



Lifebox: Saving lives through safer surgery and anesthesia

2025



“For the first time in history, you’re more likely to die of a surgically treatable condition than an infectious disease. It is critical that we close the gap for the 5 billion people who don’t have access to safe surgery. The magic of Lifebox is that we are creating a movement, making safer surgery possible for patients everywhere and creating a better system as a whole.”

**Dr. Atul Gawande, Lifebox Co-founder and
Immediate Past Chair**



CHALLENGE: GLOBAL CRISIS OF UNSAFE SURGERY

**5 OUT OF 7
PEOPLE
LACK TRUE ACCESS
TO SAFE SURGERY**

**4 MILLION DIE
ANNUALLY
FROM COMPLICATIONS
ARISING FROM SURGERY**

**HALF OF
THESE
DEATHS
ARE PREVENTABLE**

Source:

Meara J and Greenberg S. The Lancet Commission on Global Surgery. *Surgery* 2015

Quresh A The Global burden of postoperative death. *The Lancet* September 2019

THE WHO SURGICAL SAFETY CHECKLIST

Developed in 2008, the Checklist is an undeniably transformational force in the global safe surgery movement

Surgical Safety Checklist

World Health Organization | Patient Safety
A World Alliance for Safer Health Care

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)?
 Yes
 No

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?

Revised 1 | 2009

The cornerstone of



founding & programs

Our Approach

- Invest in health systems by working directly with surgical teams in the hospitals where they work to build commitment to evidence-based best practices that yield safer anesthesia and surgery for better patient outcomes
- Remain small, partner with professional societies, ministries, and other NGOs
- Create tools and strategies that address the biggest problems, have the highest impact, and are easily shared



ABOUT

LIFEBOX



Lifebox is a global nonprofit – registered in Ethiopia, Liberia, UK, US with an operating budget of \$4-5M.

Since **2011** we have:



WORKED IN OVER
116
COUNTRIES



TRAINED MORE THAN
14,000
HEALTHCARE
PROVIDERS



MADE SURGERY SAFER FOR
248 MILLION
PATIENTS

PARTNERSHIPS

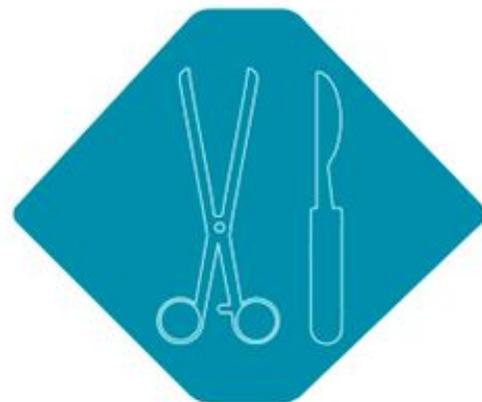
SAFER END-TO-END SURGICAL PATIENT JOURNEY



Anesthesia Safety



Surgical Teamwork



Surgical Safety

TRAINING

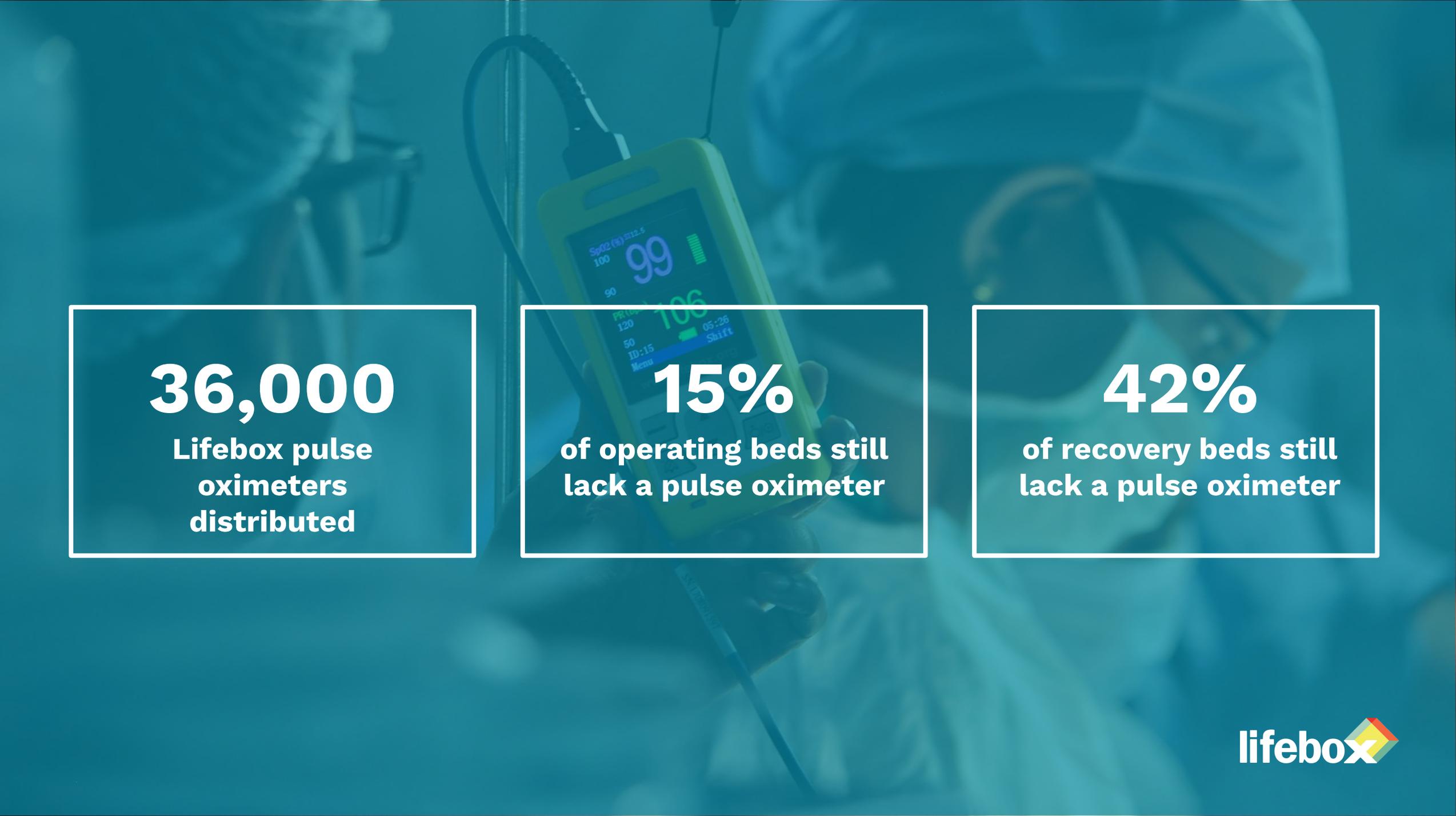
TOOLS

OUR APPROACH

LIFEBOX PULSE OXIMETER

- Measures how well oxygen is being sent around a person's body
- A single pulse oximeter can keep thousands of surgical patients safe each year
- Minimum standard for safe anesthesia
- Operating rooms across the world still lack this essential device
- \$250 can send a pulse oximeter to an anesthesia provider in need





36,000

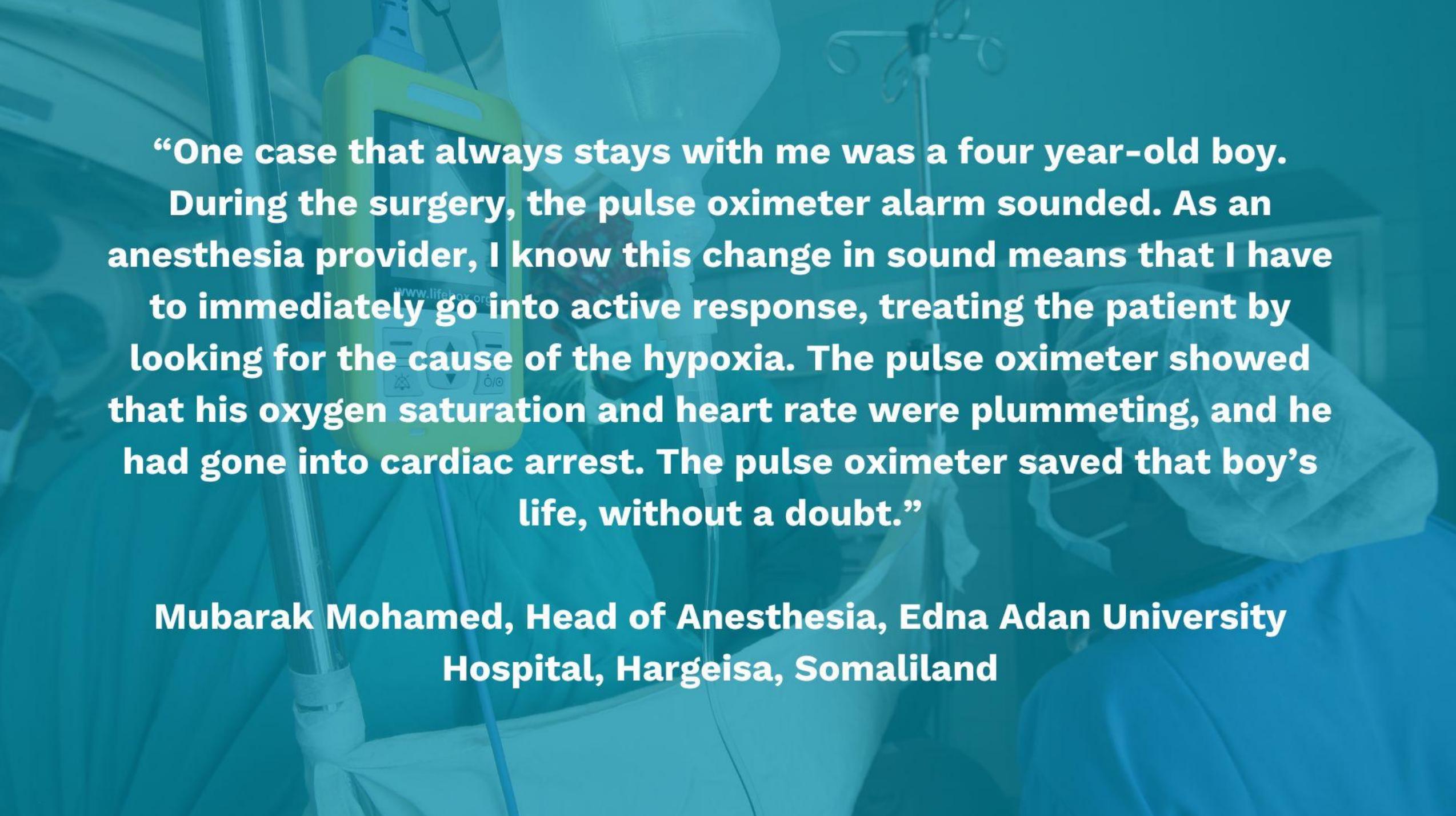
Lifebox pulse
oximeters
distributed

15%

of operating beds still
lack a pulse oximeter

42%

of recovery beds still
lack a pulse oximeter



“One case that always stays with me was a four year-old boy. During the surgery, the pulse oximeter alarm sounded. As an anesthesia provider, I know this change in sound means that I have to immediately go into active response, treating the patient by looking for the cause of the hypoxia. The pulse oximeter showed that his oxygen saturation and heart rate were plummeting, and he had gone into cardiac arrest. The pulse oximeter saved that boy’s life, without a doubt.”

Mubarak Mohamed, Head of Anesthesia, Edna Adan University Hospital, Hargeisa, Somaliland

SMILE TRAIN-LIFEBOX CAPNOGRAPHY PROJECT

- Capnography is an essential monitor to ensure a patient is getting adequate oxygen during anesthesia.
- It has been use universally in high-income countries for decades but remains virtually absent in low-resource setting operating rooms.
- The new Smile Train-Lifebox Capnograph tackles this major gap in anesthesia safety by making available an affordable, user friendly, high-quality device idea for use in low-resource settings.



Why is capnography important?

- Capnography detects one of the leading causes of anesthesia-related complications and deaths in low-resource settings: esophageal intubation.
- Esophageal intubation is where the breathing tube supplying oxygen to the patient is misplaced into the patient's windpipe rather than the lungs.
- Without oxygen, a patient will suffer catastrophic harm in minutes, including brain damage and death.
- A capnograph will provide real-time data on every breath, allowing the immediate detection if a patient is not getting oxygen.





30+ years
since capnography
became mandatory in
US

100% gap
found between
capnography need and
availability in LMICs

650
Smile Train-Lifebox
Capnographs to be
distributed

“Capnography can identify a problem within seconds. This early detection allows timely management which significantly enhances our patients’ safety. Though a gold standard during any surgery, capnography is only available in a few hospitals in Ethiopia. Health professionals familiar with its functions are also limited.”

Dr. Ananya Abate, Ethiopian Society of Anesthesiologists President



LIFEBOX SURGICAL HEADLIGHT

- Every year, an estimated 24 million patients are put at risk of serious harm due to lack of lighting
- Lifebox and COAST are addressing this issue with the Lifebox Light: A durable, affordable headlight suited for use in low-resource operating rooms.
- Surgeons using the Lifebox Light report improved surgical safety– including better visualization, increased accuracy, shorter surgery duration, and a reduction in patient harm.



A surgeon in a blue operating room, wearing a headlamp and mask, performing surgery. The image is overlaid with a blue tint.

“As a surgical resident in Ethiopia, I know how terrifying it is when the light goes out with a patient open on the operating table. An excellent quality surgical headlight that illuminates the surgical field will completely transform our work. In low-resource settings like mine, this basic technology is long overdue.”

Dr. Natnael Gebeyehu

Surgical Resident, Tikur Anbessa Hospital, Addis Ababa, Ethiopia

Lifebox Surgical Safety Innovation Fellow

CLEAN CUT

- Surgical site infections are a common and devastating complication of surgery.
- In low-and middle-income countries, surgical patients are twice as likely to suffer from an infection than patients undergoing surgery in the US.
- The Clean Cut program reduces surgical infection by strengthening adherence to six key infection practices.



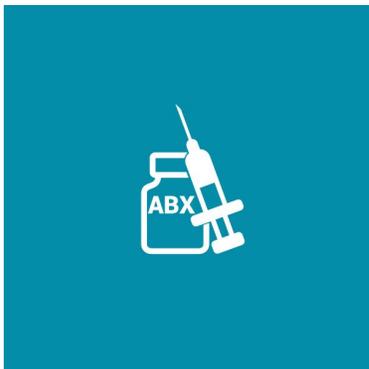
REDUCING SURGICAL INFECTION

CLEAN CUT

AIM: Improve compliance with six essential perioperative infection prevention practices, based on the WHO Surgical Safety Checklist



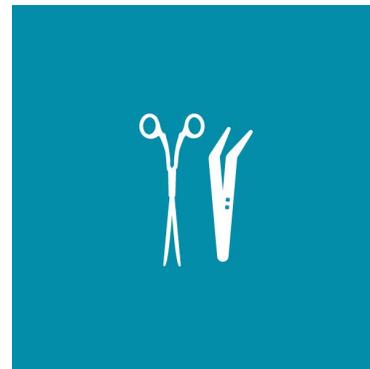
01.
Appropriate
Skin
Preparation



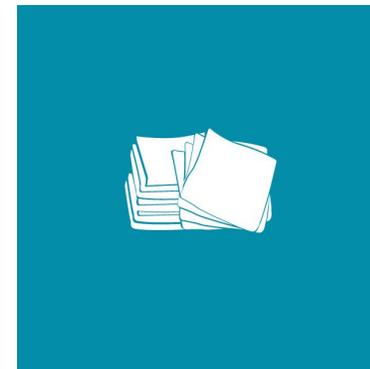
02.
Antibiotic
Prophylaxis



03.
Sterile Field:
Reusable
Surgical Linens



04.
Instrument
Sterility



05.
Gauze
Counting



06.
Use of Surgical
Safety Checklist

REDUCING SURGICAL INFECTION

CLEAN CUT

Scaling Clean Cut across multiple sites and contexts, implementing the program in Bolivia, Ethiopia, India, Liberia, and Madagascar, and adapting the program to improve the safety of **cesarean sections, cleft surgeries, and long bone fracture**.

35%

INFECTION REDUCTION

35

PARTNER HOSPITALS

IN 7 COUNTRIES

208,000+

PATIENTS IMPACTED

Thank you for supporting
safe anesthesia!



www.lifebox.org