



World Health
Organization

Patient Safety

A World Alliance for Safer Health Care



Safe Surgery Saves Lives

Surgical Public Health:

The World Health Organization and the Safe Surgery Saves Lives Campaign

NAME, TITLE

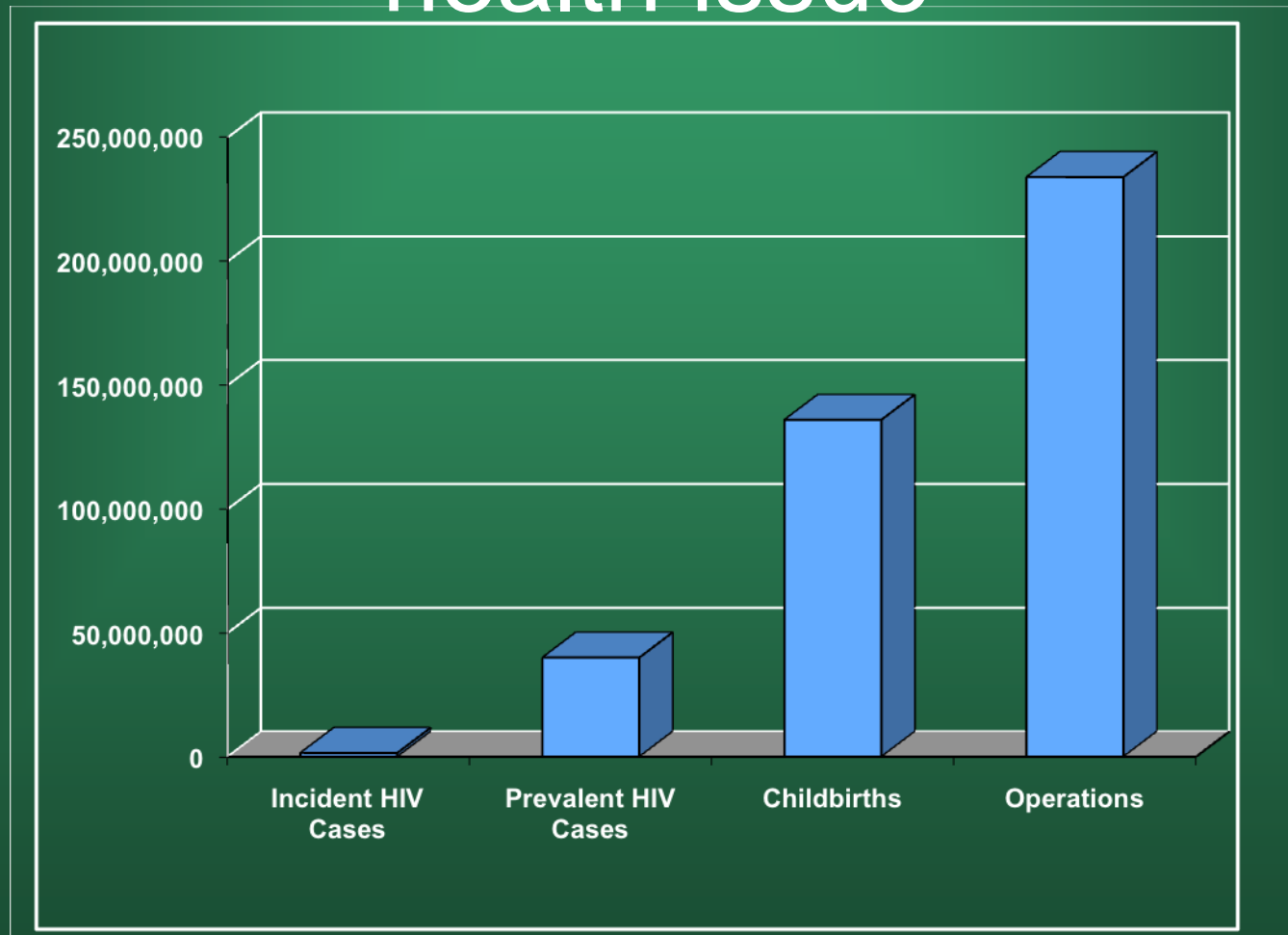
OCCASION

DATE

3 Central Problems in Surgical Safety

1. Unrecognized as a public health issue
2. Lack of data on surgery and outcomes
3. Failure to use existing safety know-how

Problem 1: Unrecognized as public health issue



234 million operations are done globally each year

Problem 1: Unrecognized as public health issue (cont.)

- Burden of surgical disease is increasing worldwide
 - Cardiovascular disease
 - Traumatic injuries
 - Cancer
 - Longer life expectancies

Problem 1: Unrecognized as public health issue (cont.)

- Known surgical complications of 3-16%
 - Known death rates of 0.4-0.8%
- =
- At least 7 million disabling complications – including 1 million deaths – worldwide each year

Problem 2: Lack of Data on Surgery and Outcomes

- Improvements in maternal mortality depended on routine surveillance
- Such surveillance is lacking for surgical care

Problem 3: Failure to use existing safety know-how

- High rates of preventable surgical site infection result from inconsistent timing of antibiotic prophylaxis
- Anesthetic complications are 100-1000x higher in countries that do not adhere to monitoring standards
- Wrong-patient, wrong-site operations persist despite high publicity of such events

The Safe Surgery Saves Lives Strategy

1. Promotion of surgical safety as a public health issue
2. Creation of a checklist to improve the standards of surgical safety
3. Collection of “Surgical Vital Statistics”

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 (cont.)

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.

Reality Check

Currently, hospitals do MOST of the right things, on MOST patients, MOST of the time.

The Checklist helps us do ALL the right things, on ALL patients, ALL the time

Advantages of Using a Checklist

- **Customizable** to local setting and needs
- **Supported** by evidence
- **Evaluated** in diverse settings around the world
- **Promotes** adherence to established safety practices
- **Minimal resources** required to implement a far-reaching safety intervention

What is this tool that addresses the 10 objectives?

Surgical Safety Checklist



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Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?

Yes

Is the site marked?

Yes
 Not applicable

Is the anaesthesia machine and medication check complete?

Yes

Is the pulse oximeter on the patient and functioning?

Yes

Does the patient have a:

Known allergy?

No
 Yes

Difficult airway or aspiration risk?

No
 Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?

No
 Yes, and two IVs/central access and fluids planned

Before skin incision

(with nurse, anaesthetist and surgeon)

Confirm all team members have introduced themselves by name and role.

Confirm the patient's name, procedure, and where the incision will be made.

Has antibiotic prophylaxis been given within the last 60 minutes?

Yes
 Not applicable

Anticipated Critical Events

To Surgeon:

What are the critical or non-routine steps?
 How long will the case take?
 What is the anticipated blood loss?

To Anaesthetist:

Are there any patient-specific concerns?

To Nursing Team:

Has sterility (including indicator results) been confirmed?
 Are there equipment issues or any concerns?

Is essential imaging displayed?

Yes
 Not applicable

Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:

The name of the procedure
 Completion of instrument, sponge and needle counts
 Specimen labelling (read specimen labels aloud, including patient name)
 Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:

What are the key concerns for recovery and management of this patient?

Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?

Yes

Is the site marked?

Yes

Not applicable

Is the anaesthesia machine and medication check complete?

Yes

Is the pulse oximeter on the patient and functioning?

Yes

Does the patient have a:

Known allergy?

No

Yes

Difficult airway or aspiration risk?

No

Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?

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Before patient leaves operating room

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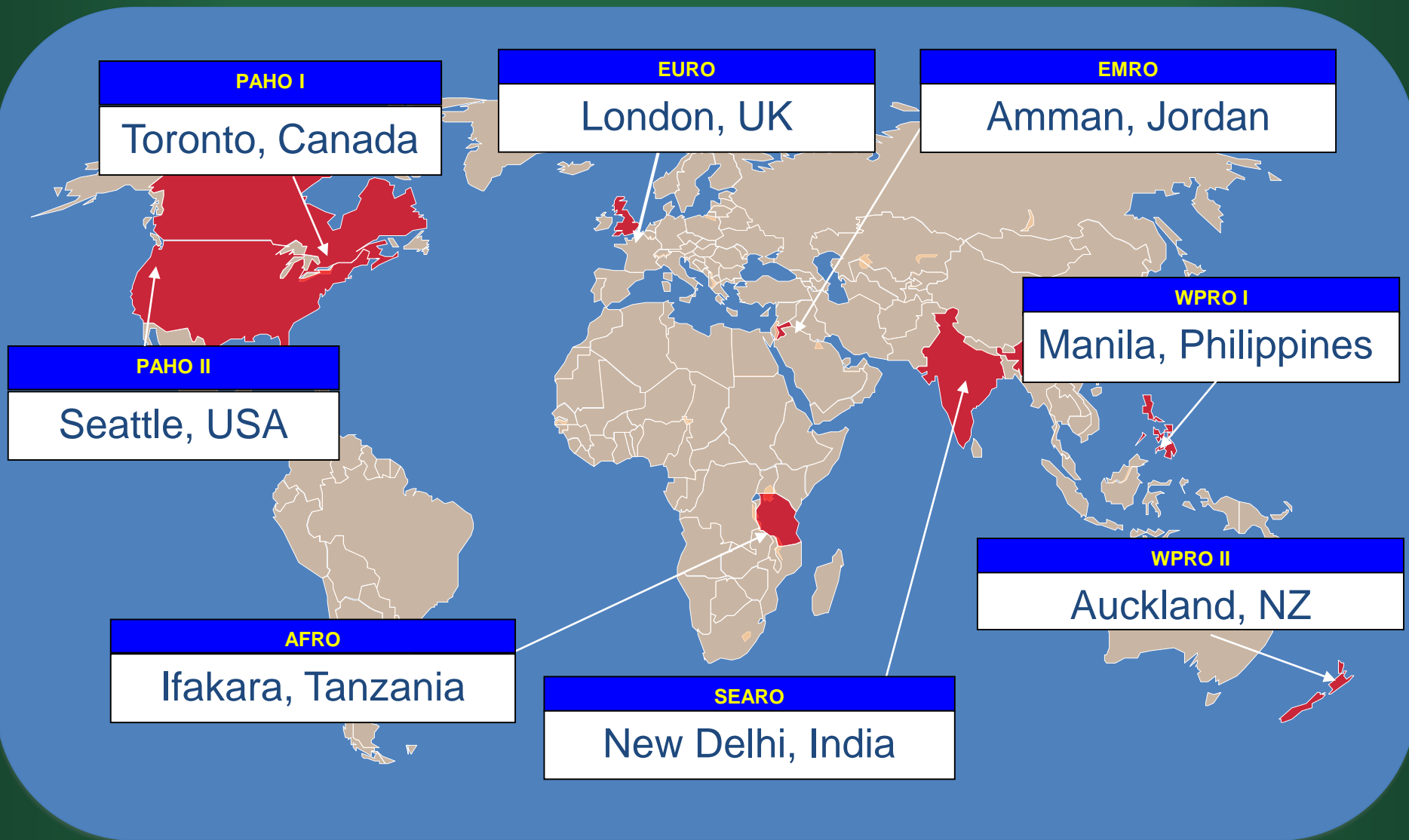
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- Completion of instrument, sponge and needle counts
- Specimen labelling (read specimen labels aloud, including patient name)
- Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:

- What are the key concerns for recovery and management of this patient?

The Checklist was piloted in 8 cities...



...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 Reoperation	2.4%	1.8%	0.047

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?

Before induction of anaesthesia:

Has the patient confirmed his/her identity, site, procedure, and consent?

Yes

Is the site marked?

Before skin incision:

Confirm the patient's name, procedure, and where the incision will be made.

Before patient leaves operating room:

Nurse Verbally Confirms:

The name of the procedure

- Correct patient, operation and operative site

– There are between 1500 and 2500 wrong site surgery incidents every year in the US.¹

– In a survey of 1050 hand surgeons, 21% reported having performed wrong-site surgery at least once in their career.²

¹ Seiden, Archives of Surgery, 2006.

² Joint Commission, Sentinel Event Statistics, 2006.

What problems does this checklist address? (cont.)

Before induction of anaesthesia:

Is the anaesthesia machine and medication check complete?

Yes

Is the pulse oximeter on the patient and functioning?

Yes

Difficult airway or aspiration risk?

No

Yes, and equipment/assistance available

Before skin incision:

To Anaesthetist:

Are there any patient-specific concerns?

- **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? (cont.)

Before skin incision:

Has antibiotic prophylaxis been given within the last 60 minutes?

- Yes
- Not applicable

To Nursing Team:

- Has sterility (including indicator results) been confirmed?

- 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? (cont.)

- **Effective Teamwork**

Before skin incision:

- Confirm all team members have introduced themselves by name and role.**

Before patient leaves operating room:

To Surgeon, Anaesthetist and Nurse:

- What are the key concerns for recovery and management of this patient?

- 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 intraoperative 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.

Data Collection at a National Level (Surgical Vital Statistics)

- Number of surgical procedures performed in the operating theatre per 100,000 population per year
- Number of Operating Theatres per 100,000 population
- Number of surgeons per 100,000 population
- Number of anesthesia professionals per 100,000 population
- Day-of-surgery mortality rate
- Postoperative in-hospital mortality rate

Goals of the Safe Surgery Saves Lives Program

- Enroll 250 hospitals in the program by January 1st, 2009 and 2,500 hospitals by 2010.
- Enroll hospitals in countries representing one fourth of the world's population by 2009 and representing half of the world's population by 2010.
- Collect surgical vital statistics for one country in each WHO region by 2010

Easy Math

234 million people are operated on each year, and >1 million of these individuals die from complications

+ At least $\frac{1}{2}$ are avoidable with the Checklist

500,000 lives on the line each year

Resources & Information Available at:

www.who.int/safesurgery

www.safesurg.org

- Checklist
- Brochure
- FAQ
- How-to videos
- Implementation Manual
- Guidelines
- Starter Kit