# Compliance with the WHO Surgical Safety Checklist and barriers to its long-term use: a mixed-methods evaluation study in a Benin's teaching hospital

A Yedenou, NFE Capo-Chichi, I Lawani

UNIVERSITY OF CALGARY
CUMMING SCHOOL OF MEDICINE
Department of Surgery

2025Bethune
Round Table

# Introduction

- ***"Too much airplane for one man to fly"***

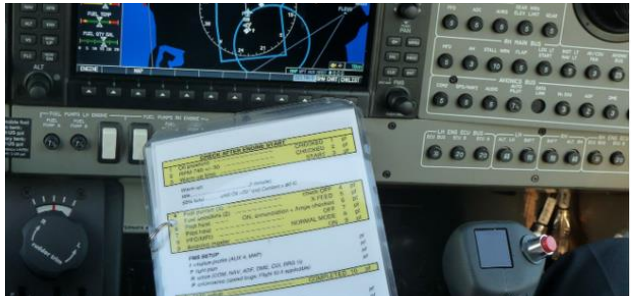
- Tragic crash of Boeing model 299

- No cause linked to a technical failure

- Development of the pilot's checklist

- **Why a Surgical Safety Checklist (SSC) ?**

*Crash of Boeing-17, Ohio, 1935*



*Creation of the pilot's checklist*

# Introduction

- Global operative volume

226.4 millions (2004) → 312.9 millions (2012)

- High rates of surgical adverse events
- Patient safety in the operating theatre
- **WHO Surgical Safety Checklist (2009)**

**Before induction of anaesthesia**
(with at least nurse and anaesthetist)

**Before skin incision**
(with nurse, anaesthetist and surgeon)

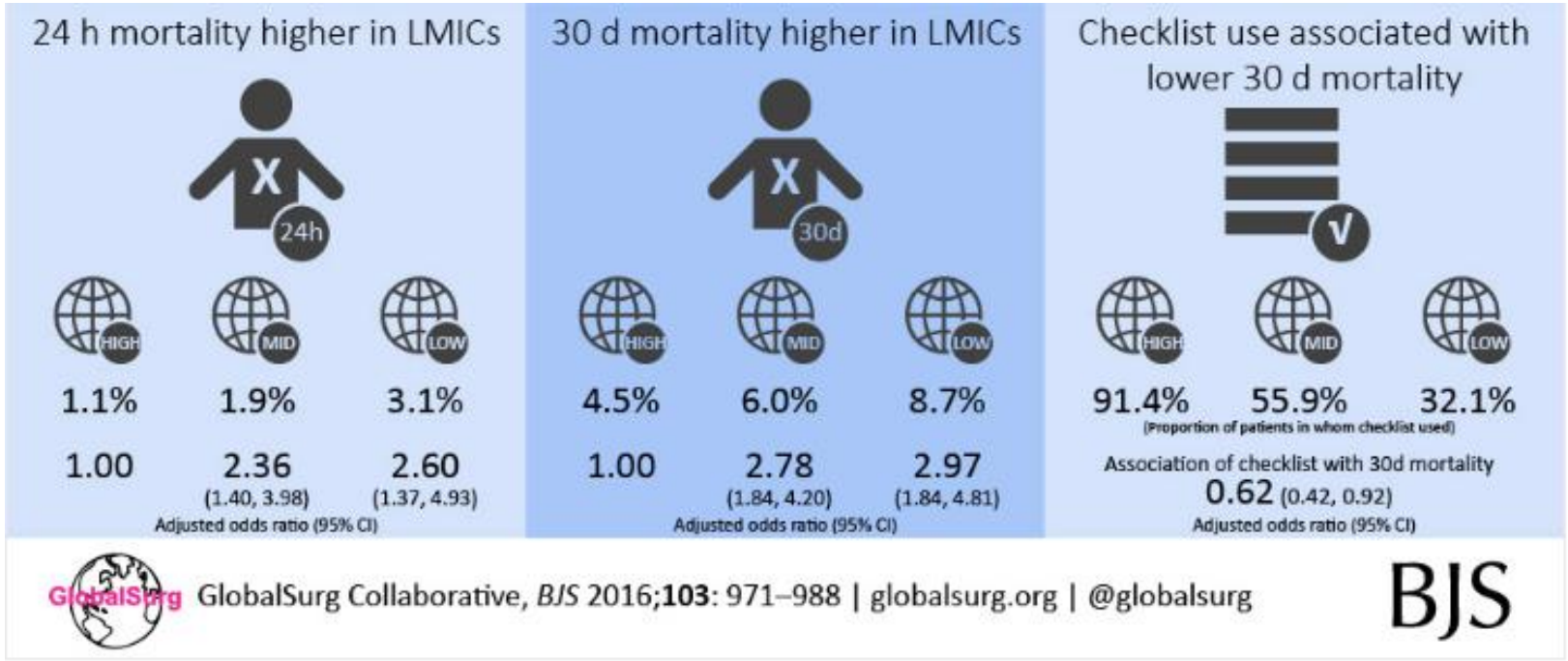
**Before patient leaves operating room**
(with nurse, anaesthetist and surgeon)

# Introduction

- **Existing evidence on the SSC efficiency**

## A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population

Alex B. Haynes, M.D., M.P.H., Thomas G. Weiser, M.D., M.P.H.,

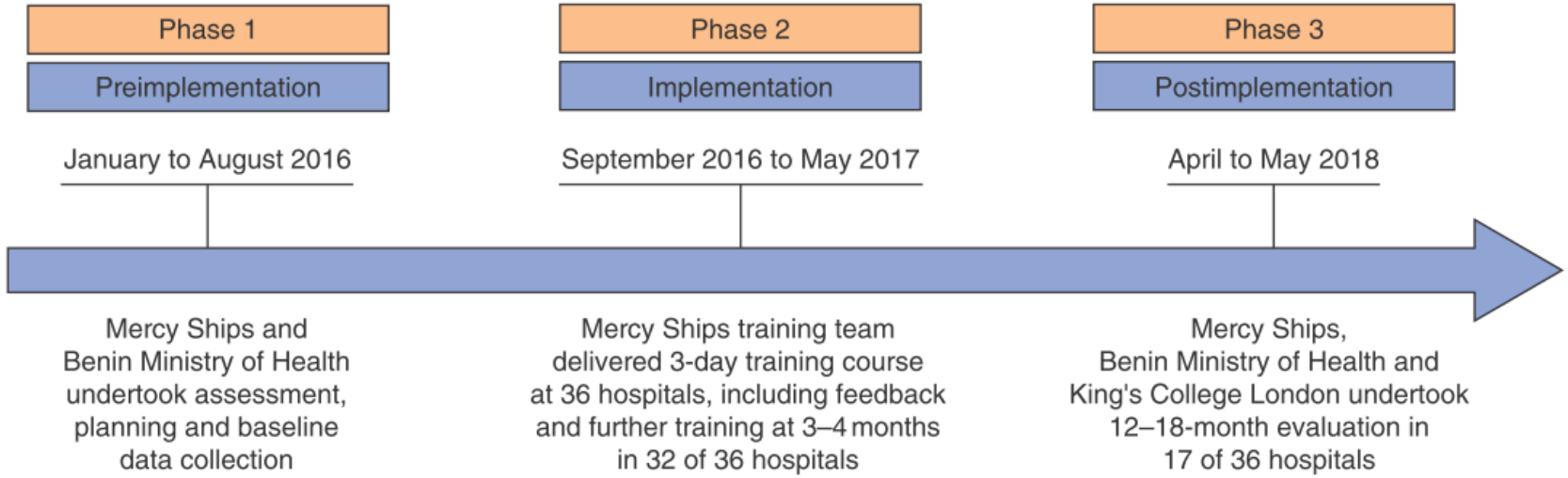


# Introduction

- **Implementation and nationwide scale-up of the SSC, Benin, 2018**

## Implementation and evaluation of nationwide scale-up of the Surgical Safety Checklist

M. C. White[1,4,6], K. Randall[1], N. F. E. Capo-Chichi[2], F. Sodogas[3], S. Quenum[1], K. Wright[1], K. L. Close[1], S. Russ[5], N. Sevdalis[5] and A. J. M. Leather[4]



# Introduction

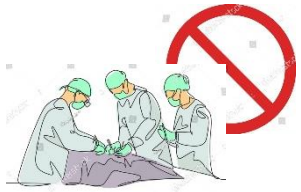
- **Study rationale**
  - No long-term evaluation carried out since national implementation
  - Long-term use of the SSC seems to be increasingly poor in Benin's health facilities
  - Need to take stock of the situation and investigate the barriers limiting its integration into the perioperative routine
- **Research questions**

Operative volume

*What is the estimate of surgical volume in the CHUD-OP surgery department in 2023 ?*

Compliance to SSC

*What is the compliance rate to the SSC and associated factors ? What are perceptions, attitudes and experiences of the surgical staff regarding SSC ?*



Attitudes, experiences and barriers

*What are the barriers to the utilization of the SSC in the CHUD-OP surgery department in 2023?*

# Study objectives

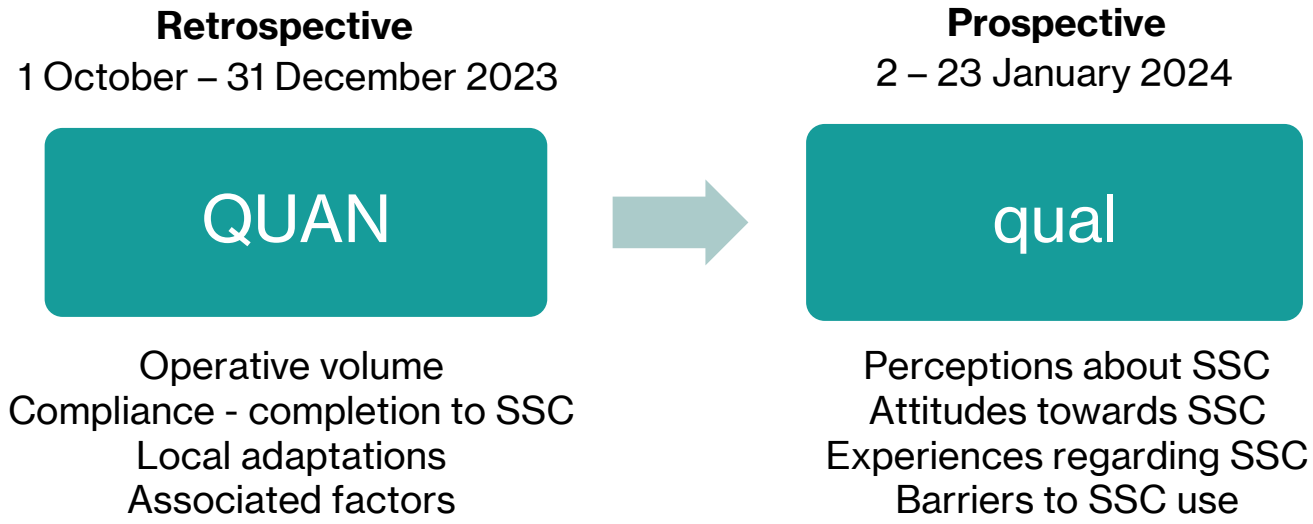
- **General objective:** To assess the utilisation of the SSC and its associated factors in the surgery department of CHUD-OP in 2023.

- **Specific objectives**
  - To assess the operative volume in the surgery department of CHUD-OP in 2023
  - To estimate the compliance rate with the SSC in the surgery department of CHUD-OP in 2023
  - To identify the factors associated with compliance with the SSC at CHUD-OP in 2023.
  - To explore the barriers to the sustained use of the SSC in surgery department of CHUD-OP in 2023

# Methodology

- **Study setting**
  - CHUD-OP ; Surgery department.
  - In **2018**: national implementation site.
  - In **2023**
    - ✓ Surgical staff **training** on SSC
    - ✓ **Standardisation** of SSC use

- **Study design**
  - Mixed – methods
  - Sequential explanatory design



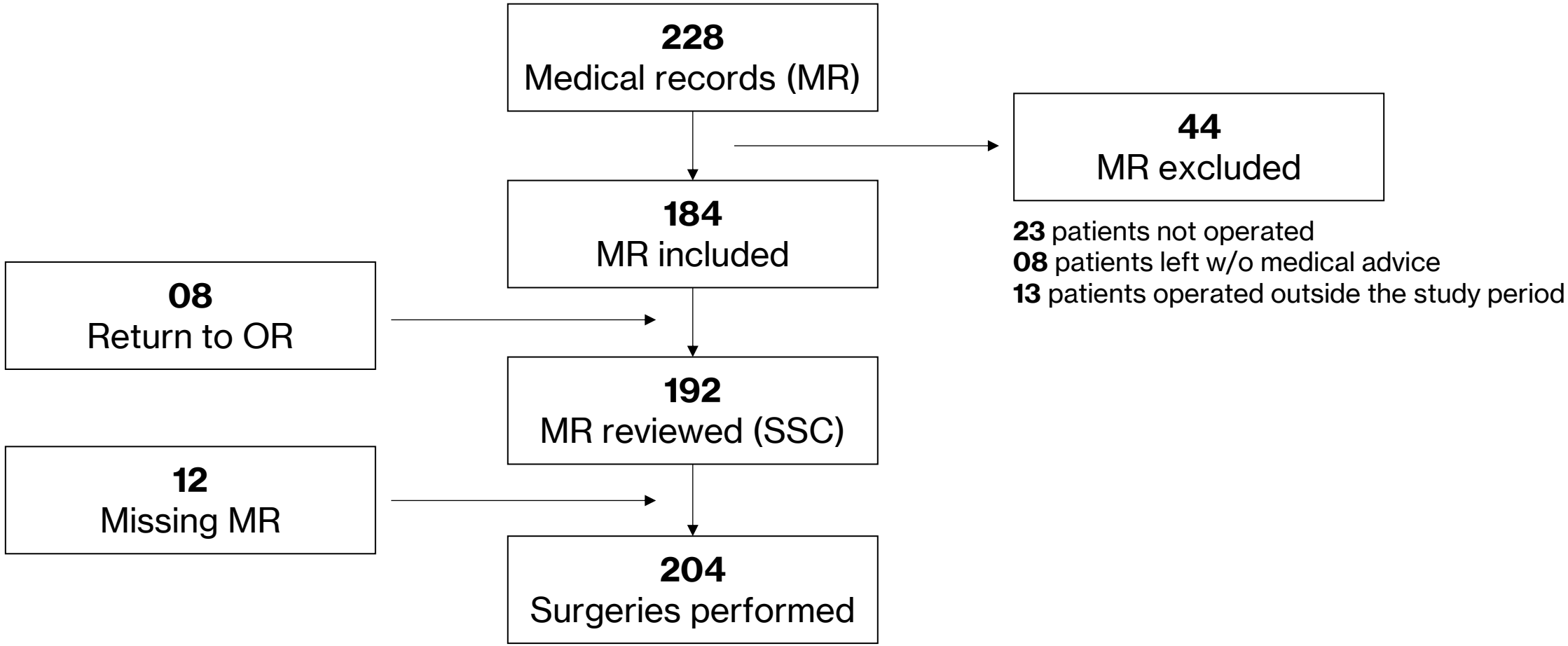
# Methodology

- **Quantitative strand**
  - **Design:** Analytical cross-sectional study
  - **Study population:** patients who underwent a surgical procedure (October – December 2023)
  - **Sampling**: Non-probability (184 surgical patients)
  - **Data sources:** medical records, logbooks (electronic tally sheet)
  - **Variables**
    - ✓ Dependent: using the checklist (presence in the medical record = yes)
    - ✓ Independent: demographics, surgeries characteristics, SSC items
  - **Data analysis :** descriptive and inferential statistics

# Methodology

- **Qualitative strand**
  - **Design:** Narrative approach
  - **Study population:** surgical staff (surgeons, anaesthetic, OR nurses, supporting staff)
  - **Sampling**: purposive sampling (attending both trainings on SSC) → 04 SHW
  - **Data collection:** audio-recorded face-to-face semi-structured interviews
  - **Insights:** perceptions, attitudes, lived-experiences, barriers
  - **Data analysis**
    - ✓ Verbatim transcription
    - ✓ Deductive coding (ATLAS.ti) → Munthali et al. framework
    - ✓ Thematic analysis
- **Ethical considerations:** administrative approval, informed consent, ethical clearance,

# Findings: quantitative strand



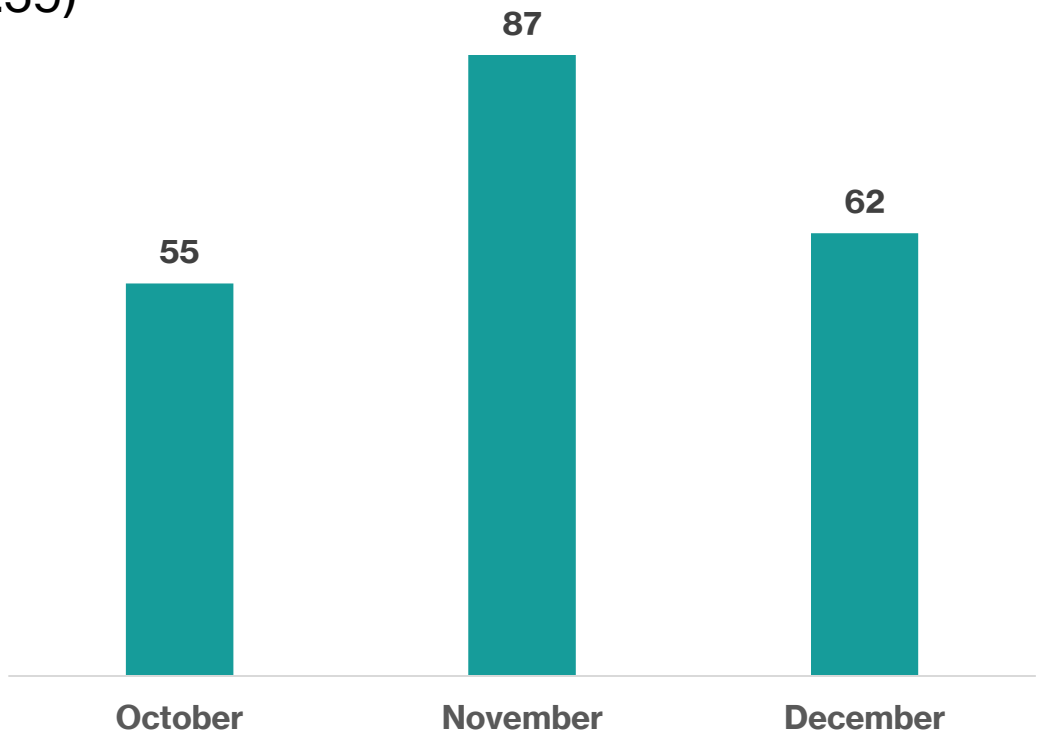

***Patients' recruitment flow chart***

# Findings: quantitative strand

- **Patients' demographics**

  - **Mean age** : 37.2 ± 19.5 yrs (02 yrs ; 90 yrs)
  - **Sex** : male (61.5%); sex ratio (1.59)
  - **Region** : rural (50.0%)

- **Operative volume**
  - Absolute operative volume: **204**



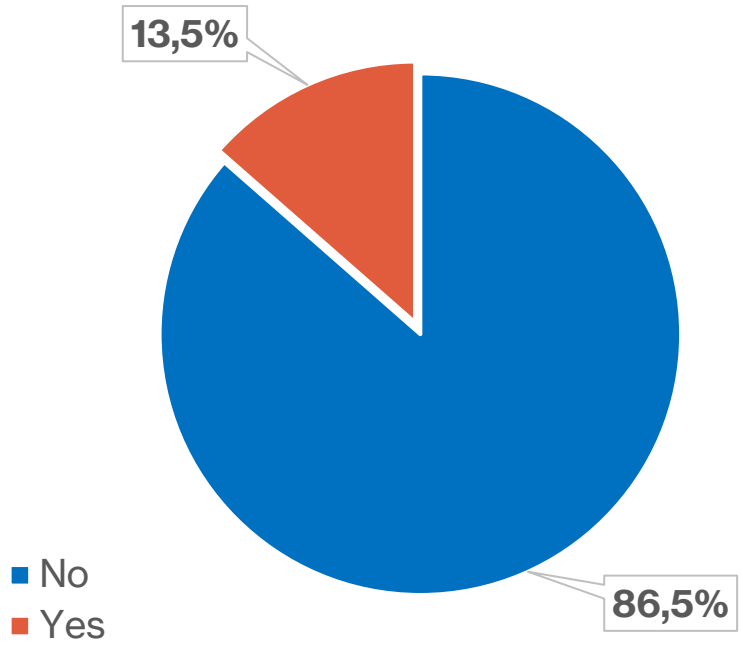
# Findings: quantitative strand

- **Surgeries characteristics**

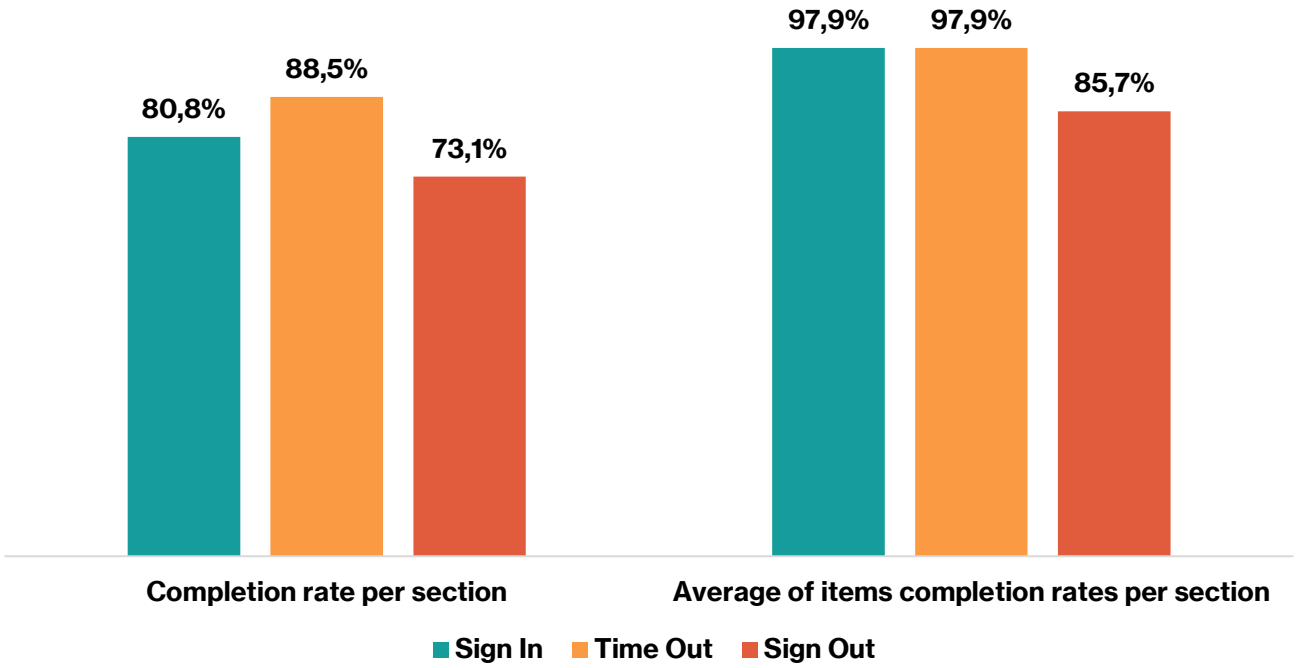
  - **Elective/urgent** : urgent **(67.2%)**
  - **Day time** : day 8 AM – 5 PM **(60.4%)**
  - **Complexity** : major surgeries **(71.4%)**
  - **Week period** : open days **(72.9%)**
  - **Surgeon** : residents/short-term contract surgeons **(94.3%)**
  - **Surgical specialty** : visceral surgery **(53.7%)**
  - **Anaesthesia** : spinal **(51.0%)**
  - **Pathology** : traumatic injuries **(32.8%)**

# Findings: quantitative strand

## SSC compliance rate




## SSC completion rate




**Associated factors**

- Operating surgeon : OR = 24; p<0.001
- Week day : OR = 7.43; p = 0.015
- Standardisation of SSC : OR = 0.05; p<0.001

# Findings: qualitative strand

*“You'll have forms filled in, but they're not checklists (ADM)”*


Lack of training

Low engagement of the administratives

Lack of M&E in the process of SSC implementation

ORGANISATION LEVEL

Checklist is not yet part of the surgical staff routine at CHUD-OP

Staff shortages

Non availability of surgical instruments

SYSTEM LEVEL

SSC was only carried out when the main operating surgeon was a professor.

Laziness

Unstable surgical teams

Level of emergency of the procedure

TEAM LEVEL

Surgical staff are not demanding about the SSC

SSC minimised for certain surgical procedures

# Conclusions

- Poor compliance rate (13.5%)
- Moderate overall completion rate (53.9%)
- Associated factors
  - Operating surgeon
  - Week day
  - SSC standardisation
- Barriers to the sustained use
  - Staff shortages
  - Inconsistent training
  - Urgent procedures

# Recommendations

- To include lectures on the WHO SSC in training curricula (doctors, surgical residents, Gyn-Ob, nurses)
- To set up monitoring & evaluation committees
- To encourage the use of checklists in clinical medicine
- To institutionalise the use of the WHO SSC at national level

# Thank you!

**Aimé Yedenou MD**

Global Surgery Research Fellow

yedzinck@gmail.com

+229 61 35 22 57