

Benchmarking in Healthcare

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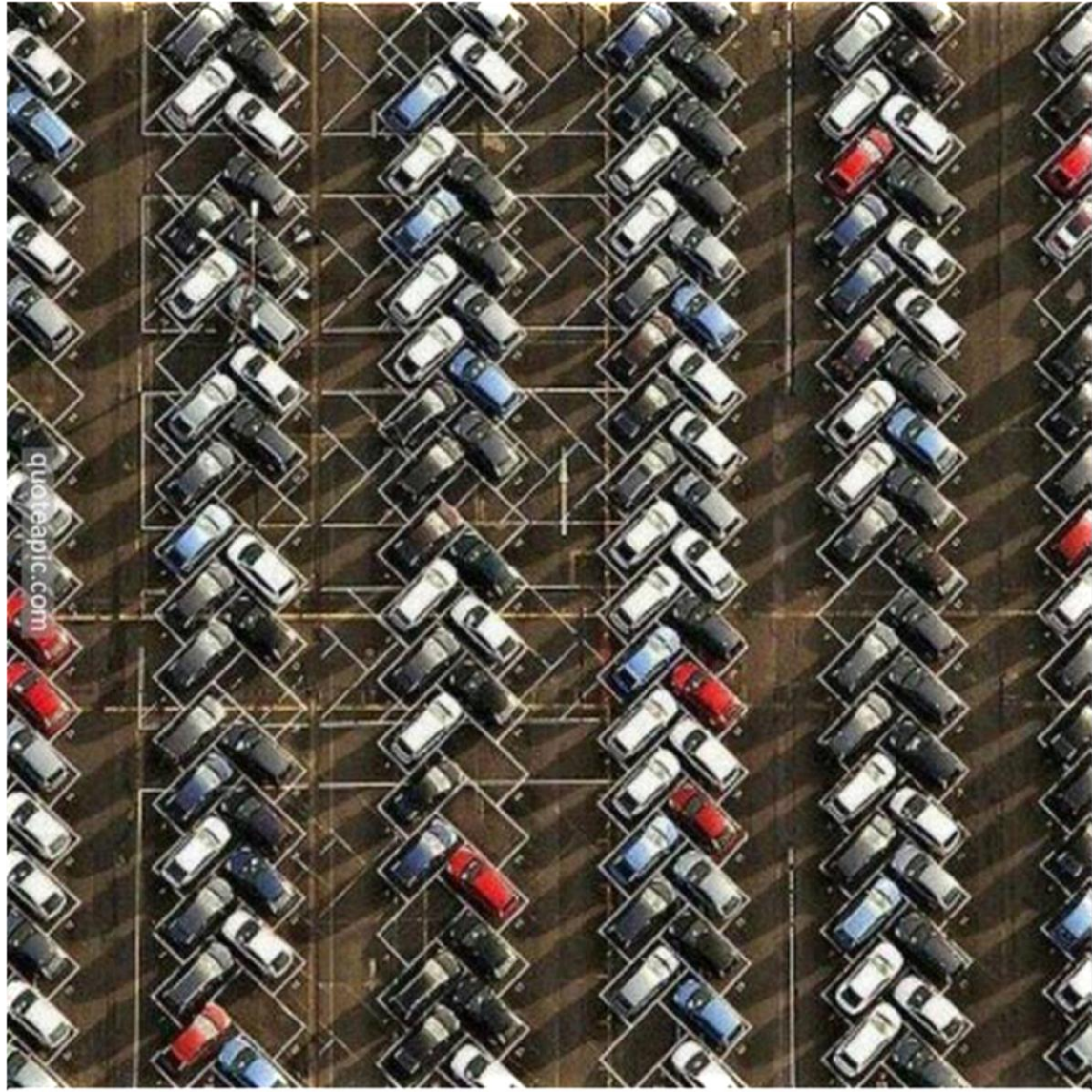
Apollo Centre for Advanced Pediatrics

Delhi, India









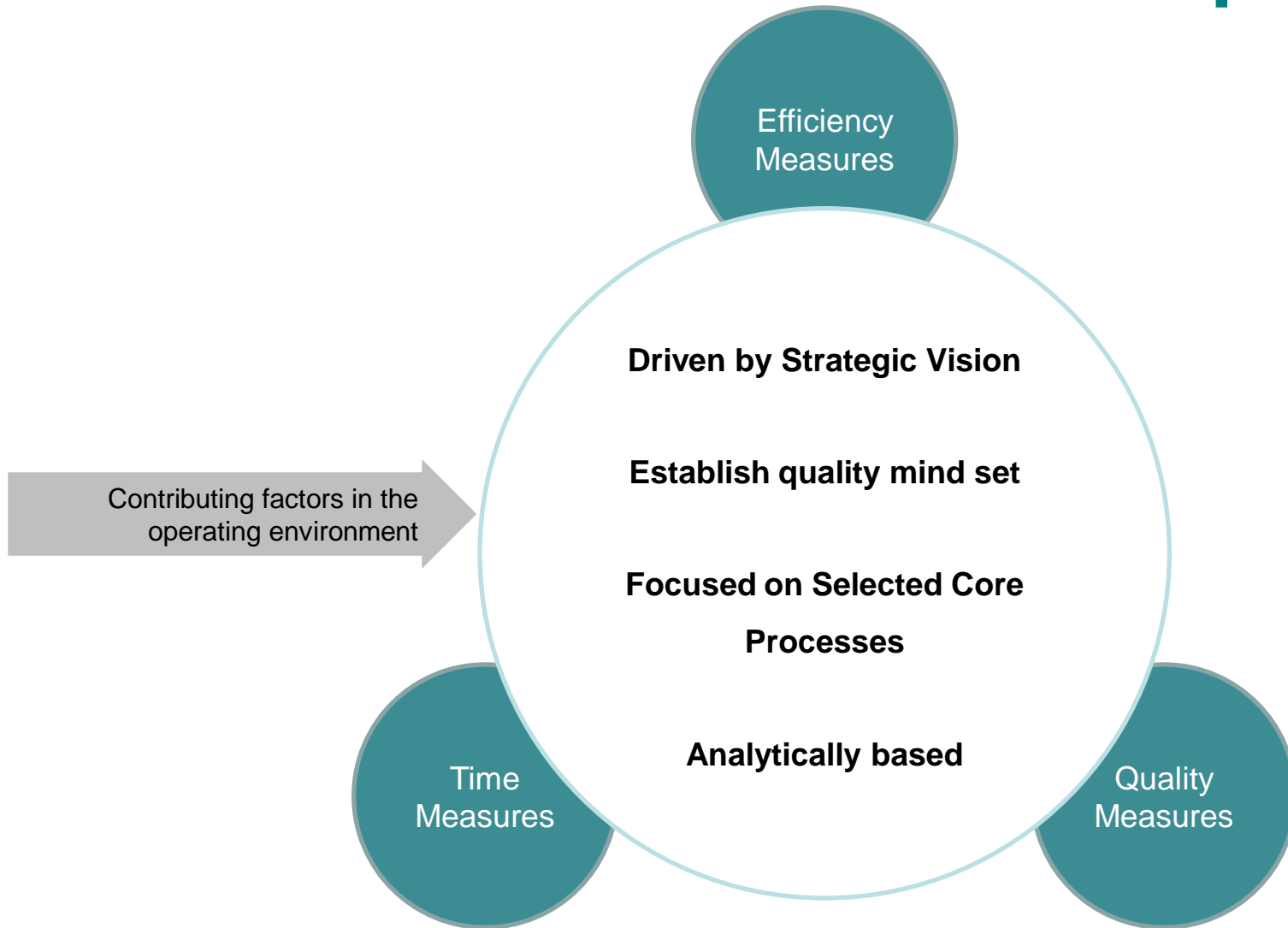


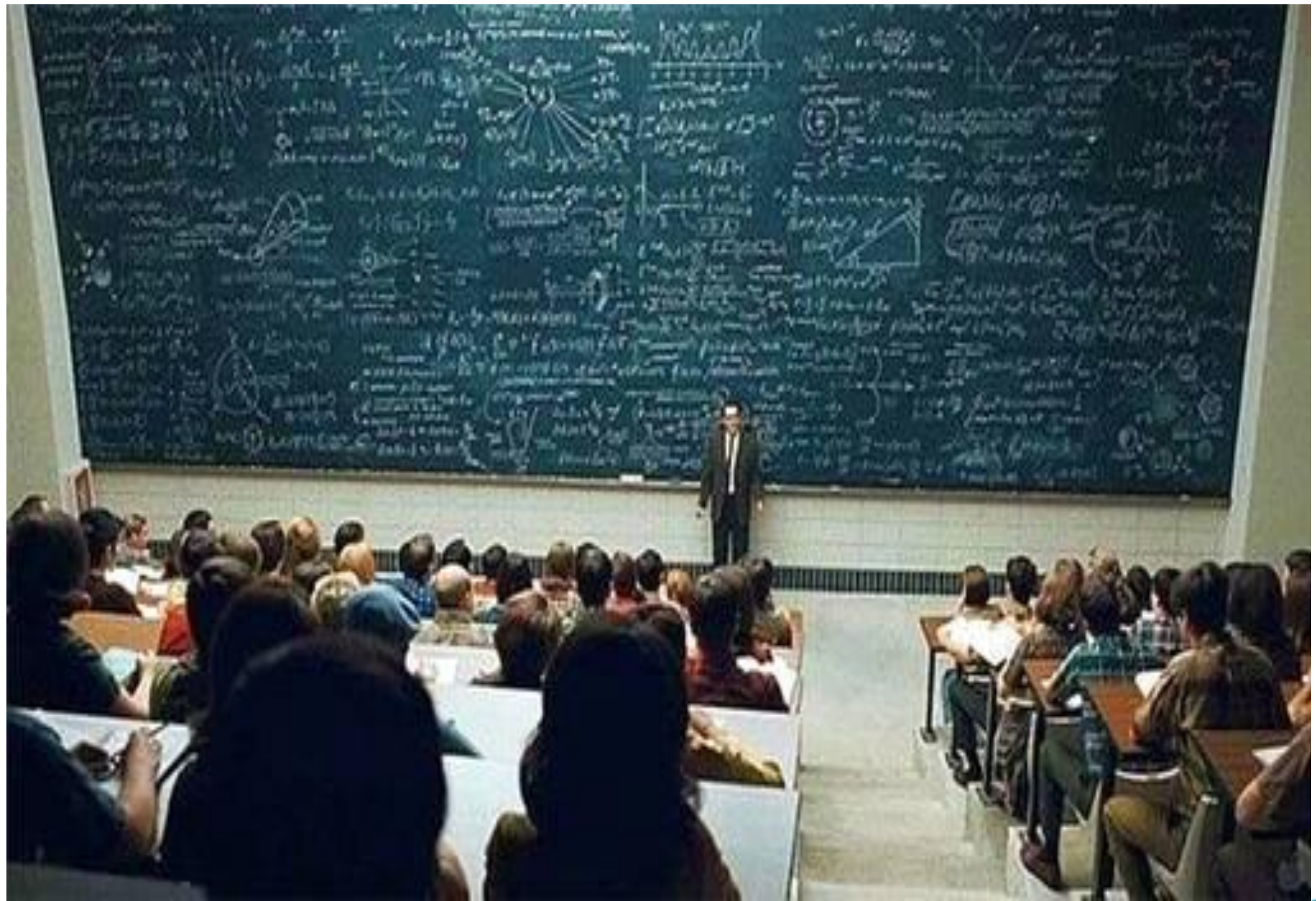
Benchmarking

A systematic, data-driven process
of continuous improvement that involves
internally and/or externally comparing performance
to identify, achieve, and sustain best practice



The Measurement Philosophy





Establishing target performance level or benchmark to evaluate current performance

Comparing these benchmarks

Translating data into action by informing performance improvement initiatives



WENT TO THE MOON



TOOK 5 PHOTOS

WENT TO THE BATHROOM



TOOK 37 PHOTOS









Company share in copier market dropped from 84% to 17% in 1974-1982

David Kearns took over as CEO in 1982

“Leadership through Quality”

Ten key factors, 67 sub-processes



American Express for billing and collection

Honda for supplier development

Toyota for quality management

Dupont for manufacturing safety

Sales improved from 152 - 328%

Deming Award

Malcolm Baldrige National Quality Award

European Quality Award



xerox



Southwest[®]



Refueling time between flights 40 minutes

Benchmarked refueling operations against NASCAR, a top performer pit crew in Formula One

Performance determination

Singular focus of each employee or unique assignments

Great approach towards teamwork





Turned around refueling processes
Reduces refueling time between flights to 12 minutes, created
a benchmark for the entire industry



Cost

Average length of stay for inpatients

Nursing hours per inpatient day

Operating theatre utilization rate

Anesthetists to operating tables ratio

Occupancy rates in ICUs



Quality

Unplanned re-admission rate

Pre anesthetic consultation rate

Patient falls

Pressure ulcers

Needle stick injuries



Time

Waiting times for emergency

Admission waiting time

Door to CT in head injury cases

Waiting times for physician consult

Length of stay post laparoscopic cholecystectomy





A Well Planned Approach to Benchmarking

Determining what to study

Clearly defined problem (key factor of success)

Forming a benchmarking team

Staff commitment to the project

Identifying benchmarking partners - either external or internal

Quantitative and qualitative data

Collecting data

Well-defined process for data collection

Analyzing data

Benchmark establishment

Taking action

PDCA





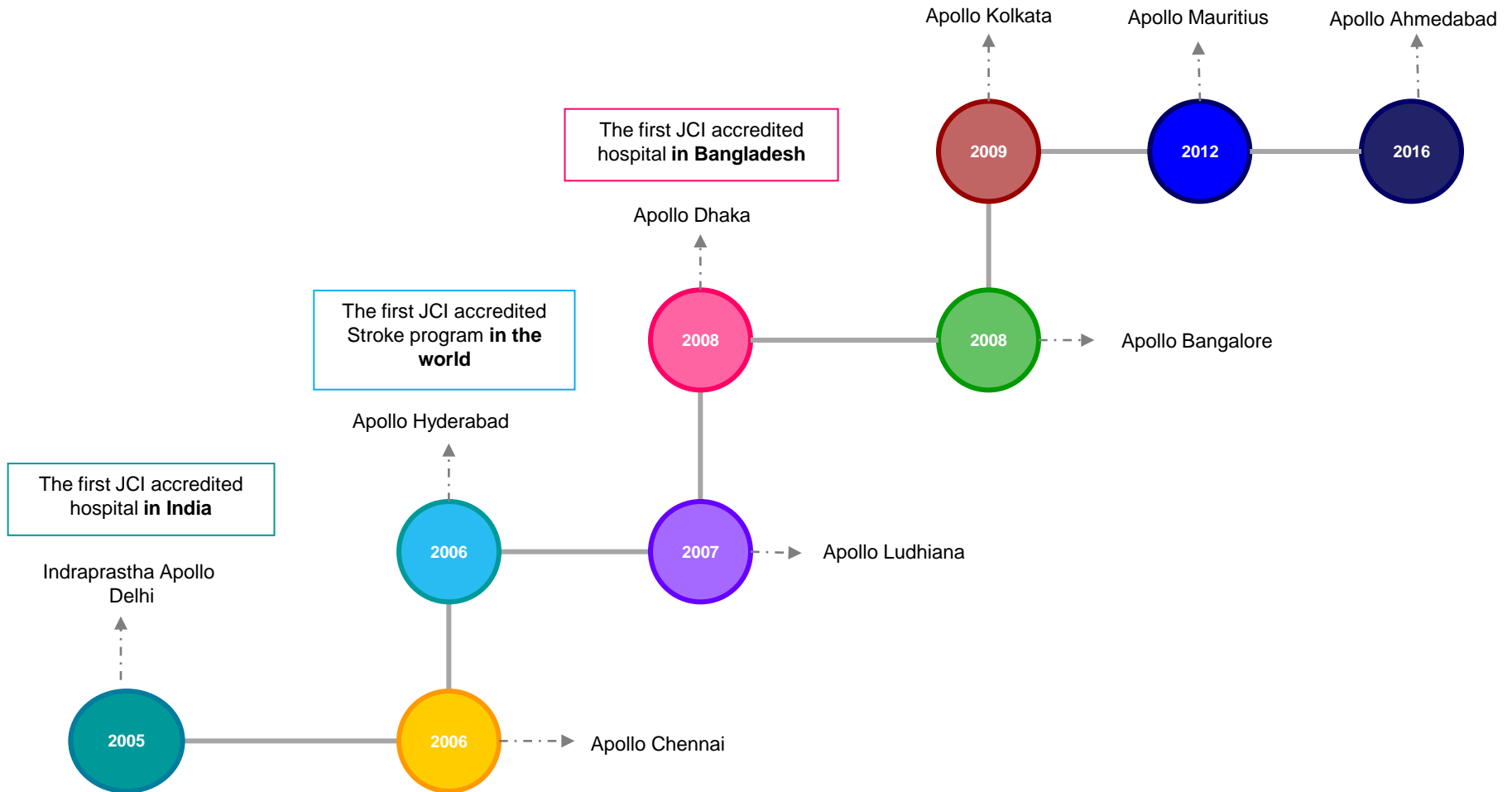
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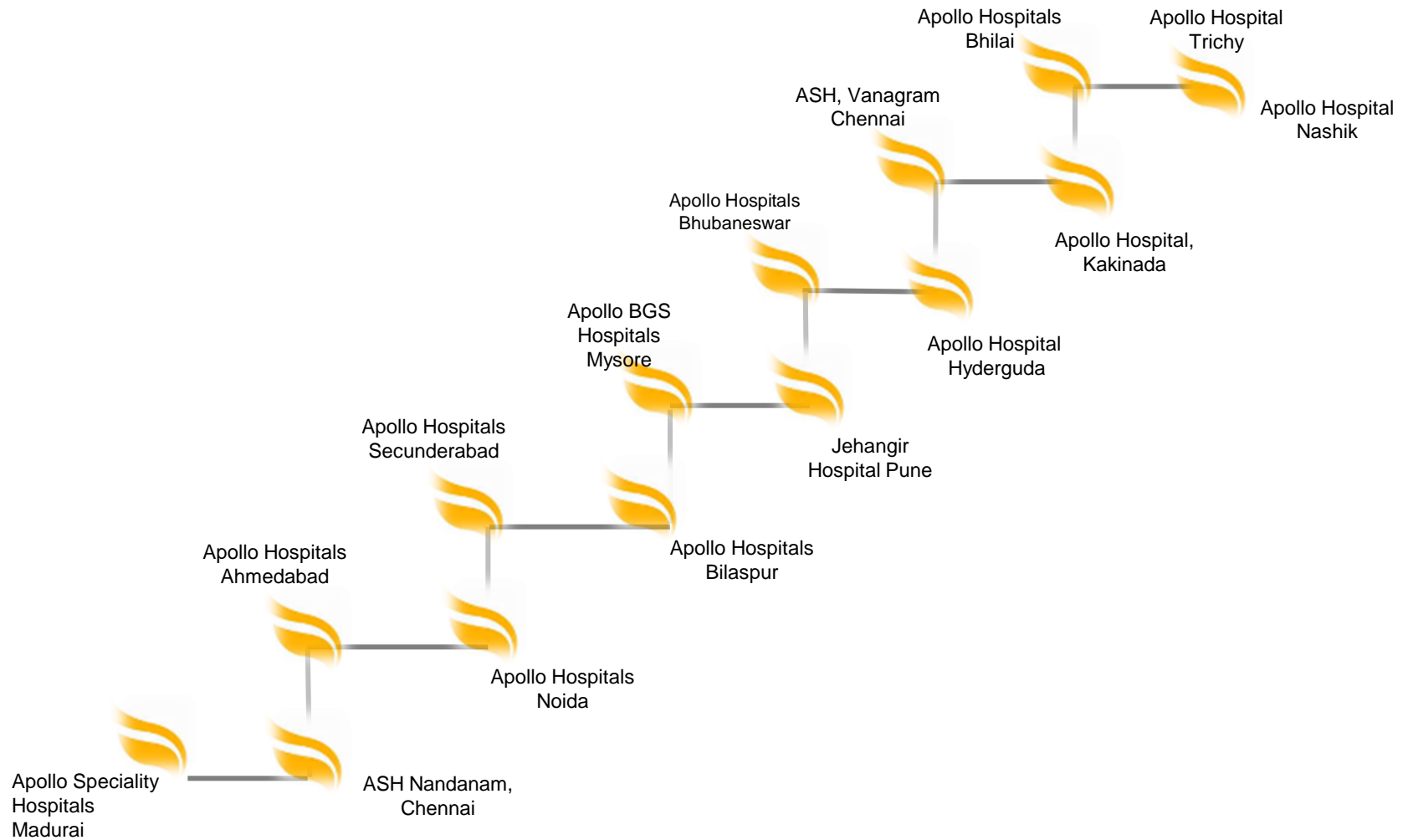




The JCI Journey of the Apollo Group...

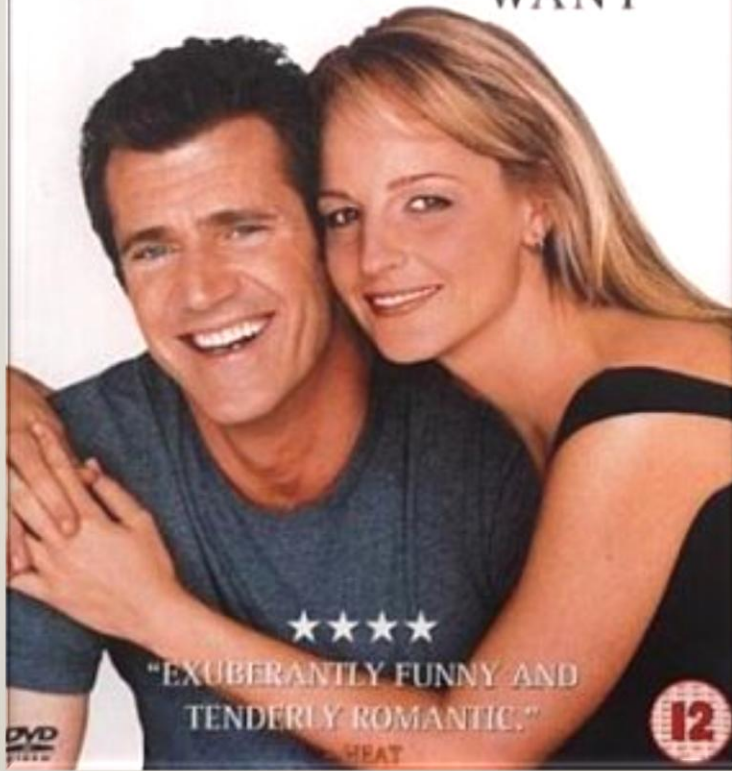


The NABH Journey of the Apollo Group...



MEL GIBSON
WITH NANCY MEYERS
HELEN HUNT

WHAT
WOMEN
WANT



What Patients Want

Excellent clinical outcomes

Value for money

Service quality



What Physicians Want

Excellent clinical outcomes

Patient experience - 'wow'

Conducive milieu



What Health Insurance Wants

Excellent clinical outcomes

Lower pay outs

Retention of clients



The Common Bond

Clinical Outcomes



ACE@25

Clinical balanced scorecard

25 parameters assessed against international benchmarks

Apollo Light House



International Benchmarks

Cleveland Clinic

Mayo Clinic

National Healthcare Safety Network

Massachusetts General Hospital

AHRQ US

Columbia University Medical Center

US Census Bureau

National Kidney Foundation Disease Outcomes Quality Initiative



CABG Mortality Rate

Benchmark: 0.60%

Numerator: Number of in-hospital deaths after CABG

Denominator: Total number of CABG conducted

Indicator	Benchmark	Range	Score
CABG mortality rate	0.60%	≤ 0.80	4
	Cleveland Clinic	0.81-1.20	3
		1.21-1.60	2
		1.61-2.00	1
		> 2.00	0



Door to thrombolysis time in ischemic stroke in ER

Bench mark: 60 minutes

Numerator: Average lag time between arrival of the patient, to start of the thrombolysis in patients with ischemic stroke in ER

Denominator: Total number of ischemic stroke patients in ER

Door to thrombolysis time in ischemic stroke in ER	60 minutes	≤60.00	4
	Massachusetts	60.01-70.00	3
	General Hospital	70.01-80.00	2
	Emergency	80.01-90.00	1
		>90	0

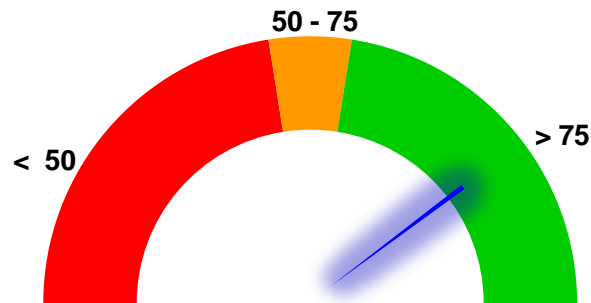


ACE@25

Parameters scored as a percentage

Maximum score attainable 100

Over all hospital cumulative scores



@ Apollo

http://apollogroup.in/ACE/dashboard.aspx

ACE Apollohospital...

File Edit View Favorites Tools Help



ACE-I
Monitoring

Welcome Dr .Anupam Sibal

Query Data

Dashboard

Reports

Graphs

Logout

Color Coding.

>=75 - 100 Good

50 - 74 Satisfactory

<=50 Needs Improvement

Region	Location Name	01/2017	02/2017	
Ahmedabad	Ahmedabad Main Hospital	79	86	85
Bangalore	Bangalore Main Hospital	85	90	90
Chennai	Chennai Main Hospital	87	93	84
Delhi	Indraprastha Apollo	89	81	No Data
Hyderabad	Jubilee Hills	99	99	98
Kolkata	AGHL	85	88	90
Bangladesh	Apollo Hospitals Dhaka	68	82	72
Bilaspur	Apollo Hospitals Bilaspur	68	72	75
Madurai	Apollo Speciality Hospitals Madurai	82	80	78
Mysore	Apollo BGS Hospitals	77	87	87
Pune	Jehangir Hospital	80	85	92
Hyderabad	Apollo Hospitals Heart & Kidney Centre, Vizag	85	78	75
Aragonda	Apollo Hospitals Aragonda	70	70	70
Bachelli	NMDC Apollo Hospitals	70	60	80
Bhilai	Apollo BSR Hospitals	93	93	95
Chennai	Sowcarpet	78	80	78
Chennai	Apollo First Med Hospital	85	80	95
Chennai	Apollo Hospitals Tondiarpet	98	98	88
Chennai	Apollo Specialty Hospitals Chennai	60	83	88
Hyderabad	Apollo Hospitals Kakinada	78	85	85
Noida	Apollo Hospitals Noida	95	95	100
Ranipet	Apollo K H Hospitals	98	85	95
Hyderabad	Apollo Bhubaneswar	80	77	88
Hyderabad	Apollo Hospitals Secundrabad	80	92	98
Hyderabad	Apollo Hospitals DRDO	90	95	73
Hyderabad	Apollo Hospitals Karimnagar	87	87	85
Ambavadi	Apollo City Centre Ambavadi	68	80	No Data
Chennai	Apollo Children's Hospital Chennai	83	100	No Data
Karur	Apollo Loga Hospital	100	90	No Data
Hyderabad	Apollo Emergency Hyderguda	92	95	92
Karaikudi	Apollo Reach Hospital Karaikudi	88	98	98
Chennai	Apollo Specialty Hospitals Vanagaram	85	97	No Data
Chennai	Apollo Specialty Hospitals Trichy	77	72	77

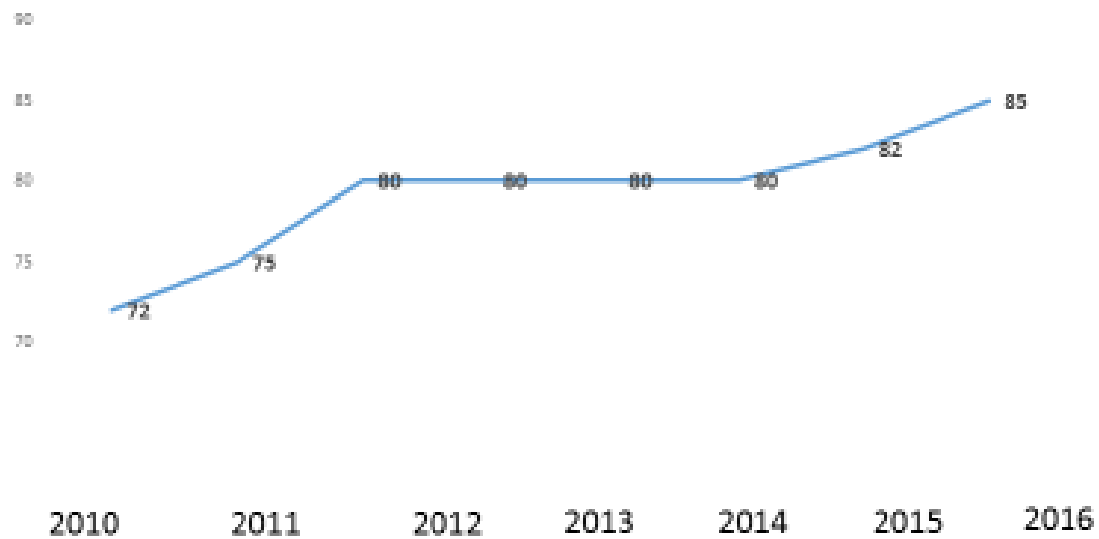


Jubilee Hills

Parameter	Numerator	Value	Denominator	Value	Result	Uom	Previous	Current
CABG mortality rate	Number of in-hospital deaths after CABG	0	Total number of CABG conducted	59	0	%	4	4
Complication rate post coronary intervention	Number of patients developing predischarge complications after coronary intervention	0	Total number of coronary interventions conducted	93	0	%	4	4
ALOS post angioplasty	Total number of inpatient days post angioplasty	245	Total number of angioplasties performed	93	2.63	Days	3	3
ALOS post THR	Total number of inpatient days post THR	8	Total number of THR performed	2	4	Days	4	4
ALOS post TKR	Total number of inpatient days post TKR	101	Total number of TKR performed	27	3.74	Days	4	4
Complication rate TKR	Number of patients developing predischarge complications post TKR	0	Total TKR performed	27	0	%	4	4
ALOS post renal transplant	Total number of inpatient days post kidney transplant	25	Total number of kidney transplants performed	4	6.25	Days	4	4
Average Urea Reduction Ratio (URR) in patients on hemodialysis	Difference in average pre dialysis BUN and average post dialysis BUN	37	Average pre dialysis BUN	55	67.27	%	4	4
ALOS post TURP	Total number of inpatient days post TURP	17	Total number of TURP performed	8	2.12	Days	4	4
Endoscopy complication rate	Number of patients developing complications on endoscopy	0	Number of endoscopies performed	276	0	%	4	4
Patient satisfaction with pain management	Patient satisfaction score for satisfaction with pain management.	5488	Number of discharged patients who gave their response in the customer feed back form (VOC form). Maximum score 5	1127	4.87	Units	4	4
Door to CT or MRI Time in stroke in ER	Average lag time between arrival of the patient in ER, to the time of CT or MRI taken in stroke cases	560	Total number of stroke patients in ER	28	20	minutes	4	4
Catheter Related Blood Stream Infection (CR-BSI)	Total number of CR-BSI cases	0	Total number of catheter (central line) days	0.781	0	CR-BSI per 1000 central line days	4	4
Ventilator Associated Pneumonia (VAP)	Total number of patients of VAP	0	Total number of ventilator days	0.591	0	VAP per 1000 ventilator days	4	4
Catheter related Urinary Tract Infection (CR-UTI)	Total number of CR-UTI cases in hospital	0	Total number of catheter days	1.399	0	CR-UTI per 1000 catheter days	4	4
Surgical site infection (SSI-Clean wound)	Total number of SSI (Clean and clean contaminated wound) cases.	0	: Total number of clean and clean contaminated surgeries performed	1470	0	%	4	4
Average Length of Stay (ALOS) in hospital	Number of inpatient days of discharged patients	9572	Total number of discharged patients	2339	4.09	Days	4	4
Average Length of Stay (ALOS) in ICU	Number of days in ICU of discharged /transferred out patients	2307	Total number of patients discharged / transferred from ICU	619	3.73	Days	4	4
Readmission rate post renal transplant within 30 days	Total number of readmissions within 30 days of renal transplant	0	Total number of renal transplants performed	4	0	%	4	4
Blood transfusion rate following TURP	Number of patients receiving blood transfusion following TURP	0	Total number of renal patients undergoing TURP during the period	8	0	%	4	4
ALOS post microdisectomy	Total number of inpatient days post microdisectomy	11	Total number of microdisectomies performed	4	2.75	Days	4	4



Group Average ACE@25 Score



Apollo Quality Plan

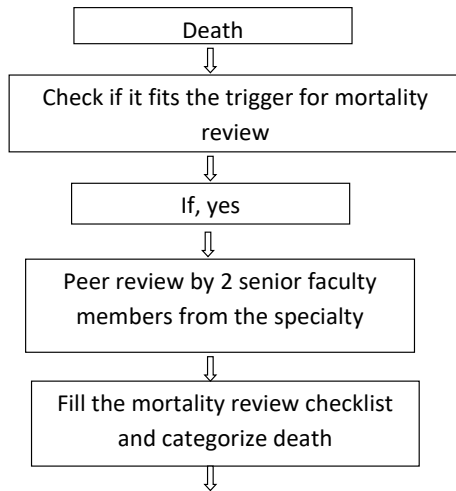
Month :
 Year :

ID	Masterpara	PARAMETERNAME	first_range	second_range	third_range
1	Clinical Handovers	Percentage compliance to completion of In house transfer form before patient transfer	>90%	80-90%	<80%
2	Clinical Handovers	Percentage compliance to use of nursing handover form for patient handover	>90%	80-90%	<80%
3	Clinical Handovers	Percentage compliance to use of physician handover form for patient handover	>90%	80-90%	<80%
4	Clinical Handovers	No. of instances (per month) where Clinical Handovers were one of the proximate causes for the adverse clinical events and outcomes	<1	1	>1
5	IPSGs	IPSG 1 Tracker score	100	90-99.9%	<90%
6	IPSGs	IPSG 2 Tracker score	100	90-99.9%	<90%
7	IPSGs	IPSG 3 Tracker score	100	90-99.9%	<90%
8	IPSGs	IPSG 4 Tracker score	100	90-99.9%	<90%
9	IPSGs	IPSG 5 Tracker score	100	90-99.9%	<90%
10	IPSGs	IPSG 6 Tracker score	100	90-99.9%	<90%
11	Surgical Care Improvement	Percentage of patients receiving antimicrobial prophylaxis within one hour before surgery	>95%	90-95%	<90%
12	Surgical Care Improvement	Percentage of patients excluded from SSI calculation due to lack of follow up for the requisite time frame	<20%	20-30%	>30%
13	Surgical Care Improvement	SSI	<2.2%	2.21-2.85%	>2.86%
14	Surgical Care Improvement	Number of instances of wrong patient, wrong side, wrong procedure surgery	0	<0	>0
15	Surgical Care Improvement	Compliance to communicating sponge and instrument count to surgeon before skin closure	>95%	90-95%	<90%
16	Surgical Care Improvement	Incidents of retained foreign body during surgery	0	<0	>0
17	Medication Safety	Medication errors per 100 discharges	<2.2%	2.21-2.85%	>2.86%
18	Medication Safety	Medication errors due to sound alike look alike drugs as a percentage of total errors	<2%	2-4%	>4%
19	Standardization of medical records	Percentage compliance to minimum content of medical records on closed audits	>90%	80-90%	<80%
20	Standardization of medical records	Accuracy of ICD - 10 coding	>95%	90-95%	<90%



Apollo Mortality Review

Process flow for mortality review



Case presentation by treating team in a monthly mortality review meeting to institutionalize learning from the case. Membership should include medical head, faculty from the concerned specialty, quality head, pathologist, head of infection control and representative from radiology.

Patient identified through a code

Diagnosis:

Cause of Death:

Tick as appropriate:

	Yes	No
Emergency admission	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comorbid conditions present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Care setting appropriate to patient condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Staff privileges and credentials appropriate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Clinical practice deficiency – error in diagnosis	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Clinical practice deficiency – error in treatment	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Delay in recognition of clinical deterioration	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Delay in escalation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Delay in response and definitive treatment	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hospital acquired infection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Post procedure complication	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Medical error or adverse drug reaction	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Error in communication or patient hand over	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Equipment failure or deficiency	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Patient fall	<input type="checkbox"/>	<input checked="" type="checkbox"/>
System error	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please tick the category of death (*Death Audits: 2001, The Health Round Table criteria*)

- Category 1: Anticipated death
 - 1a) due to terminal illness (anticipated by clinicians and family); and/or
 - 1b) following cardiac or respiratory arrest before arriving at the hospital.
- Category 2: Not unexpected death, which occurred despite the health service taking preventive measures.
- Category 3: Unexpected death which was not reasonably preventable with medical intervention.
- Category 4: Preventable death where steps may not have been taken to prevent it.
- Category 5: Unexpected death resulting from a medical intervention.

Signature of peer 1 for code 1 patient

Name and designation of peer 1



Apollo Incident Reporting System

Location:		Month:
S.no	Parameters	Value
1	Patient falls	
2	Patient falls as per 1000 adjusted patient days	
3	Needle stick injuries	
4	Patient pressure ulcers	
5	Patient Pressure ulcers per 1000 adjusted patient days	
6	Missing patient records	
7	Missing patients records per 100 discharges	
8	Legal cases against the hospital	
9	Legal cases against the hospital per 100 discharges	
10	Legal action against the hospital	
11	Any Sentinel Events	



Apollo Clinical Policies Plans and Procedures

ACPPP

Clinical care

Nursing care

Managerial processes

Utility systems and infrastructure requirement



