Problem Description

Surgical teams rely on visual estimation techniques to measure a patient's blood loss.

Clinicians generate a milliliter value for Estimated Blood Loss (EBL) by observing bloody components in the OR.



Studies have shown this method to be seriously inaccurate with up to 50% error.

1.Human Cost

- O Hemorrhage is the #1 killer in surgery.
- Pediatric, elderly, and comorbid patients are at highest risk.
- o Overtransfusion of blood can lead to severe complications.

2. Financial Burden

- O Blood transfusions represent \$15B in health care costs annually, and up to 60% are *unnecessary*.
- o Surgical hemorrhage payouts average \$600k+, twice the size of typical malpractice suits.

"Blood conservation is one of the few areas in medicine where outcomes can be improved, risk reduced, and costs saved, all at the same time."

> --Steven Frank, MD Johns Hopkins University

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Solution

ErythroSight: A Blood Loss Monitoring Method: smart sensors embedded in the surgica



• **Real time:** software recalculates data 2.5 times per second

- Accurate: RBL calculated within +/- 10% error
- Seamless: wireless integration with surgical workflow
- **Smart:** algorithm adapts to dynamics of surgery
- Non-invasive: device is totally external to patient

Market / Affected Population



	System
B	l platform

Real Time Blood Log (RBL)

Clinical Benefits

A real time blood log enables care providers to:

Respond faster

Real time blood loss monitor enhances surgical decision making

Conserve resources

Continuous blood loss data allows for optima transfusion practices

"Blood loss during surgery is dangerous to all patients, from babies and children (with lower blood volumes to start with) to adults (with more ischemic heart disease sensitive to blood loss or other coagulation problems)."

Alexander Lin, MD, FACS

Saint Louis University

Competition

- 1. Visual Estimation (Standard of Care) - Inaccurate with up to 50% error or more
- 1. Gauss Surgical Inc. (tablet app which estimates blood loss based on photographing every surgical sponge and canister)
 - Disruptive to surgical workflow
 - Misses key sources of blood loss





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embedded sensors detect real time blood loss