Measurement of Teamwork

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A doctor tends to a mortally ill child in Sir Luke Fildes's 1891 painting 'The Doctor.'


The Rise of Teams
A core element of safe, quality care

Overview

Why measure teamwork?

What does good teamwork look like?

What should we measure?

The Global Burden of Unsafe Medical Care: An Observational Study

Hospitalisations per year	**421 million**
Avoidable Adverse Events	42.7 million
Lost DALYs	23 million years

The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.

Jha & Bates. Quality and Safety in Healthcare 2013

American closed claims analysis

Communication breakdowns and lapses in teamwork are the second leading cause of intraoperative error resulting in preventable patient harm, after technical errors.

Rogers, Gawande et al. Analysis of surgical errors in closed malpractice claims at 4 liability insurers. *Surgery*. 2006;140: 25–33.

Gawande , Zinner et al. Analysis of errors reported by surgeons at three teaching hospitals. *Surgery*. 2003;133:614–621.

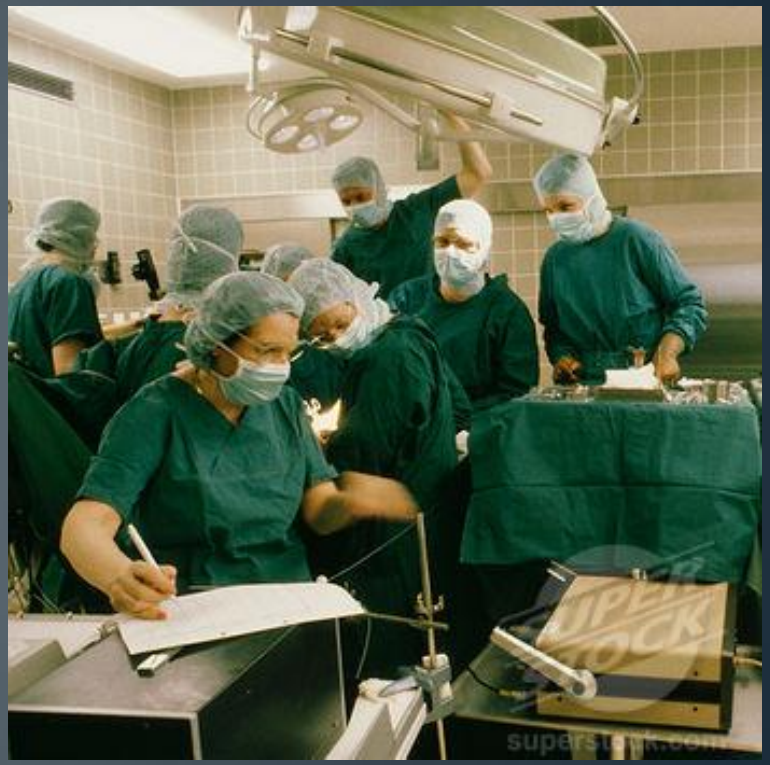
Healthcare requires a team approach

Analyses of adverse events: communication and teamwork failures common contributory factors

¼ of OR communications fail: inappropriate timing, inaccurate or missing content, failure to resolve issues.

>36% have visible effects: tension in the team, inefficiency, waste of resources, delay or procedural error

(Lingard et al. 2004)



The operating theatre is particularly vulnerable to teamwork failures

"If you can't measure it you can't improve it"

Pros and cons of measuring things

- Quality improvement
- Explicit criteria
- Only measure the easily measurable.

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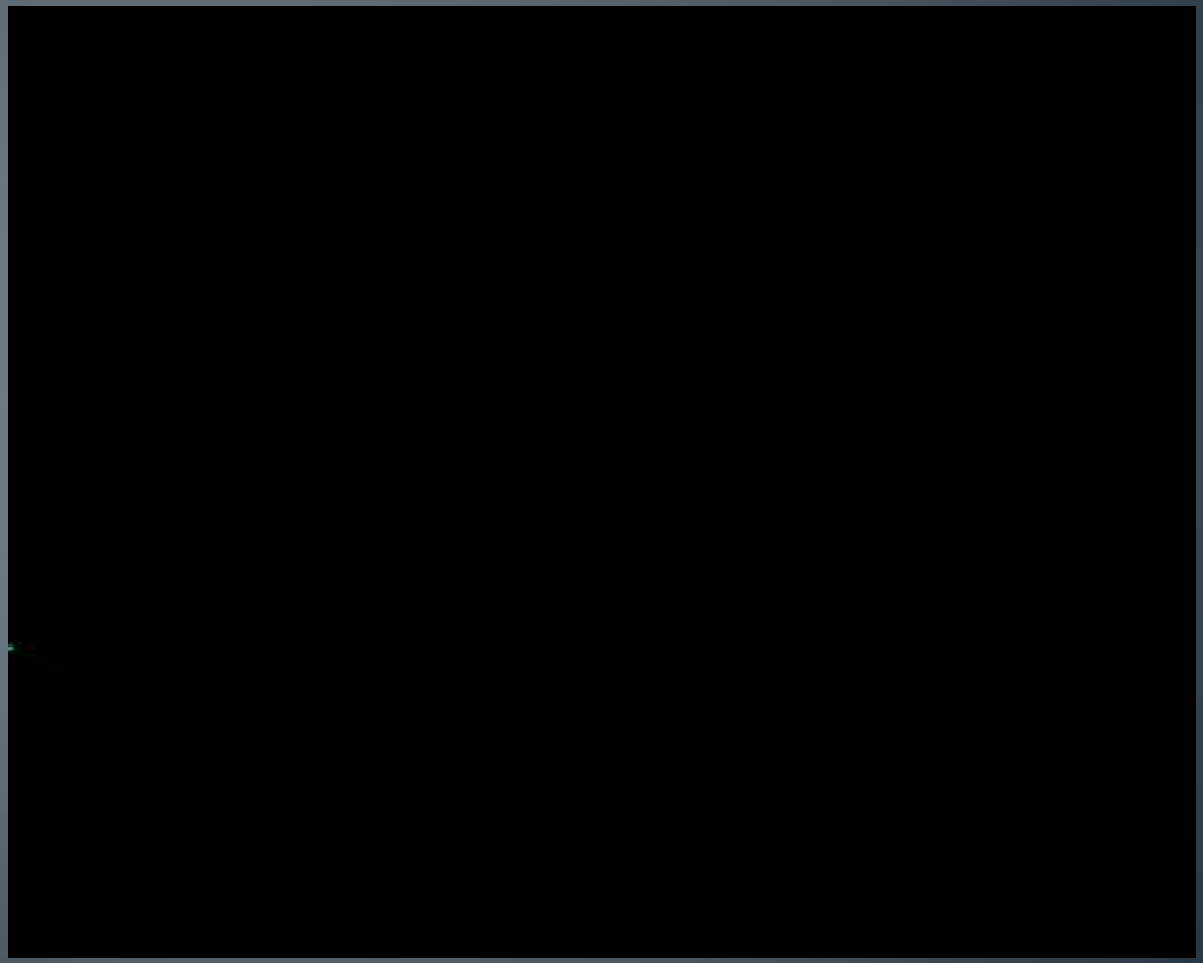
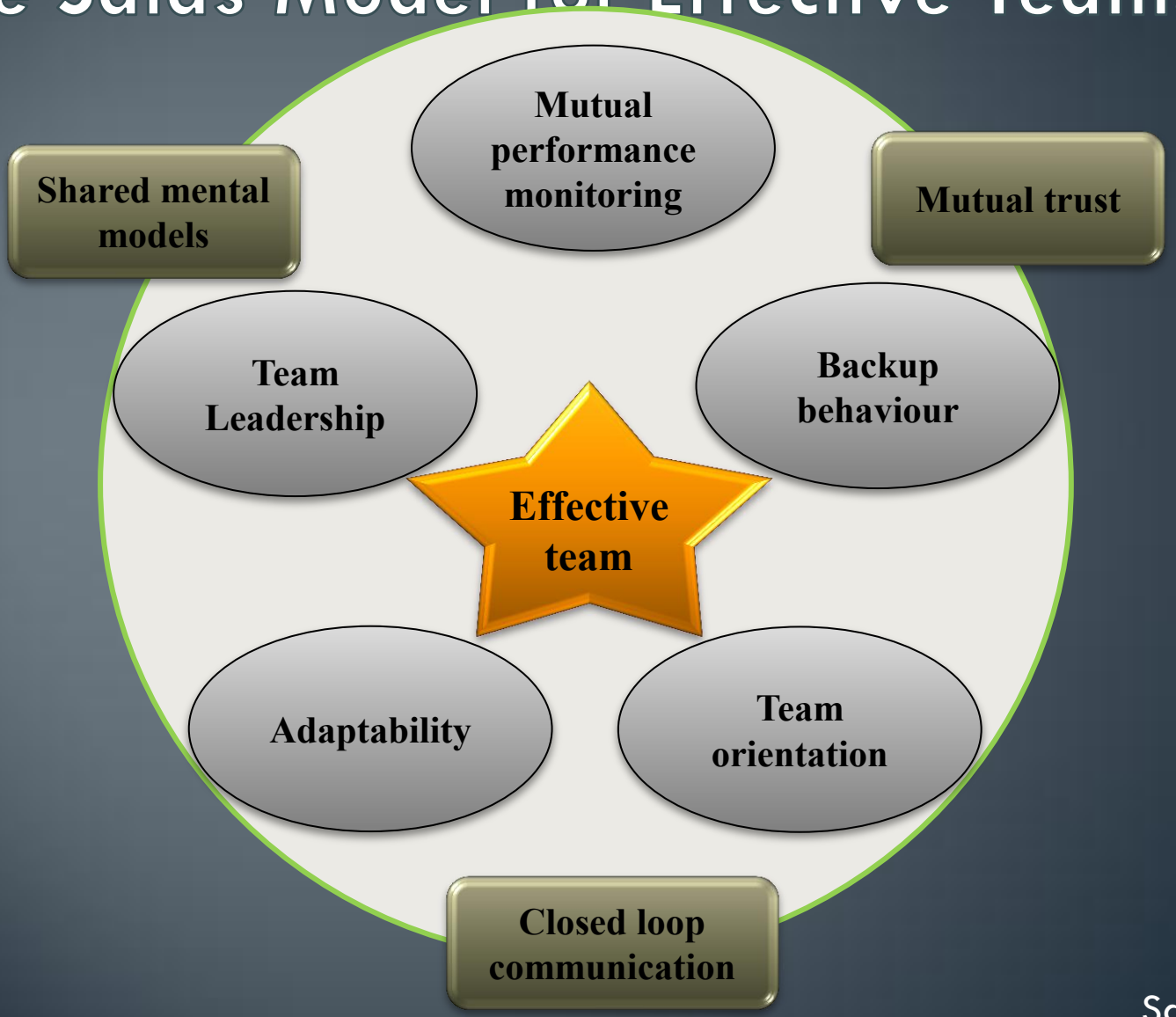
Formula 1 Pit Stop Team

Hospital Medical Emergency Team

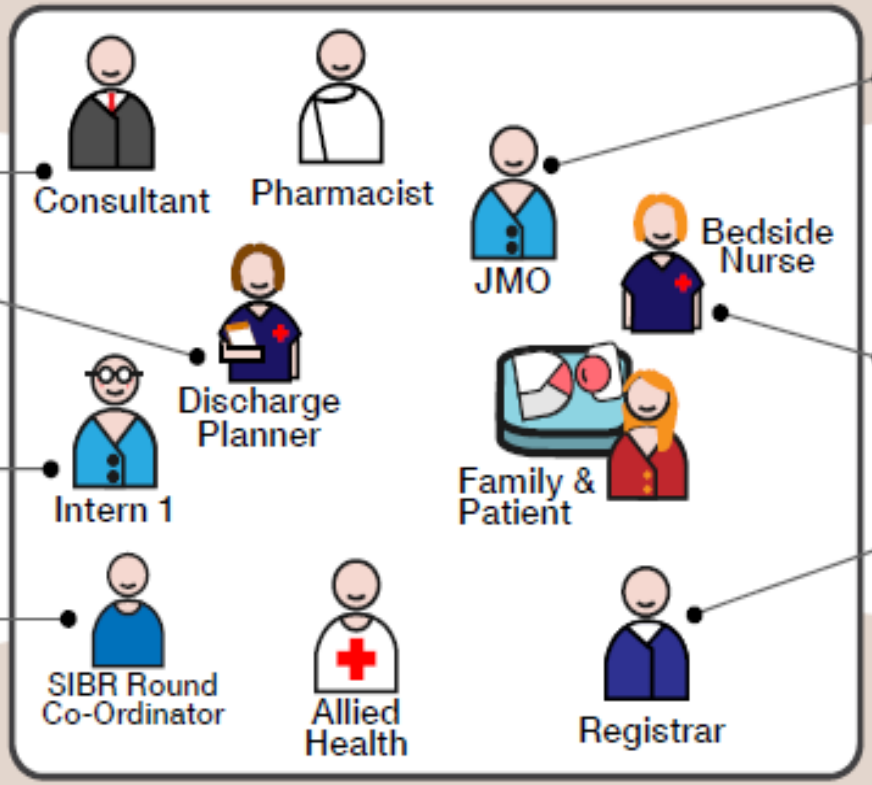


The Salas Model for Effective Teams



Salas 2005

Structured Interdisciplinary Bedside Rounds



Ensure Hi Level SIBR Performance
a) Coach team members as needed
b) Step into JMO or registrar role as needed

Confirm Plan for Discharge
a) Discharge needs & next site of care
b) Anticipated day of discharge

Enters orders in real-time
a) Management decisions
b) Quality-Safety decisions

Manage SIBR Rounds
a) Ensure next bedside nurse ready for SIBR team
b) Orient new nurses

1. Introduce ≤15 SECONDS
a) Lead team into room, greet patient & family
b) Say name of RN & SW, roles of team members

2a. Update hospital course ≤45 SECONDS
a) Review active problems & response to treatmant
b) Discuss interval test results/consultant inputs
c) Invite inputs from patient & family, then nurse..

2b. Update Current Status ≤45 SECONDS
a) Overnight events & patient's goal-for-the-day
b) Vital signs & call modifications
c) Fluid & food intake
d) urine and bowel output
e) Mental status and mobility

3. Quality-Safety Checklist (address each item) ≤15 SECONDS
- ☐ Resus status (Red Form)
- ☐ IVC & IDC
- ☐ Pressure ulcer location and stage
- ☐ VTE Prophylaxis
- ☐ Falls risk score

4. Synthesize inputs ≤30 SECONDS
- ☐ Plan-for-the-day with assigned responsibilities.
- ☐ Discharge Planning Checklist
- ☐ Next site-of-care & discharge needs
- ☐ Estimated discharge date

5. Re-direct to stay on time & teach as able ≤30 SECONDS
a) Educate patient with Teach-Back
b) Teach physical findings or pathophysiology

ACUTE MEDICAL UNIT

SIBR Certified

Jason Stein et al [abstract]. Journal of Hospital Medicine 7 Suppl 2 :115

OR SURGICAL SAFETY CHECKLIST

BEFORE INDUCTION OF ANESTHESIA → BEFORE SKIN INCISION → BEFORE PATIENT LEAVES ROOM

(Nurse or anesthetist reads out loud)

Has the patient confirmed:
- ❑ Identity
- ❑ Site
- ❑ Procedure
- ❑ Consent
- ❑ Surgical site marked?

Does the patient have a known allergy:
- ❑ Yes ❑ No

Difficult airway/aspiration risk?
- ❑ No
- ❑ Yes, and equipment/assistance available

Risk of > 500ml blood loss or (7ml/kg in children)?
- ❑ No
- ❑ Yes, and two IVs/central access and fluids planned.

Risk of hypothermia (operation >1hr)?
- ❑ No
- ❑ Yes, and warmer in place

Anticipated Critical Events

Surgeon reviews:
- ❑ Are there any patient–specific concerns?

Anesthesiologist Reviews:
- ❑ Are there any patient-specific concerns?

Nursing team Reviews:
- ❑ Are there equipment issues?
- ❑ Are there any patient-specific concerns?

Surgical Scrub Reviews:
- ❑ Medications on field

Are there special requests for this case?

* BEFORE INDUCTION check complete *

(Circulator Calls Time -Out)

After induction of anesthesia

- ❑ **Confirm all team members have names & roles written on the white board.**

Time Out

Surgeon, anesthesiologist, scrub, circulator nurses verbally confirm:
- ❑ Patient identification
- ❑ Procedure
- ❑ Side / Site

Has antibiotic prophylaxis been given within the last 60 minutes?
- ❑ Yes
- ❑ Not applicable

Operative duration?
- ❑ If case longer than 4 hours antibiotic re-dosing necessary

Is essential imaging displayed?
- ❑ Yes
- ❑ Not applicable

* BEFORE SKIN INCISION check complete *

(Nurse reads out loud)

Nurse verbally confirms with the team:
- ❑ Name of the procedure recorded
- ❑ Instrument, sponge & needle counts are correct
- ❑ How the specimens are labeled (including patient name) and disposition
- ❑ Whether there are any equipment problems to be addressed

- ❑ Surgeon, anesthesiologist, and nurse review the key concerns for recovery and management of this patient.

* BEFORE LEAVING ROOM check complete*

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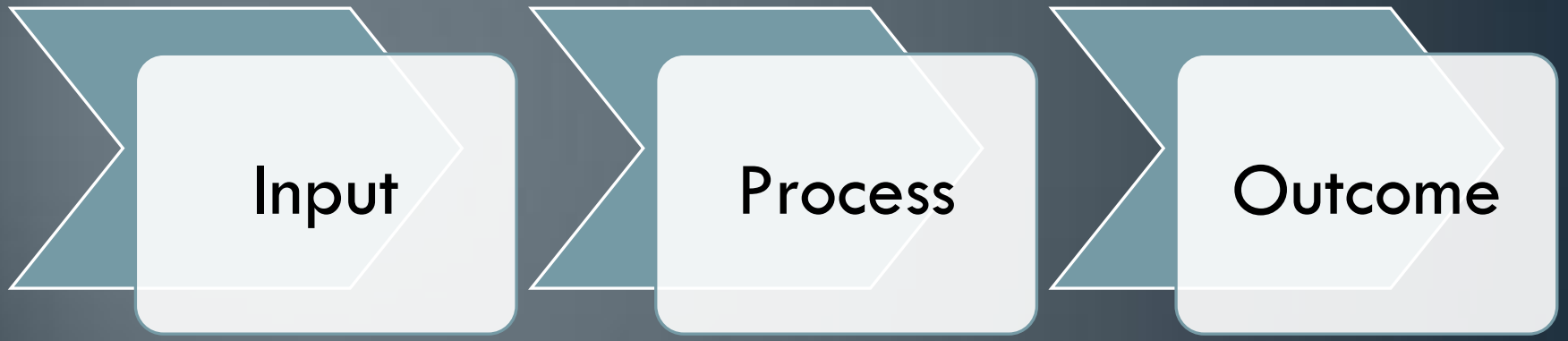

Structures
Culture

Teamwork rating tools
Compliance

Patient Outcomes
Resource utilisation
Staff retention

Measuring teamwork during Time-out

WHO SSC domain	BARS
Setting the stage	***The checklist is initiated appropriately***
Team engagement	***All team members participate in the checklist in an engaged and attentive manner supportive of the process***
Communication: activation	***Activation of all individuals using directed communication and demonstrating inclusiveness by encouraging participation in the process***
Communication: problem anticipation	***Critical patient information is reviewed and matters of concern are discussed and addressed appropriately***
Communication: process completion	***Key safety processes and procedures are reviewed and verified as completed or addressed appropriately if not***

Multidisciplinary Critical Care Teamwork Rater

TASK COORDINATION	A leader was clearly established
	Each team member had a clear role
	Task implementation was well co-ordinated
	The leader maintained an overview of the situation
CLOSED LOOP COMMUNICATION	The leader's instructions were explicit
	The leader's instructions and communications were directed.
	Team members closed the communication loop.
	Team members verbalised their clinical actions to each other
MUTUAL TRUST	When expressions of concern to the leader did not elicit an appropriate response, team members persisted in seeking a response, or took action
	The team leader responded to questions or requests for clarification.
SHARED MENTAL MODEL	The leader's plan for treatment was communicated to the team
	Priorities and orders of actions were communicated to the team
	The leader verbalised possible future developments or requirements.
	Team members verbalised situational information to the leader
	The team leader gave a situation update when the situation changed.
BACK UP BEHAVIOUR	Team members sought assistance from each other.
	Team members offered assistance to one other.
	The team leader invited suggestions when problem-solving.
	When faced with a problem, the team leader sourced external assistance

Weller et al. Qual Saf Healthcare 2011

Example of descriptors: Each team member had a clear role

Excellent: The leader explicitly designated roles to team members by name. All required roles were taken on. No duplication or confusion over roles was evident.

Average: It was generally clear what each person's role was, and on most occasions, the required roles were covered.

Poor: No designation of roles occurred. Some roles were unassigned. It was unclear what team members should be doing.

Operating Room Team Assessment Tool (OTAS)

COMMUNICATION: quality and quantity of information exchanged.

COORDINATION: management and timing of activities and tasks.

COOPERATION AND BACK UP BEHAVIOUR: assistance provided among members of the team, supporting others and correcting errors.

LEADERSHIP: provision of directions, assertiveness and support among members of the team.

TEAM MONITORING AND SITUATIONAL AWARENESS: team observation and awareness of ongoing processes.

Exemplary behaviour; very highly effective in enhancing team function

Behaviour enhances highly team function

Behaviour enhances moderately team function

Team function neither hindered nor enhanced by behaviour

Slight detriment to team function through lack of/inadequate behaviour

Team function compromised through lack of/inadequate behaviour

Problematic behaviour; team function severely hindered

Hull et al. J Am Coll Surg 2011

Behavioural Marker Risk Index

- **Briefing**: Situation/relevant background shared; patient, procedure, site/side identified; plans are stated; questions asked; ongoing monitoring and communication encouraged
- **Information sharing**: Information is shared; intentions are stated; mutual respect is evident; social conversations are appropriate
- **Inquiry**: Asks for input and other relevant information
- **Vigilance and awareness** : Tasks are prioritized; attention is focused; patient/equipment monitoring is maintained; tunnel vision is avoided; red flags are identified.

Mazzocco Am J Surg 2009

Teamwork rating tools summary

- Multiple published tools
- Context dependent
- Variable supporting psychometric data
- Labour intensive, require rater training
- Useful for self-assessment, intensive educational interventions and research

Conclusion

Improving teamwork and communication will save lives.

A measure of teamwork can facilitate improvement.

Good teamwork looks like ……

We should measure input, process and outcomes.