

## **Can the use of “WHO Surgical safety checklist” Save lives? Gathering the evidence.**

Dr. Khamis Elessi

Associate Prof. and Head of EBM Unit, Faculty of Medicine-Islamic University-Gaza

**Background:** World health Organization (WHO) has published in 2009, the first edition of the surgery safety checklist (A 20-items tool) that focus on teamwork, communication, adherence to good practice, and anticipation of adverse events. The checklist aims to ensure that teams consistently follow a few critical safety steps and thereby minimize the most common and avoidable risks endangering the lives and well-being of surgical patients worldwide (WHO,2015).

### **Why safe surgery is important: The facts**

Patient safety in operating room has been a persistent topic of conversation in the health care systems. Still, certain seemingly avoidable mistakes — such as operating on the wrong body part or giving an improper medication — continue to occur (2012).

In 2004, the global volume of major surgery was estimated at 234 million cases per year worldwide (Weiser, 2011). Major morbidity complicates 3-16% of all inpatient surgical procedures in developed countries, with death rates of about 0.4-0.8%. In developing countries, death rates are estimated to be between 5-10% for major surgeries [1]. And half of the adverse events were thought to be preventable.

In England and Wales, 129,419 incidents relating to surgical specialties were reported to the National Reporting and Learning Service (NRLS) in 2007 with a range of degrees of harm, including 271 deaths (WHO, 2009).

Previous research has reported crude mortality rate after major surgery to range between 0.5 and 5%; while post-surgical complications occur in up to 25% of patients; mortality from general anesthesia alone is reported to be as high as 1 in 150 in some parts of sub-Saharan Africa. In industrialized nations, half of all recorded adverse events in surgical patients occur in the operating room, which is where the checklist is designed to be used (WHO, checklist, 2009).

**Methodology:** a literature review was conducted to ascertain the evidence of efficacy of the WHO-Surgical Safety checklist in saving lives.

### **Results:**

A pilot testing of the WHO-checklist in 8 sites including Seattle, Toronto, London, Auckland, Amman, New Delhi, Manila, and Tanzania revealed a reduction in major complications from 11% before to 7% after introduction of the checklist in addition to

more dramatically fall of post-surgery inpatient deaths by more than 40 percent (from 1.5% to 0.8%) after implementing the checklist.

The reductions were of equal magnitude in high income and lower income sites in the study. ([http://www.who.int/patientsafety/safesurgery/pilot\\_sites/en](http://www.who.int/patientsafety/safesurgery/pilot_sites/en))

Another research by Dr. Scott Ellner found that use of a surgical safety checklist, paired with training to improve communication in the operating room, reduced complications in the 30-day period after high-risk surgery by more than 15%.

The famous Harvard surgeon Dr. Gawande's research team has estimated that if the WHO Surgical Safety Checklist were implemented in all operating rooms across the U.S., the annual cost-savings from the prevention of major complications would be \$15 billion to \$25 billion per year.

In the study by Ellner and colleagues, published in the December 2012 issue of the Journal of the American College of Surgeons, researchers at Saint Francis Hospital and Medical Center in Hartford compared post-operative complications both before and after surgical team members participated in three 60-minute training sessions on improving operating room communication and using WHO- safe surgery checklist. Comparing their results to 2,079 historical control cases—in which the rate of adverse events in the 30 days after surgery was 23.6%—the researchers found that when teams participated in training sessions but didn't use a checklist (246 cases), the rate of adverse events dropped to 15.9%. When teams had training and used a checklist (73 cases), the rate dropped even further, to 8.2%.

It was also noticed that certain checklist items, when not followed, were associated with statistically significant changes in outcomes. For instance, there were more infections at surgical site, when team members didn't confirm a patient's identity, when the procedure and its site weren't before surgery, or if all the team members weren't introduced to each other before surgery.

It was also noted that implementing the surgical checklists alone is not enough, there must be effective communication and team building which confirmed by Ellner's study findings.

But The Veterans Health Administration's National Center for Patient Safety found significantly better surgery outcomes for hospitals that put their staff through team training, according to one recent study. Some 80 percent of adverse events are attributable to failed communication, notes Gary Sculli, director of clinical training programs and program manager at the NCPS. (2012)

The checklist is one such weapon in the armamentarium of the orthopaedic surgeon (2011)

Despite high acceptance of the checklist among personnel, gaps in knowledge about when the checklist should be used still exist. This can jeopardize effective implementation and correct use of the checklist in hospitals in Guatemala City. Efforts should aim to universal awareness and complete knowledge on why and how the checklist should be used. (Hurtado, 2012)

A Cochrane review (2017) to compare the various Safety interventions showed that combining teamwork training and systems rationalization are more effective than those adopting either approach alone.

### **Conclusions:**

When coupled with team training, the WHO-surgical safety checklist was able to reduce errors, minimize complications and save lives

### **References:**

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October 1, 2012

WHO: New scientific evidence supports WHO findings: a surgical safety checklist could save hundreds of thousands of lives.

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The Cochrane Central Register of Controlled Trials (CENTRAL) 2017 Issue 3--  
Combining systems and teamwork approaches to enhance the effectiveness of safety improvement interventions in surgery: the safer delivery of surgical services (S3) program

A Vats, clinical research fellow,

C A Vincent, director of clinical safety research unit,

K Nagpal, clinical research fellow,

R W Davies, head of strategic development,

A Darzi, head, division of surgery,

K Moorthy, Practical challenges of introducing WHO surgical checklist: UK pilot experience

BMJ 2010; 340 doi: <https://doi.org/10.1136/bmj.b5433> (Published 13 January 2010) Cite this as: BMJ 2010;340:b5433 ----- There are 234 million operations performed globally each year. At least half a million deaths per year would be preventable with effective implementation of the WHO Surgical Safety Checklist worldwide. A surgical safety checklist has gone from a good idea recognized in a pilot study to a global standard of care, which already has saved many thousands of lives.

WHO- (2008) WHO's patient-safety checklist for surgery Published: 05 July 2008

The Lancet, DOI: [http://dx.doi.org/10.1016/S0140-6736\(08\)60964-2](http://dx.doi.org/10.1016/S0140-6736(08)60964-2) ---

Surgical safety checklist, paired with training, lowers complications after high-risk operations

Surgeon and HSPH student Scott Ellner (center) and colleagues review a safe surgery checklist

Ellner Scott and colleagues, published in the December 2012 issue of --- the Journal of the American College of Surgeons,