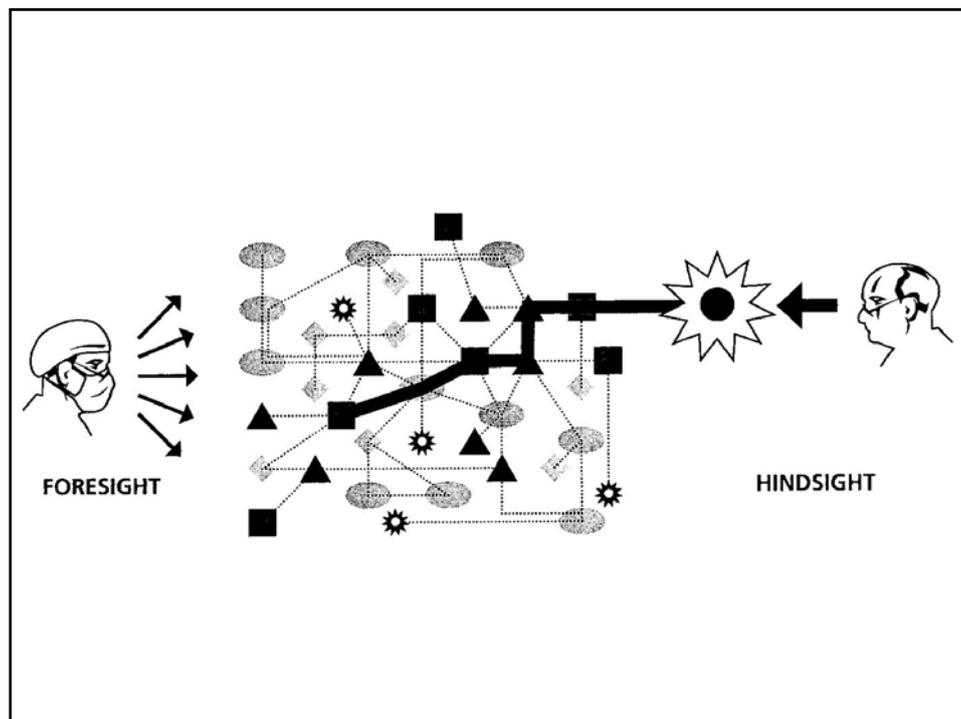
- All (or most) poor quality processes lead to detectable adverse events (outcome)
- The adverse events are reliably tracked to the root cause
- The adverse events cover the domains of quality
- The prescribed standards are agreed and explicit
- Once a defective process is identified it is corrected with a high degree of reliability
- Fixing one part of a defective process will solve the problem
- Non-operative events are recorded with the same rigor as interventional

DOES AUDIT RELIABLY IMPROVE QUALITY? ASSUMPTIONS

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DOES AUDIT RELIABLY IMPROVE QUALITY? PROBLEMS IDENTIFIED

- Only looks at outcome not process
- Poor quality agreed standards
- Low frequency of some events with poor process
- No effective method to change practice reliably
- Does not cover the domains of quality
- Rarely measure for appropriateness
- Hard to identify the source of the problem
- Hindsight bias
- An opportunity to denigrate or embarrass colleagues



HINDSIGHT BIAS

- Judgment of the likelihood of an event is estimated as significantly higher when viewed in retrospect.
- Tendency to be unaware of the modifying effect of outcome information.
- The evaluation of a process in retrospect is usually more severe when the outcome is poor
 - this occurs despite caution requested to guard against it.

“...reporting an outcome produces an unjustified increase in its perceived predictability, for it seems to have appeared more likely than it actually was.”

Fischoff B. J Experimental Psychology: Human Perception and Performance, 1975

HINDSIGHT BIAS

- **Tendency to overestimate what would have known in foresight**
- **Overestimate what others would have known in foresight**
- **Very powerful and compelling**
- **Misremember what they themselves knew in foresight**
 - reconstructive memory: memories can be changed by subsequent information

EFFECT OF OUTCOME ON PHYSICIAN JUDGEMENTS OF APPROPRIATENESS OF CARE

- **112 anaesthetists examined 21 cases involving anaesthetic outcomes**
- **Original outcome either temporary or permanent**
- **Generated an alternative scenario identical in all respects except the outcome was reversed**
- **The original and alternate matching pairs were randomly assigned for review**

Caplan, Posner and Cheney, JAMA, 1991

DISTRIBUTION OF REVIEWERS' RATINGS OF APPROPRIATENESS OF CARE

Group	No. of Ratings*	Appropriate	Less Than Appropriate	Impossible to Judge
Original Temporary Outcome	728	67	19	14
Alternate permanent outcome	728	36	33	31
Magnitude of change, percentage points	...	-31t	+14t	+17t
Original permanent outcome	448	28	39	33
Alternate temporary outcome	448	56	27	17
Magnitude of change, percentage points	...	+28t	-12t	-16t

IMPLICATIONS OF HINDSIGHT BIAS

- **Unperceived hindsight bias can seriously impair our ability to judge the past or learn from it (Fischhoff)**
- **Medicolegal opinions and litigation**
- **M & M meetings**
- **Clinical Review Committees**
- **RCA**
- **Interpretation of audits**
- **Modification of own practices**
- **Second opinions- diagnostic accuracy compromised by knowledge of previous diagnoses (Arkes et al, 1981)**
- **Tendency for investigations of poor outcomes in complex environments to conclude that human error was a major factor under-estimating the influence of multiple stimuli incoming during the event**

THE QUALITY OF HEALTH CARE DELIVERED TO ADULTS IN THE USA

*McGlynn EA et al,
N Engl J Med 2003*

USA HEALTH CARE QUALITY STUDY

- **Developed 439 quality indicators across 25 conditions**
- **Assessed health care delivered**
 - **case note review**
 - **phone interview**
- **6712 participants**
- **98,649 events**

ADHERENCE TO QUALITY INDICATORS, OVERALL AND ACCORDING TO TYPE OF CARE AND FUNCTION

Variable	No of Indicators	Percentage of Recommended Care Received
Overall care	439	54.9
Type of care		
Preventive	38	54.9
Acute	153	53.5
Chronic	248	56.1
Function		
Screening	41	52.2
Diagnosis	178	55.7
Treatment	173	57.5
Follow-up	47	58.5

USA HEALTH CARE QUALITY STUDY

- **Greater proportion errors of omission**
 - **46.3% participants did not receive recommended care**
 - **11.3% participants received care that was not recommended and potentially harmful**

THE QUALITY IN AUSTRALIAN HEALTHCARE STUDY

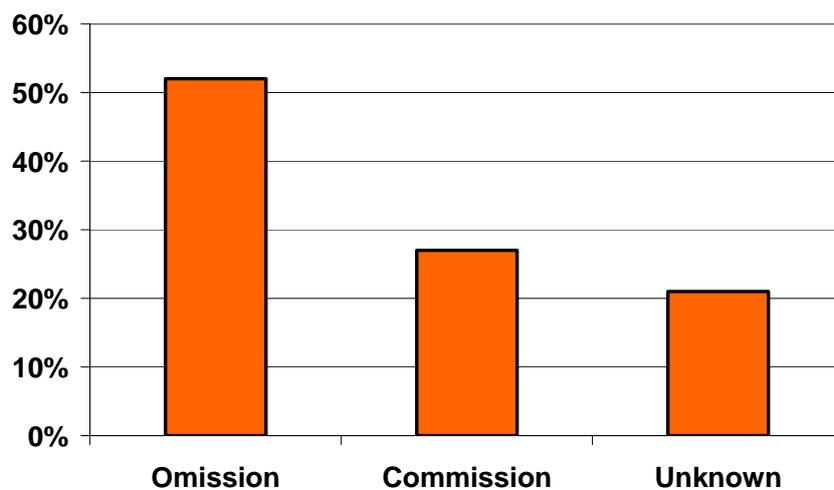
Health Care

The Quality in Australian Health Care Study

Ross McL Wilson, William B Runciman, Robert W Gibberd, Bernadette T Harrison, Liza Newby and John D Hamilton

A review of the medical records of over 14 000 admissions to 28 hospitals in New South Wales and South Australia revealed that 16.6% of these admissions were associated with an "adverse event", which resulted in disability or a longer hospital stay for the patient and was caused by health care management; 51% of the adverse events were considered preventable. In 77.1% the disability had resolved within 12 months, but in 13.7% the disability was permanent and in 4.9% the patient died. (Med J Aust 1995; 163: 458-471)

QAHCS - Error causing AEs



CARE TRACK: ASSESSING THE APPROPRIATENESS OF HEALTH CARE DELIVERY IN AUSTRALIA

Runciman et al MJA 197:100-105, 2012

Appropriate care delivered

- **57%** of encounters in the sample received **appropriate care**
- Levels of **appropriate care** varied between HCPs with **compliance** being as high as 80% for some healthcare practices and as low as 32% for others

High evidence compliance results

	% compliance	No. of eligible encounters
CareTrack	57% (95% CI 54%-60%)	35,573
Level 1 or Level 2 evidence	56% (95% CI 43-70%)	4,551
Grade A or B recommendations	54% (95% CI 49-60%)	6,431

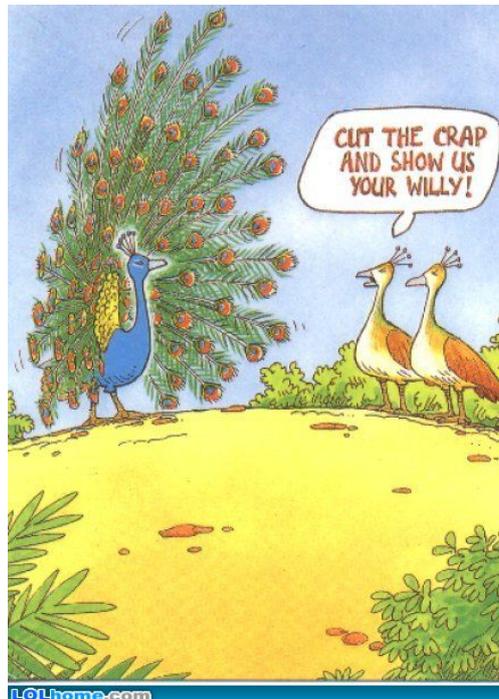


IN THE PURSUIT OF QUALITY PROBLEMS NEEDING SOLUTIONS

- **Safety of Care**
 - First do no harm (audit as safety net)
 - the anti-negative
- **Ensuring all patients receive the appropriate care**
 - **Quality beyond safety (the other 5 domains)**
 - the positive
- **Build in quality rather than inspect it in**

BUILDING IN QUALITY

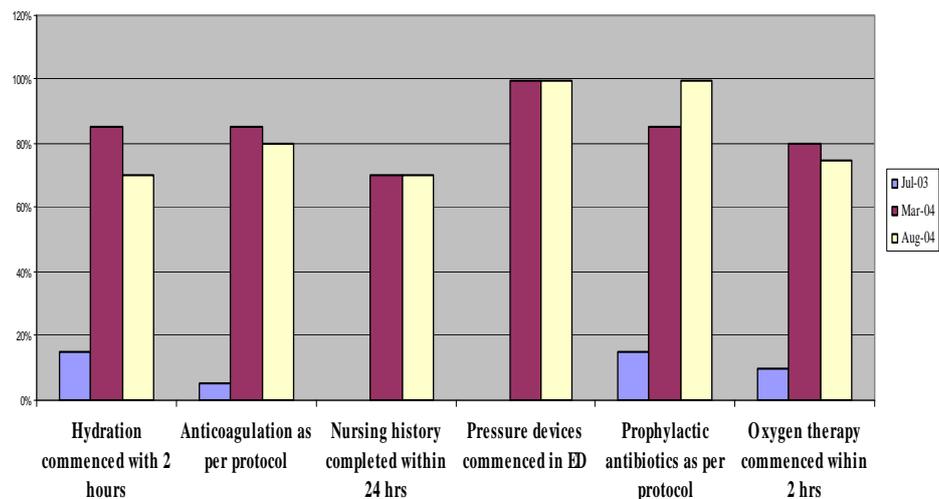
- Deliberate design of systems and processes
- Make expectations explicit (both process and outcome)
- Obtain consensus as a unit (powerful culture change agent)
- Collaborate with other providers/staff eg ED, JMS, radiology, anaesthesia, nursing, GP etc
- Checklists and protocols
- Design audit processes to measure according to the agreed standards (in addition to traditional M&M- the safety net)
- Measure for improvement (not judgement)
- Audit then becomes meaningful quality control measuring both process and outcome
- The checklists and protocols become the means to change practice more reliably



FRACTURED NECK OF FEMUR

- Ongoing saga
- Protocol commenced in 2003
 - good process results immediately

CHANGES TO PRACTICE PRE AND POST PROTOCOL IMPLEMENTATION



NEXT ISSUE – TIME TO THEATRE

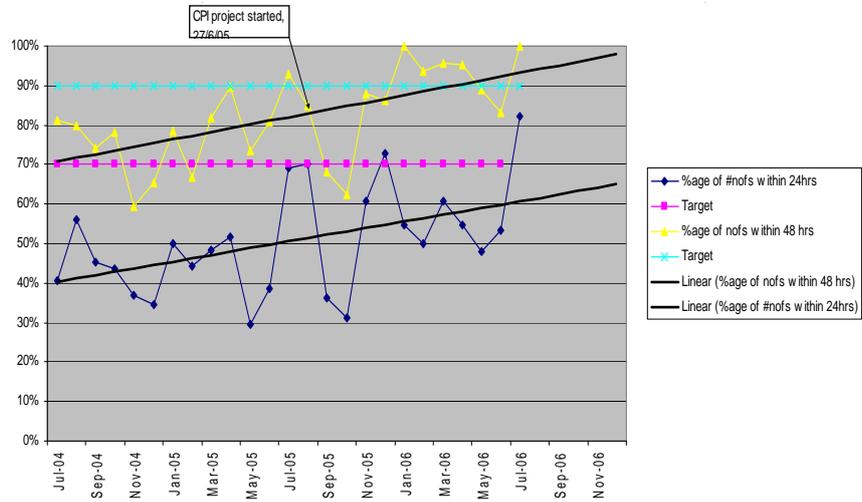
- Patients getting to theatre late
 - ~ 40% within 24 hours
 - ~ 70% within 48 hours

INTERVENTIONS IN 2005

- More consistent guidelines for reviews
- Better management of coagulation issues – active reduction of INR
- Better process for theatre booking
- More theatre time

Protocol adjusted

PERCENTAGE OF NOF# PATIENTS OPERATED WITHIN 24 OR 48 HRS OF THEIR ADMISSION



NEXT ISSUE - MORTALITY

- 2008 CPI project
- Inhospital mortality 6.5%

INTERVENTIONS ADDED IN 2008

Anaesthetist items

- Early review of patient by anaesthetist in ED
- Use of analgesic nerve blocks instead of parenteral opiates
- Anaesthetist review in recovery before being released to the ward
- Morning review by trauma anaesthetist

INTERVENTIONS ADDED IN 2008

Other items

- Medical review on the ward 6 hours
- Blood tests 6 hours to pick up any anaemia
- Increased multidisciplinary involvement in patient care
- Orthogeriatrics

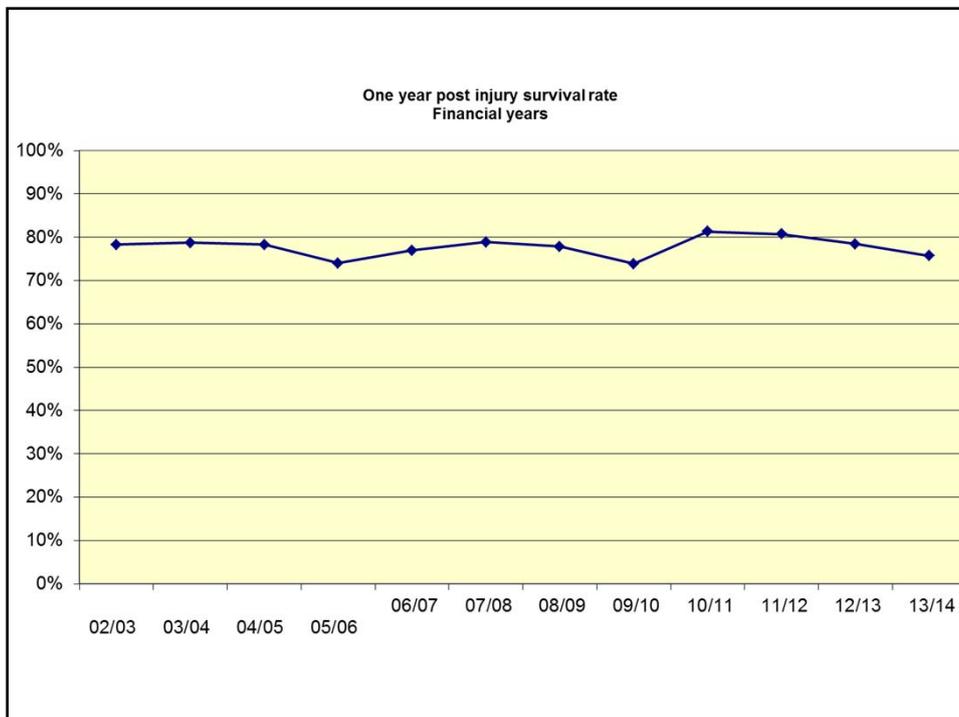
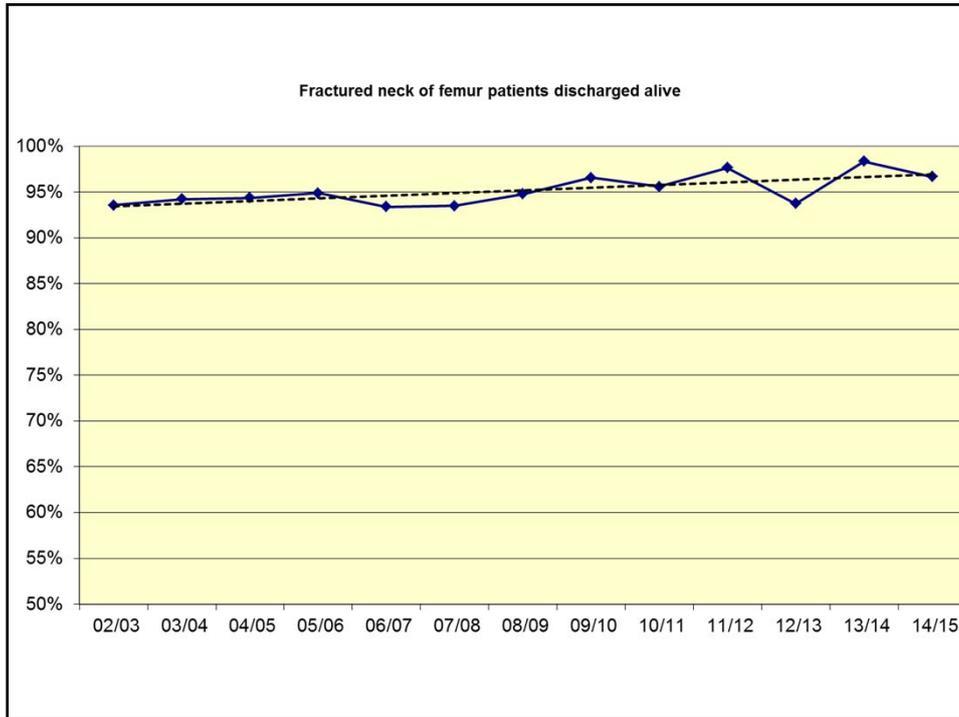
INTERVENTIONS ADDED IN 2009

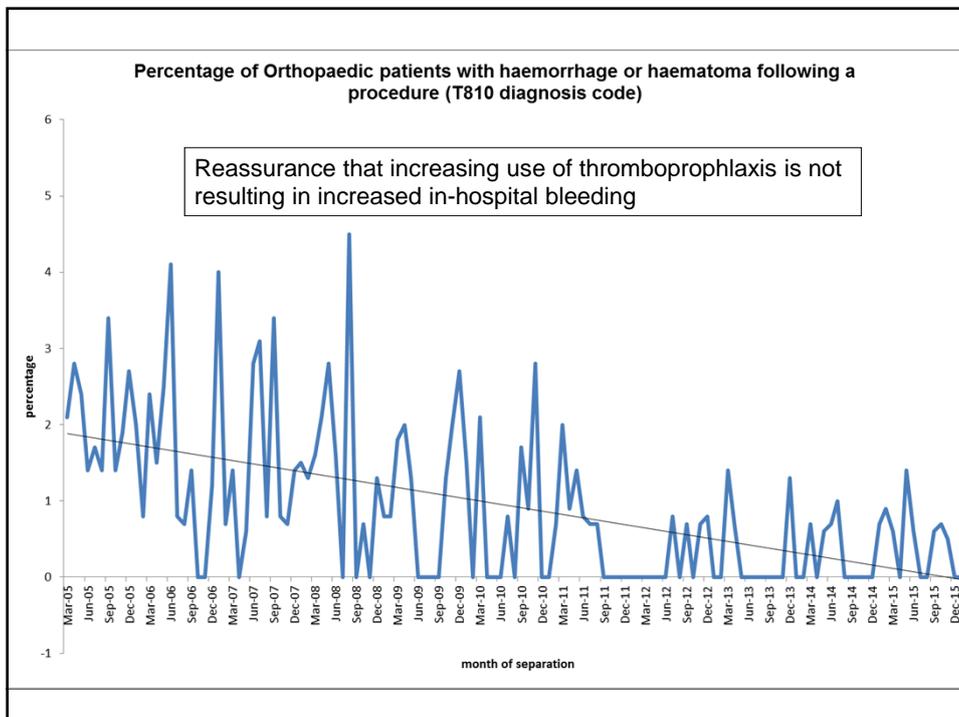
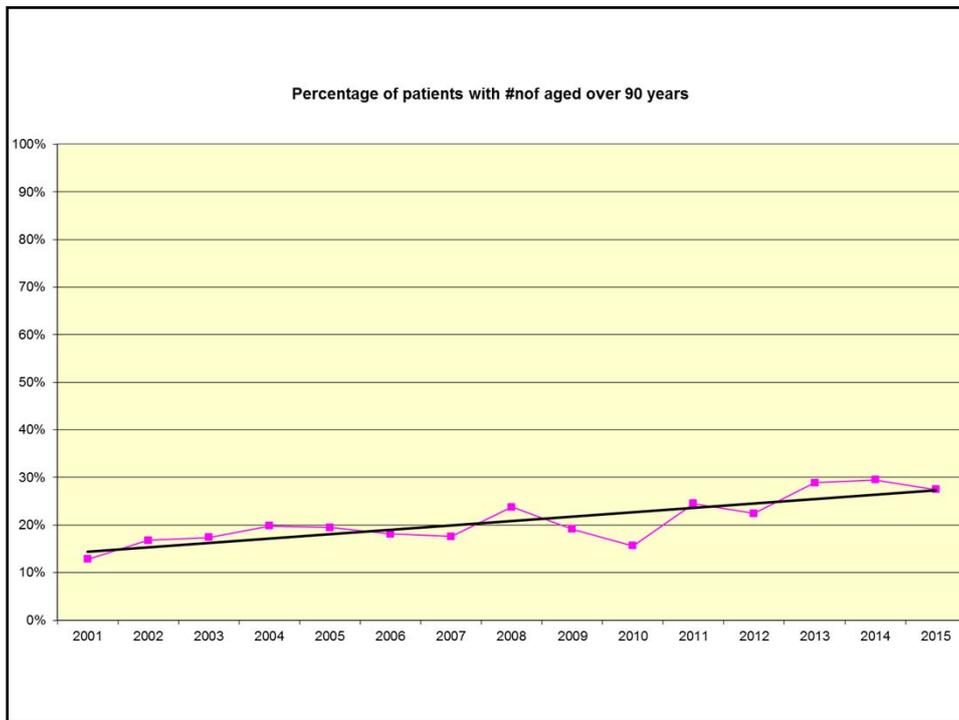
- Pre-op
 - IDC insertion
- Intra-operatively
 - Recovery 4h
- Post-op
 - Fluid management
 - 1/24 urine measures
 - Close observation
 - Medical review 1/24, 4/24 and at 2000

Protocol adjusted

INTERVENTIONS FOR 2016

- Focus on length of stay.....



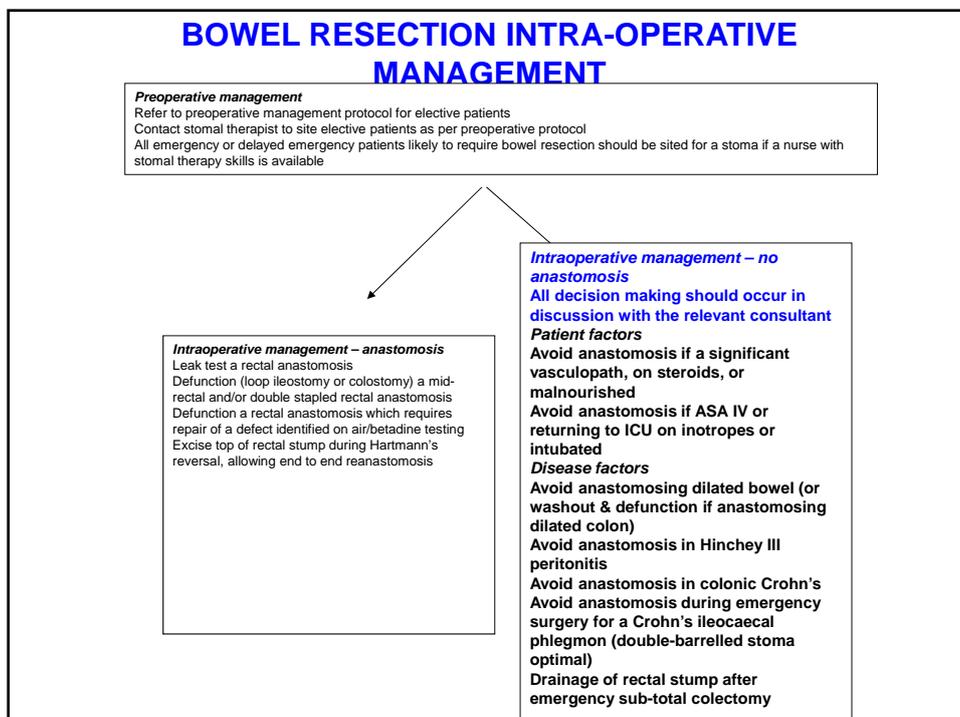
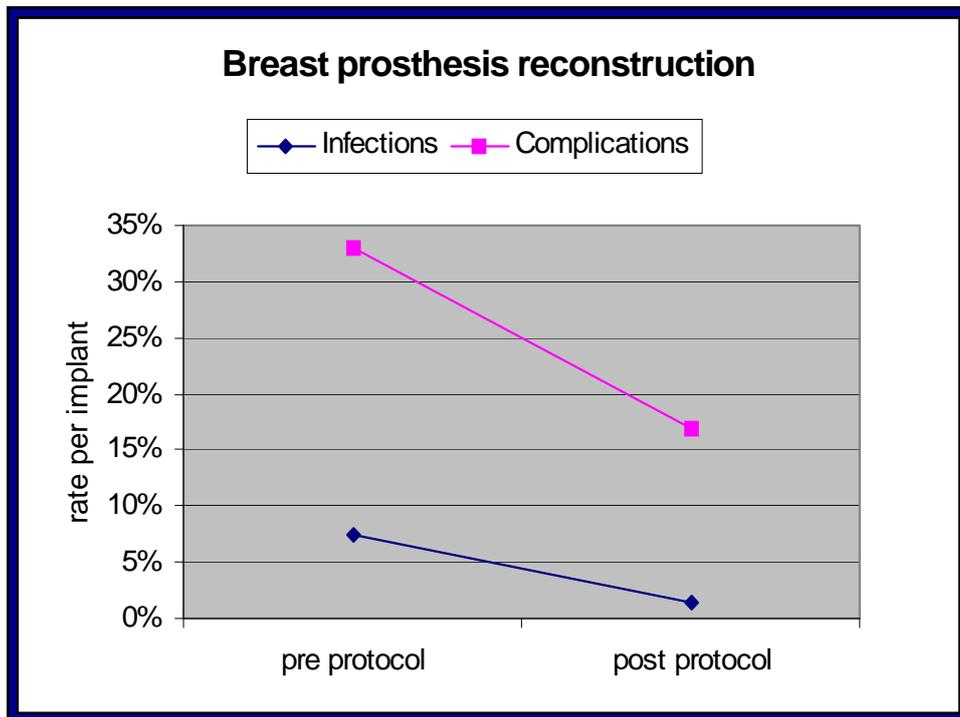


BREAST RECONSTRUCTION WITH PROSTHESIS

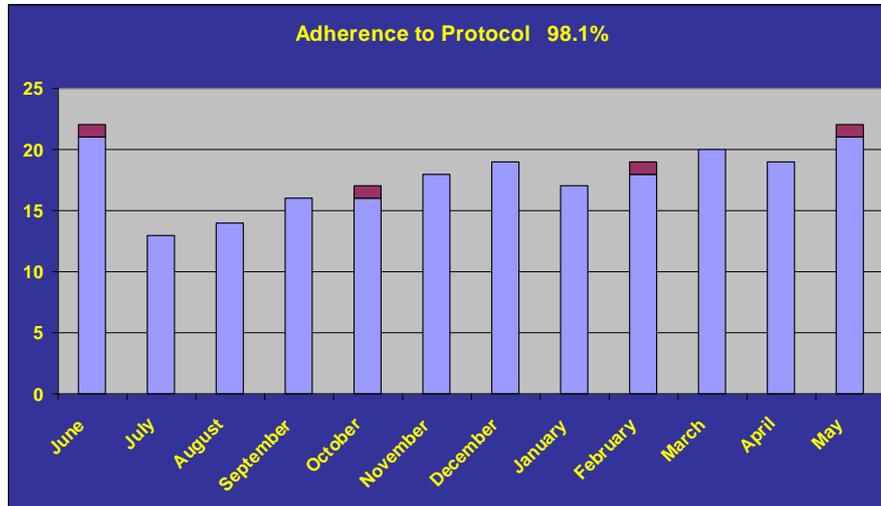
- **Breast reconstruction after mastectomy for cancer**
- **Standard M&M process identified higher than anticipated complication and infection rate**
- **Complications 33%**
- **Infection 7%**

BREAST RECONSTRUCTION WITH PROSTHESIS

- **Defined Ideal Process**
 - **Skin prep**
 - **Antibiotic**
 - **Glove change before handling prosthesis**
 - **Method of handling prosthesis**
 - **Closure**
 - **Use of drain**
 - **Dressing**
- Agreed and implemented by all plastic surgeons**



RUN CHART



Anastomotic leak rate decreased from 6% to 3%

IMPROVING MANAGEMENT OF PATIENTS WITH CHOLECYSTITIS

Aim :

- To standardise management of emergency cholecystitis patients ,reducing length of stay and improving the appropriateness of care

Key measures :

- Length of stay
- Antibiotics as per protocol
- Time from admission to theatre
- % treated surgically during admission
- Ultrasound within 24 hours (or prior to admission)

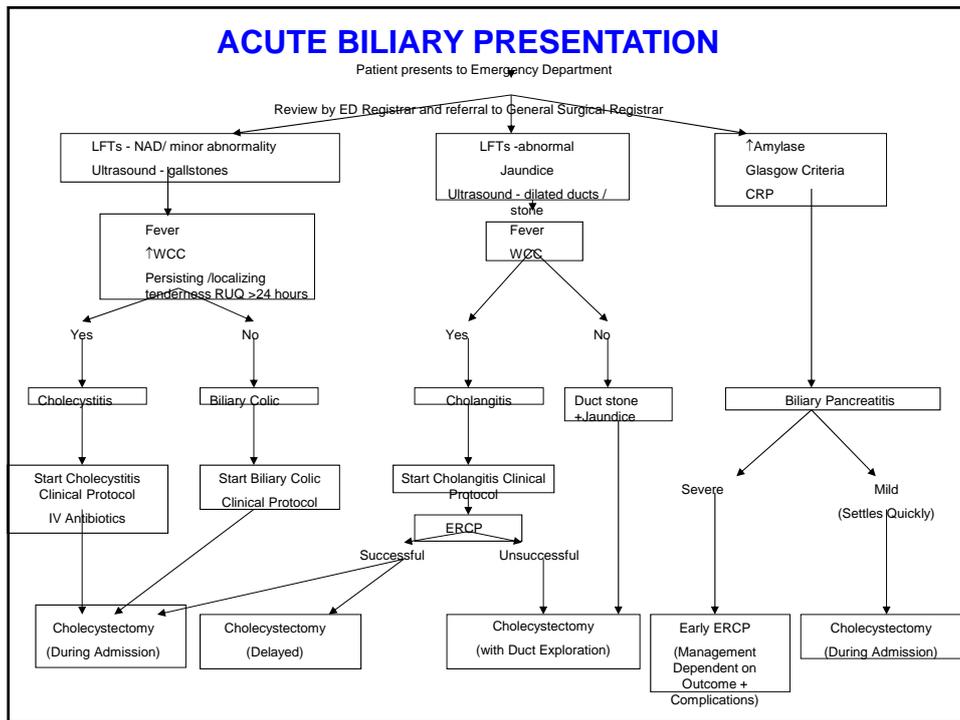
Interventions:

- Development and implementation of agreed evidence based protocol (June 2006)
- Protocol review (2007 and 2011)
- Medical student audit (2010)
- Emergency theatre for GI surgery implemented (July 2012)
- Trial of criteria led discharge (Feb 2013)
- Protocol review (June 2013)
- Medical student audit (2013)

Improvements made:

- Length of stay has reduced by 20% (median 5 to 4 days)
- A 44% reduction in time from admission to theatre (median 66 to 37 hours)

Next steps :



LAPAROSCOPIC CHOLECYSTECTOMY FOR ACUTE CHOLECYSTITIS COLLECTED SERIES 4054 PATIENTS - 19 SERIES

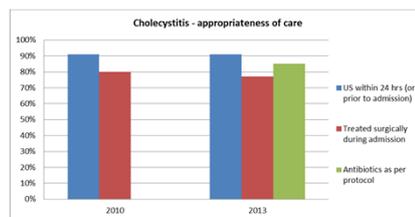
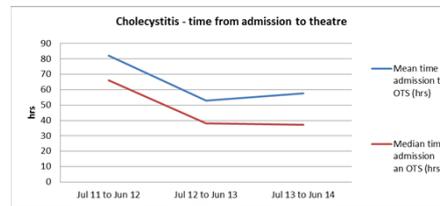
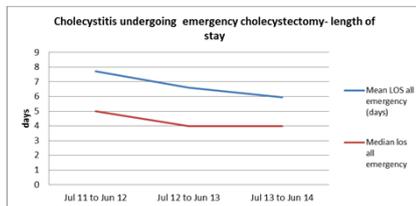
Conversion#	15.7%
Bile duct injury	0.42%
Bile leak	1.5%

(#2909 patients)

FMC CHOLECYSTECTOMY 2003-2006 (1102)

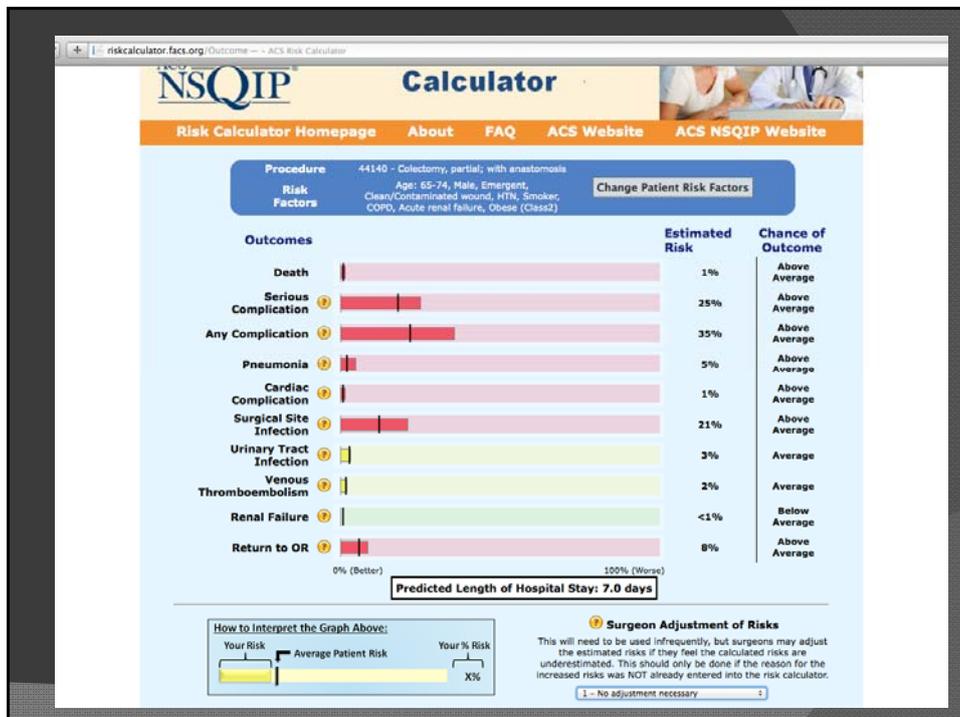
	ELECTIVE		EMERGENCY	
Lap	422		468	
Lap-open	17	3.8%	63	11.9%
Open	71	13.9%	61	10.3%
	510		592	
Bile leak			6	1.1%

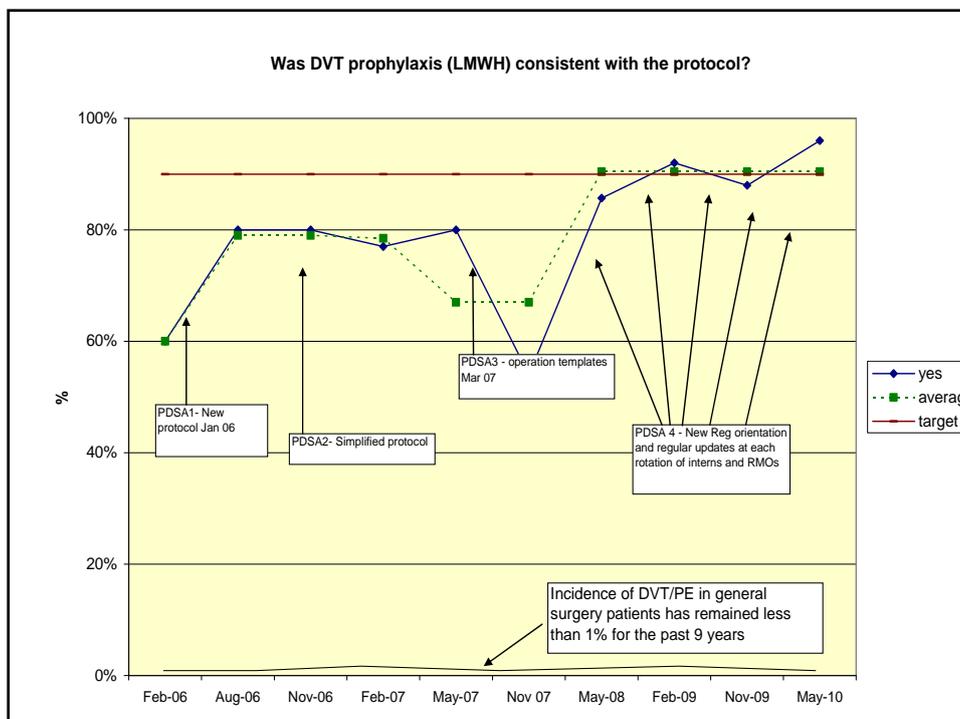
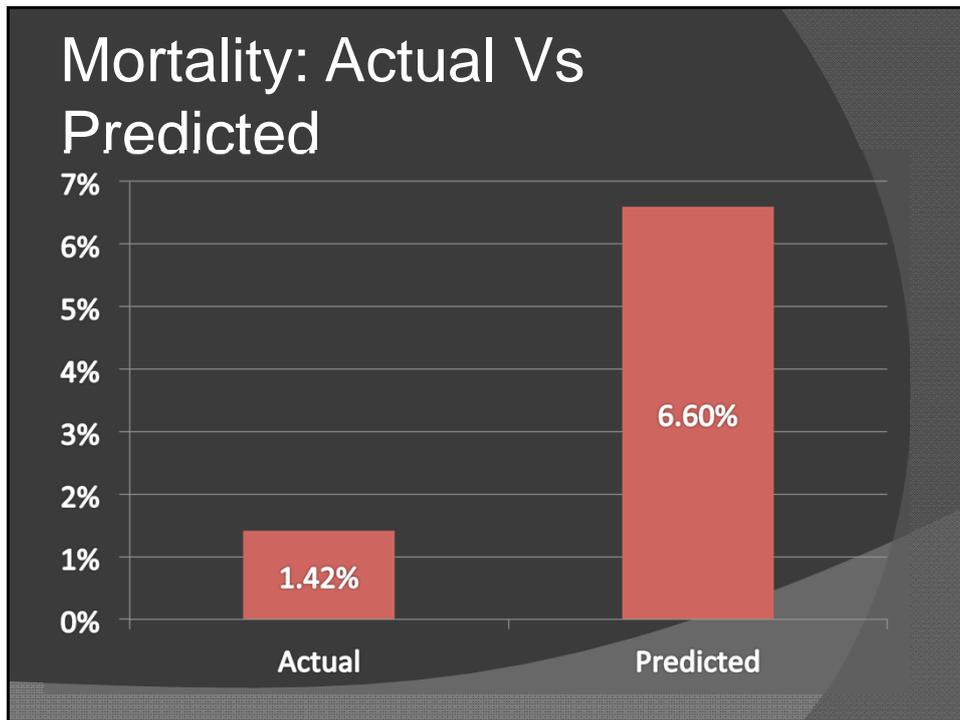
IMPROVING MANAGEMENT OF PATIENTS WITH CHOLECYSTITIS

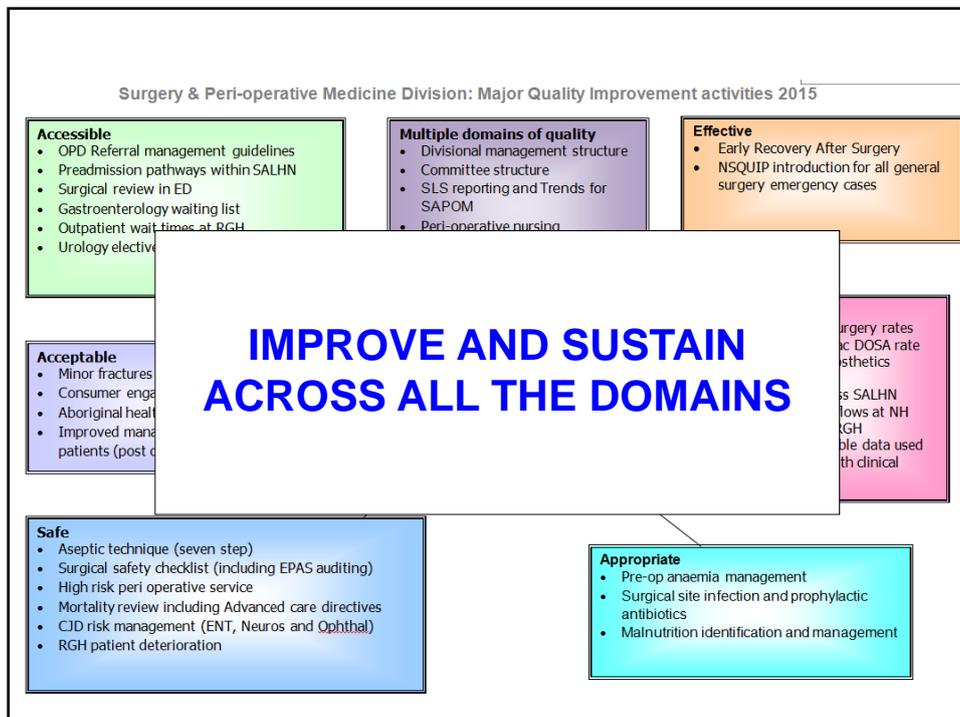
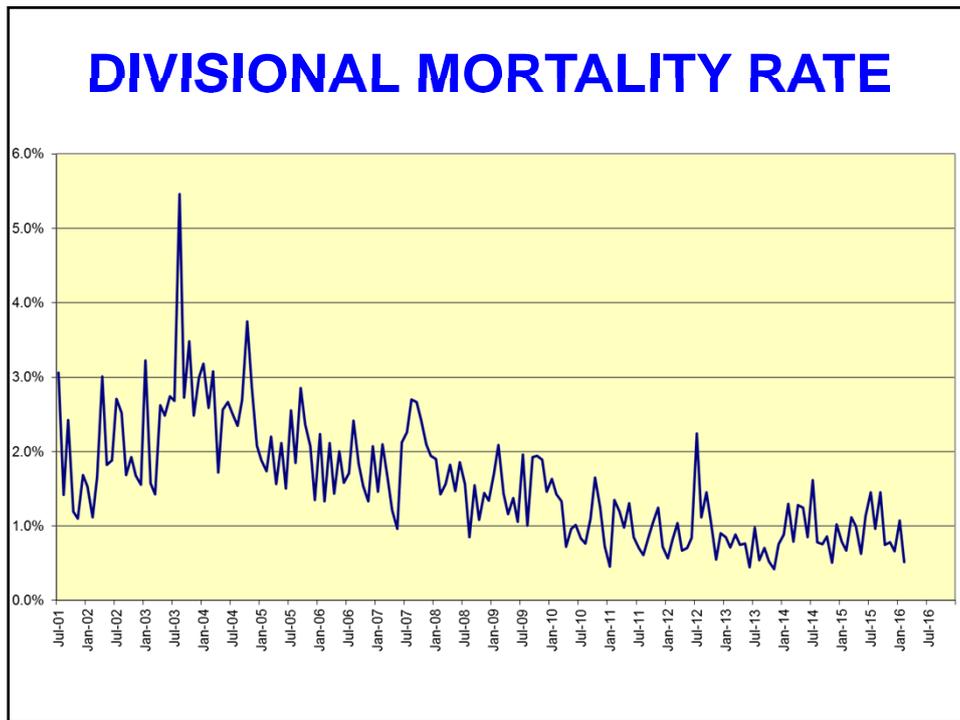


Mortality and Morbidity of patients undergoing
Emergency General Surgery at FMC
“ An Analysis of Actual versus Predicted according to
NSQIP calculator”

DR. AISHA KHALID







SUMMARY AUDIT AND QUALITY

- **Understanding what quality is**
 - For the surgeon
 - For the patient
- **“Design” systems for quality**
- **Make the quality parameters explicit**
 - Outcome
 - Process
 - Structure
- **Audit is the “Quality Control” not the mechanism to “inspect in” quality**
- **Measurement – flow charts**
- **Need systems to implement new steps or change old steps**

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