Safety Moment

Use of Checklists as an Administrative Control

University of Calgary |VP Services| Environment, Health and Safety

Published: July 2022

UNIVERSITY OF CALGARY

Introduction of Boeing B-17

In 1935 Boeing introduced the B-17 Bomber

The first B-17 flight resulted in the aircraft stalling shortly after take off

- 3 men died
- Boeing was threatened with collapse following this incident
- The incident investigation discovered that the crash was a direct result of the pilot leaving the elevator lock on – this made the airplane unresponsive to pitch control.

It was determined that this incident was not due to pilot error- the aircraft was actually to complex for pilots to fly from memory.

- As a direct result of the complexity of the B-17 Aircraft- the first pilot checklist was developed

UNIVERSITY OF CALGARY

Approved B-17 Checklist

- 18 B-17 bombers flew 1.8 million hours without further incident after the checklist was implemented

- This proved to the government that the B-17 bomber was safe and saved the Boeing company

- 13,000 B-17 bombers flew in World War II and directly contributed to winning the war

World Health Organization (WHO)

2008 Alliance focuses on patient safety during major surgery (major surgery involves incision, excision, suturing, anaesthesia or sedation)

- Complications reported in up to 16% of procedures
- Death rate of up to 10% in developing countries
- 7 million patients harmed annually

UNIVERSITY OF
CALGARY

WHO's Plan to Improve Surgical Safety

- Identify a simple set of surgical safety standards that are applicable in all countries and settings and are compiled in a checklist for use in operating rooms

- By testing and disseminating the Checklist and surveillance measures at pilot sites in every WHO region initially, and then to hospitals worldwide.

- Based on the studies implemented by the Alliance
  - WHO implemented a 4 part corrective action plan to improve surgical patient safety around the world
  - The plan included the development of a surgical safety checklist

UNIVERSITY OF
CALGARY

Example of the First Edition

Today, improved versions of the checklist are used around the world

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 IN 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.

UNIVERSITY OF CALGARY

Types of Checklists

- Do- Confirm checklist
    - used for jobs that are performed by memory or habit
    - Typically used for procedures and tasks completed in a specific order
    - Confirms all steps were completed
    - *Coordinating teams , complex tasks, procedural tasks*

- Read-Do Checklists
    - Used as an outline to carry out tasks as they are read, checked off when complete
    - Good for infrequent tasks, tasks with no particular order
    - *Troubleshooting, action plan, preventative maintenance, packing list, workplace inspections*

References

- Angle of Attack – What the B17 Taught us About Checklists
https://www.flyaoamedia.com/aoa/what-the-b17-taught-us-about-checklists/
https://www.flyaoamedia.com/wp-content/uploads/2009/12/checklist03.jpg

- World Health Organization – Safe Surgery: Tool and Resources
https://www.who.int/teams/integrated-health-services/patient-safety/research/safe-surgery/tool-and-resources

- SafeStart – 5 Types of Safety Checklists that Help Prevent Catastrophes
https://safestart.com/news/5-types-of-safety-checklists-that-help-prevent-catastrophes/

UNIVERSITY OF CALGARY