



OR GLASS: Using Wearable Technology to Augment Perioperative Personnel Competency, Promoting Improve Patient Safety

John C Springer CST
Department of Surgery, Keck Medical Center of USC

BACKGROUND

The preoperative arena is a unique environment that includes many challenging variables: complex clinical care performed by teams; high cost, sophisticated technologies; and a large array of supplies, instruments, and implants that are difficult to manage.

These variables create an environment of massive complexity and unfortunately, are a source of a significant percentage of a patient safety-related adverse event.

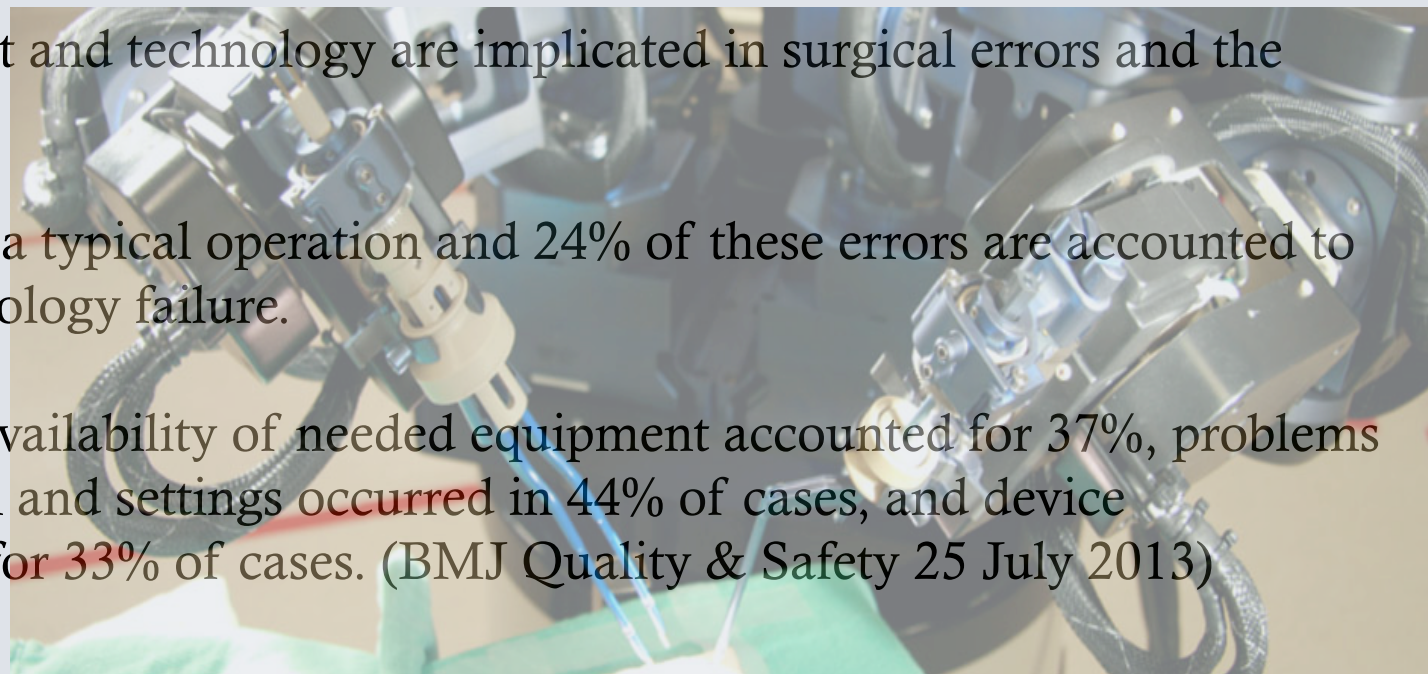
Advancement in medical equipment and surgical technology has led to a significant improvement in surgical intervention and patient care.

New medical equipment, instruments, surgical supplies and method of interventions are introduced, integrated and adopted by the clinician to cope up with the changing needs in providing the best surgical care.

However, failure in equipment and technology are implicated in surgical errors and the adverse event.

About 15 errors occur during a typical operation and 24% of these errors are accounted to equipment and surgical technology failure.

Among these errors, lack of availability of needed equipment accounted for 37%, problems with equipment configuration and settings occurred in 44% of cases, and device malfunction was responsible for 33% of cases. (BMJ Quality & Safety 25 July 2013)



INTRODUCTION AND STATEMENT OF PURPOSE OF THE PROJECT

Google GLASS- is a device categorized as a wearable computer that you donned on your head, equipped with a heads up display, HD camera, Wi-Fi connectivity and with operations almost entirely hands free, making it a device with a huge potential of meaningful use of technology in a medical/surgical setting. Google GLASS had been used in healthcare for a variety of application, from simulation, documentation and collaboration to name a few.

Opportunities abound for technology and informatics-based competency improvements in perioperative care. What better way to achieved competency than to adopt technology itself and its many developed contemporary methods or applications that will enhanced and elevates OR personnel's competence.

Wearable technology; like **Google GLASS**, isn't just a set of a neat gadget. It's a technology that is making its way from something that we hold in our hands to something we can wear hands-free to enhance our lives. So it makes perfect sense that healthcare is one industry that see a lot of benefits with wearable technology.

OR GLASS- Is a concept innovative project that is aim towards augmenting perioperative personnel competency, through real-time education and access to information by using wearable technology (Google GLASS)



Google GLASS

OR GLASS



OR GLASS

Augmenting Perioperative Personnel Competency

"Scan QR code or visit link to view Prezi presentation"

http://prezi.com/7gsrpepamdgi/?utm_campaign=share&utm_medium=copy

IMPLEMENTATION PROCESS

A prior pilot project titled "QR in the OR" demonstrated the effective used of smartphone and the QR code technology as an innovative method in delivering digital version of an equipment operation instruction. However, the QR in the OR method cannot be utilized in a sterile setting. With the introduction of Google GLASS which changes the whole dynamic of proposed concept application, the same method can be replicated and redesign to be used by both device; smartphone and Google GLASS.

The Process: Equipment will be tag with a call-to-action markers. Each markers carries a unique combination of codes that when scan by an already existing, free to download smartphone and Google GLASS application, brings up information, instructions, data and even video demonstration associated to the equipment.

"Competence refers to potential ability and/or capability to function in a given situation. Competency focuses on ones actual performance in a situation. This means that competence is required before one can expect to achieve competency."

K. Schroeter RN

TARGET POPULATION/LIMITATION

"Why train a few if we can equip everyone"

Perioperative Personnel-consisting of a variety of trained medical professionals.

- Surgeon
- Anesthesiologist
- Perioperative Nurses
- Surgical Technologist



Limitation

HIPPA Compliance-

Since device (Google Glass) is equip with built-in camera, potential for HIPPA violation has been pointed out. Software modification and careful application design can resolve this issue.

Health care slow in adopting innovation-

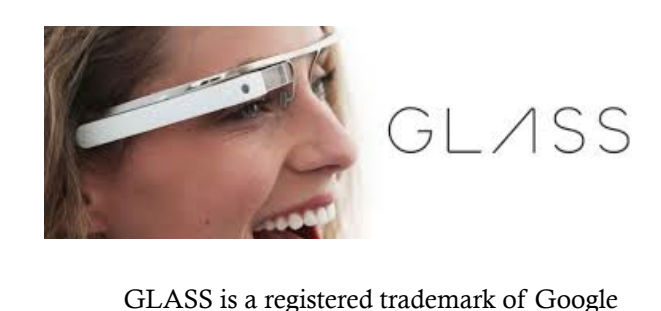
Health care have a tendency to stick to the status quo, that for decades the preoperative fundamental functions haven't change and that most of it had become obsolete, wasteful, impractical and unsafe.

CONCLUSION

In an absence of an informatics and technology base generic process structure; like developing a web-base application for the handheld and wearable technology, that can be utilized as an educational resources, equipping everyone with real-time access to data and information, the organization have to train, re-train and "reinvent the wheel" again and again which could result in time and cost escalation.

Technology has revolutionized the world of surgery and transform how surgical intervention are performed and perfected. To be an effective, efficient and confident part of the surgical team, it is prudent to adopt and used technology as a tool of the trade for the perioperative personnel

Google GLASS has the potential to be an effective device to improved personnel performance, which translate to a cost-effective, efficient and safe delivery of medical/ surgical care.



GLASS is a registered trademark of Google

