World Health Organization | Patient Safety

A World Alliance for Safer Health Care

The WHO Safe Surgery Saves Lives Checklist - Just do it!

Australian Health Insurance Association Conference

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Safe Surgery
Saves Lives

WHO 2nd Global Patient Safety Challenge
Safe Surgery Saves Lives

Working parties:

- Surgical site infection prevention
- Safe anaesthesia
- Safe surgical teams
- Measurement of surgical outcomes – routine surveillance

Safe Surgery as a public health issue

- 234 million major operations / year
- 30% of world population receive 75% of services
- 63 million trauma
- 10 million pregnancy related complications
- 32 million cancer

Permanent disability & death rates in industrialised countries 0.4 – 0.8% but 5 – 10% in developing countries – over 1 million deaths / year

Mortality from general anaesthesia 1 in 150 in Sub-Saharan Africa

Half of all adverse events related to surgical care

Surgical Vital Statistics

WHO member states to collect:

- Number of Operating Rooms
- Number of operations in Operating Rooms
- Number of trauma surgeons and anaesthetic professionals
- Number of deaths on day of surgery
- Number of in hospital deaths

Can then calculate day of surgery and in hospital mortality rates

Checklists used for verification

- Enhances communication
- Facilitates teamwork
- Draws the team together
- Facilitates post-op communication- handover made safer
- Empowers all members of the team
- Reduces errors
- Increases best practice adherence
- Improves recall performance
- Are safety checks and reminders

Larson

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DIDN'T WASH HANDS

MEN

12/23

Checklists in surgery

- Counting of instruments, swabs, sponges (nursing)
- Individual and informal by surgical and anaesthetic teams
- Most common widely accepted tool is “Wrong Site, Wrong Patient, Wrong Procedure” prevention using a process involving “Time Out” and surgical site marking

The Checklist

- Produced to help operating room teams reduce patient harm
- 3 principles:
  - Simplicity
  - Wide applicability
  - Measurability
- Process - literature review, consensus among experts, wide consultation, piloting and evaluation

WHO's 10 Objectives for Safe Surgery

1. The team will operate on the correct patient at the correct site.
2. The team will use methods known to prevent harm from administration of anaesthetics, while protecting the patient from pain.
3. The team will recognize and effectively prepare for life-threatening loss of airway or respiratory function.
4. The team will recognize and effectively prepare for risk of high blood loss.
5. The team will avoid inducing an allergic or adverse drug reaction for which the patient is known to be at significant risk.

WHO's 10 Objectives for Safe Surgery

6. The team will consistently use methods known to minimize the risk for surgical site infection.
7. The team will prevent inadvertent retention of instruments or sponges in surgical wounds.
8. The team will secure and accurately identify all surgical specimens.
9. The team will effectively communicate and exchange critical information for the safe conduct of the operation.
10. Hospitals and public health systems will establish routine surveillance of surgical capacity, volume and results.

What is this tool that addresses the 10 objectives?

World Health Organization

SURGICAL SAFETY CHECKLIST (FIRST EDITION)

Before induction of anaesthesia ▸▸▸▸▸▸▸▸▸	Before skin incision ▸▸▸▸▸▸▸▸▸▸▸▸▸	Before patient leaves operating room

SIGN IN

☐ PATIENT HAS CONFIRMED
- IDENTITY
- SITE
- PROCEDURE
- CONSENT

☐ SITE MARKED/NOT APPLICABLE

☐ ANAESTHESIA SAFETY CHECK COMPLETED

☐ PULSE OXIMETER ON PATIENT AND FUNCTIONING

DOES PATIENT HAVE A:

KNOWN ALLERGY?
☐ NO
☐ YES

DIFFICULT AIRWAY/ASPIRATION RISK?
☐ NO
☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE

RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)?
☐ NO
☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

TIME OUT

☐ CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE

☐ SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM
- PATIENT
- SITE
- PROCEDURE

ANTICIPATED CRITICAL EVENTS

☐ SURGEON REVIEWS: WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?

☐ ANAESTHESIA TEAM REVIEWS: ARE THERE ANY PATIENT-SPECIFIC CONCERNS?

☐ NURSING TEAM REVIEWS: HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?

HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?
☐ YES
☐ NOT APPLICABLE

IS ESSENTIAL IMAGING DISPLAYED?
☐ YES
☐ NOT APPLICABLE

SIGN OUT

NURSE VERBALLY CONFIRMS WITH THE TEAM:

☐ THE NAME OF THE PROCEDURE RECORDED

☐ THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT (OR NOT APPLICABLE)

☐ HOW THE SPECIMEN IS LABELLED (INCLUDING PATIENT NAME)

☐ WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED

☐ SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT

THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOCAL PRACTICE ARE ENCOURAGED.

SIGN IN

☐ **PATIENT HAS CONFIRMED**
- IDENTITY
- SITE
- PROCEDURE
- CONSENT

☐ **SITE MARKED/NOT APPLICABLE**

☐ **ANAESTHESIA SAFETY CHECK COMPLETED**

☐ **PULSE OXIMETER ON PATIENT AND FUNCTIONING**

DOES PATIENT HAVE A:

KNOWN ALLERGY?

☐ NO
☐ YES

DIFFICULT AIRWAY/ASPIRATION RISK?

☐ NO
☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE

RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)?

☐ NO
☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

TIME OUT

- ☐ **CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE**

- ☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM**
  - PATIENT
  - SITE
  - PROCEDURE

ANTICIPATED CRITICAL EVENTS

- ☐ **SURGEON REVIEWS:** WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?

- ☐ **ANAESTHESIA TEAM REVIEWS**: ARE THERE ANY PATIENT-SPECIFIC CONCERNS?

- ☐ **NURSING TEAM REVIEWS:** HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?

HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?

- ☐ YES
- ☐ NOT APPLICABLE

IS ESSENTIAL IMAGING DISPLAYED?

- ☐ YES
- ☐ NOT APPLICABLE

SIGN OUT

NURSE VERBALLY CONFIRMS WITH THE TEAM:

- ☐ **THE NAME OF THE PROCEDURE RECORDED**
- ☐ **THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT** (OR NOT APPLICABLE)
- ☐ **HOW THE SPECIMEN IS LABELLED** (INCLUDING PATIENT NAME)
- ☐ **WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED**

- ☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT**

The Checklist was piloted in 8 cities…

PAHO I
Toronto, Canada

EURO
London, UK

EMRO
Amman, Jordan

PAHO II
Seattle, USA

WPRO I
Manila, Philippines

WPRO II
Auckland, NZ

AFRO
Ifakara, Tanzania

SEARO
New Delhi, India

...and was found to reduce the rate of postoperative complications and death by more than one-third!

Haynes et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. New England Journal of Medicine 360:491-9. (2009)

Results – All Sites

	Baseline	Checklist	P value
Cases	3733	3955	-
Death	1.5%	0.8%	0.003
Any Complication	11.0%	7.0%	<0.001
SSI	6.2%	3.4%	<0.001
Unplanned re-operation	2.4%	1.8%	0.047

Haynes et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. New England Journal of Medicine 360:491-9. (2009)

Change in Death and Complications by Income Classification

	Change in Complications	Change in Death
High Income	10.3% -> 7.1%*	0.9% -> 0.6%
Low and Middle Income	11.7% -> 6.8%*	2.1% -> 1.0% $p<0.05$

Haynes et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. New England Journal of Medicine 360:491-9. (2009)

What problems does this checklist address?

- Correct patient, operation and operative site
  - There are between 1500 and 2500 wrong site surgery incidents every year in the United States.[1]
  - NSW 2007

  10 wrong patient / site / procedure in OR

  61 imaging & nuclear medicine,

  2 radiotherapy

  13 in wards

[1] Seiden, Archives of Surgery, 2006.

[2] Incident Mgt in NSW Hospitals 2008

What problems does this checklist address?

- Safe Anaesthesia and Resuscitation
  - An analysis of 1256 incidents involving general anaesthesia in Australia showed that pulse oximetry on its own would have detected 82% of them.[1]

[1] Webb, Anaesthesia and Intensive Care, 1993.

What problems does this checklist address?

- Minimizing risk of infection
  - Giving antibiotics within one hour before incision can cut the risk of surgical site infection by 50%[1, 2]
  - In the eight evaluation sites, failure to give antibiotics on time occurred in almost one half of surgical patients who would otherwise benefit from timely administration

[1] Bratzler, The American Journal of Surgery, 2005.

[2] Classen, New England Journal of Medicine, 1992.

What problems does this checklist address?

- Effective Teamwork
  - Communication is a root cause of nearly 70% of the events reported to the Joint Commission from 1995-2005.[1]
  - A preoperative team briefing was associated with enhanced prophylactic antibiotic choice and timing, and appropriate maintenance of intra-operative temperature and glycemia.[2, 3]

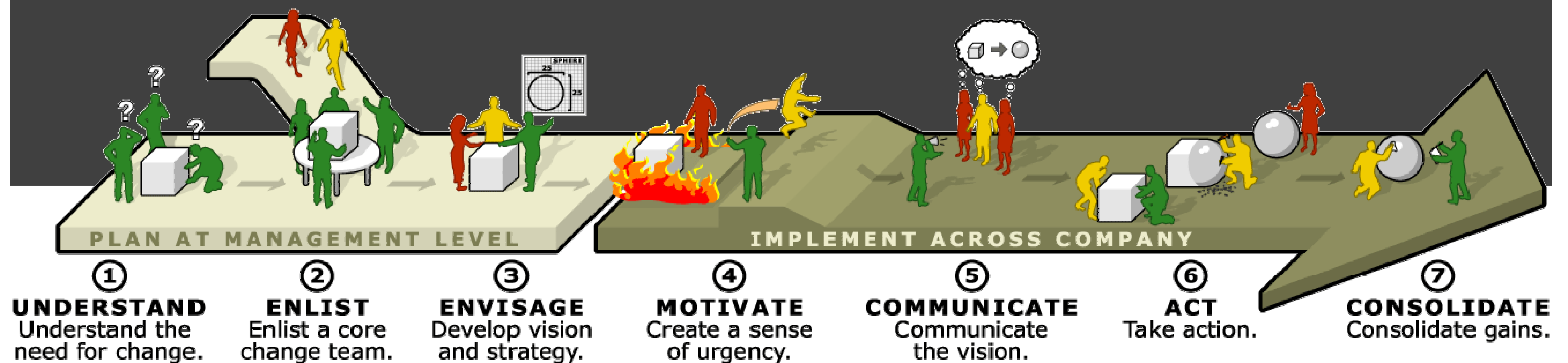
[1] Joint Commission, Sentinel Event Statistics, 2006.

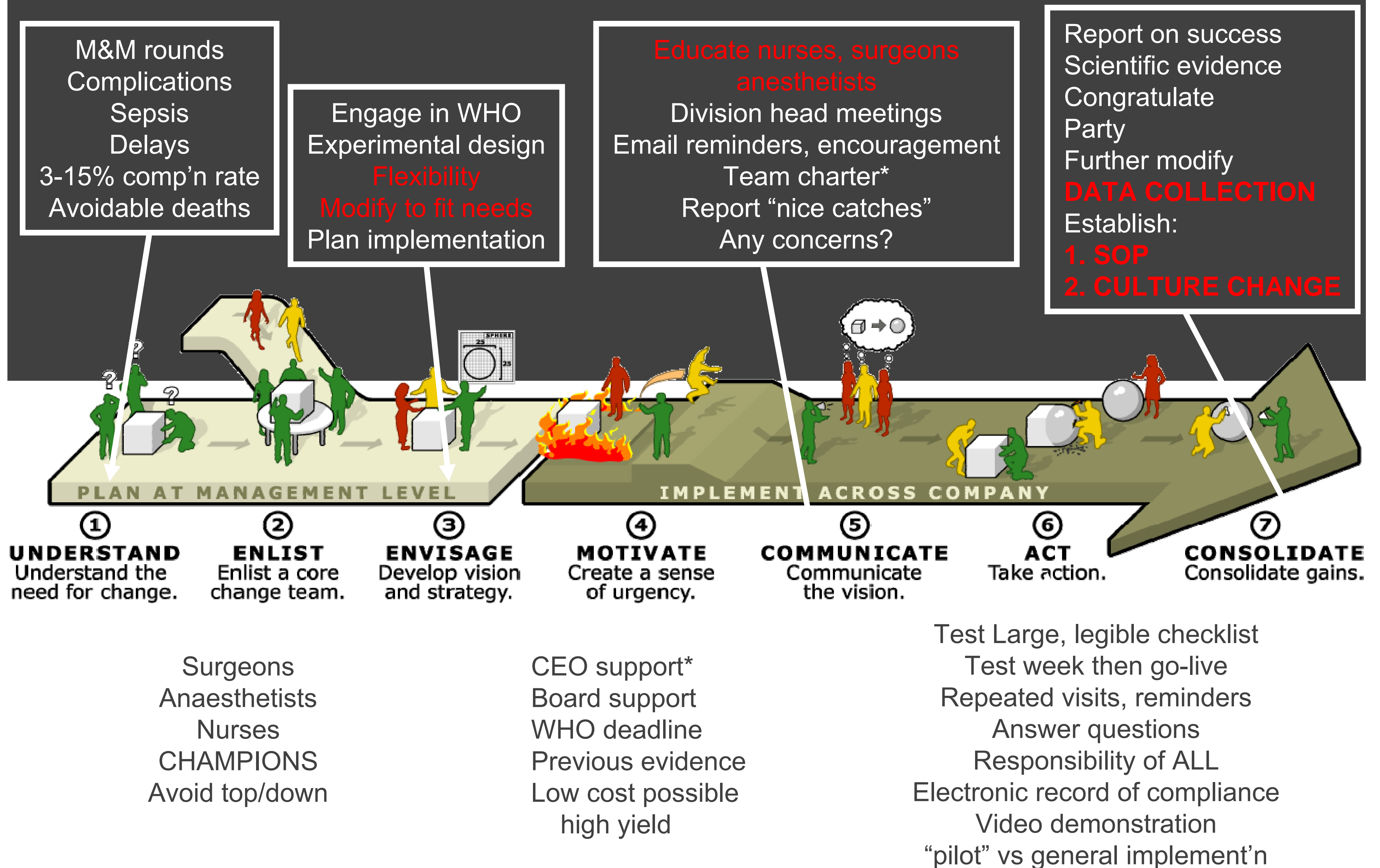
[2] Makary, Joint Commission Journal on Quality and Patient Safety, 2006.

[3] Altpeter, Journal of the American College of Surgeons, 2007.

Implementation of checklist

The 7-step Kotter model of change management





Surgeons
Anaesthetists
Nurses
CHAMPIONS
Avoid top/down

CEO support*
Board support
WHO deadline
Previous evidence
Low cost possible
high yield

Test Large, legible checklist
Test week then go-live
Repeated visits, reminders
Answer questions
Responsibility of ALL
Electronic record of compliance
Video demonstration
"pilot" vs general implement'n

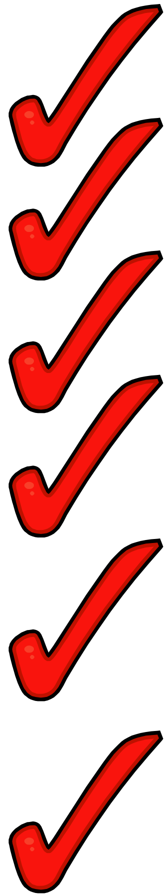
Implementation of the surgical checklist (UHN)
The key points of the "toolkit"

- Prepare and educate *all* stakeholders
- Use evidence to engage OR staff
- Develop champions at every level
- Senior management endorsement (*not* decree!)
- Customize for your hospital (input from all)
- Implement after a brief 'practice run'- persist!!
- Monitor, record and publicize compliance
- Monitor and record 'nice catches', 'learnings'
- Celebrate and reward successes
- Public reporting

Survey of Attitudes to Checklist Use Among Clinicians at Study Sites (n=229)

Statement	%
The checklist was easy to use	78.6%
The checklist improved operating room safety	79.0%
The checklist took a long time to complete	18.3%
Communication was improved through use of the checklist	84.3%
The checklist helped prevent errors in the operating room	78.2%
If I were having an operation, I would want the checklist to be used	92.6%

The ideal setting for change



- Clear recognition of a problem
- A desire to correct the problem
- Intervention to mitigate the problem
- Evidence that the intervention is effective
- Intervention is cheap, doable, not disruptive, and has additional unexpected benefits
- Passionate leadership and teams that buy in

World
Orga

"The real problem isn't how to stop bad doctors from harming, even killing, their patients. It's how to prevent good doctors from doing so."

Gawande 1999 *The New Yorker*

WHO Guidelines for Safe Surgery

- Additional resources available online at

www.who.int/safesurgery

www.safesurg.org