SIMetrics (TM pending)

"Make a habit of two things: to help; or at least do no harm."

~ Hippocrates

Introduction

Medicine to Hippocrates and other ancient Greeks and Romans was an extremely practical commodity. From their viewpoint, it allowed women to die less frequently during childbirth and fostered better infant mortality. In addition, workers could keep on working and for longer periods of their lives and Good medicine prevented soldiers from dying and allowed them more often to get back to fighting. With improving medical care in the Roman era, deaths from disease and plague were gradually minimized. Thus, the goals were the same was for the ancients as they for us today in the modern world.

Many times, we have seen, the sobering statistics presented by the United States' Institute of Medicine's 1999 study that estimate there are between 44,000 to 98,000 deaths annually from medical errors. Also of concern is that physicians reported increased anxiety about future errors (61%), loss of confidence (44%), sleeping difficulties (42%), reduced job satisfaction (42%), and harm to their reputation (13%) following errors. *(Source: Joint Commission Journal on Quality and Patient Safety, Volume 33, Number 8, August 2007).* The safety statistics are proportionately not much better in other nations with each country and each clinic or hospital facing differing degrees of issues with procedural errors, prescription errors, hospital-acquired infections and "never events".

What is now widely accepted is that simulation training indirectly but substantially increases patient safety and helps lower the costs of health care. Through simulation training the learner is able to increase knowledge and self-awareness, and practice procedures prior to treating patients without the fear of harming them. In some simulation centers, they also learn to communicate with other disciplines more effectively and learn and practice teamwork, when they normally would have to do so "on then job" and in front of the patient. Additionally, as a result of learning using simulation, they generally become more confident and less anxious during their formative years and in early practice.

Even established and experienced clinicians benefit from simulated surgical training. They can used simulation models to practice new procedures and by conducting a virtual "dry-run" of a surgery prior to the actual operation. They can also become proficient by practicing on robotic training devices remote surgical device. The newest in 3D image viewing technology allows for more accurate diagnostics and the ability to pinpoint pre-op accuracy, to even the molecular level. The critical elements of improving safety outcomes in practice are increased dexterity, mental pro-op preparedness and better diagnostics.

A well-practiced and prepared graduate and or established clinician increases the overall safety quotient, which is a winning situation for patient, clinician and hospital.

Purpose

The Simulators LLC is a consultancy group specifically focused on the needs of simulation healthcare professionals. As we attend conferences globally we have noticed a worrisome trend. Even though everyone benefits from sharing simulation successes at the conferences, and we anticipate that the patients benefits from the sharing of this information, the tendency is not to share this information unless it is a "published work". This is not because we health professionals do not want patients to be safe. It is simply because it is the traditional model for educators and researchers not to share their successes until it has been published in a refereed journal. This is understandable because the published studies have undergone the rigor of scientific review. However, it is estimated that only 10% pf studies that are conducted in simulation centers are published. It is our hypothesis that many simulation centers do not have the time, support or research resources that is necessary to take a study to full fruition. Simulation is a rapidly developing field that is moving at a very fast pace and yet, it is critical that sharing takes place, especially as it relates to outcome studies that impact patient safety.

Healthcare institutions in countries with managed and/or government controlled healthcare systems, tend to share more, since the funding is almost completely public. Healthcare institutions in the USA, in general receive less government funding. The United States is the only nation of all of the developed countries, with the exception of Mexico, without universal health coverage. It may surprise some to hear that the healthcare spending per person in the US is $7,290. The next highest of developed countries is Switzerland with healthcare spending per person of $4,417. However, the average life expectancy (at birth) in the United States is about 78 years, versus the average life expectancy in developed countries of 79.2 years. So healthcare costs in the United States are the highest in the world by a wide margin, and the life expectancy is below the global average for developed countries (also we must account for lifestyle as an impact on life expectancy). *Source: "OECD Health Data 2009"*

While The Simulators have no government affiliation, we are deeply committed to supporting individuals and institutions to achieve safer health care for patients and for the caregivers. Our mission is to help improve patient safety through professional consultation and networking with other professionals that have the same goals.

SIMetrics is an initiative created to inspire clinical simulation professionals to work together in order to recognize that sharing metrics is a benefit to everyone and it is a means to an end, which is to increase patient safety globally.

As medical education through simulated practice has increased in popularity, it has come under much closer scrutiny, due to 3 main factors:

1) Cost:
Simulation equipment is not only costly but functional obsolescence is relatively quick. The operational cost of running advanced simulation centers, especially multi-disciplinary ones, can be in the millions of dollars per year. Added to this, simulation environments do not readily produce income, as most other hospital areas are set-up to do.

2) Evidence:
Simulated learning is ultimately about increasing the safety of patients. To this end, it is imperative that the effect of simulation can be measured and proof to its effectiveness offered. Because there are so many things that can affect the outcome of a patient's care in the clinical environment, it is difficult to prove that simulation training is the cause of increased safety. There are certain mainstream categories or procedures that are reasonably measurable and there are those that are not.

3) Practice:
Changing the Halstedian approach of "see one, do one, teach one" is going to take some time. It has been a practice that has been in place for millennia, back to ancient Greek and Roman times and possibly before. The mentoring style of teaching will never disappear but as with any new way of doing anything, it will meet resistance along the way. Before committing valuable time and resources to education through simulation, doctors, nurses, administrators and others have a right to know if simulation really works, and if so, how effective it is.

SIMetrics is specifically designed offer members the ability to access the best patient safety evidence available. The steps we will take towards creating a comprehensive database of impacting simulation proof metrics are:

Step 1: Create focus group of top hospitals and clinics that are willing to contribute

Step 2: Gather Base-line metrics for top medical errors and impacting statistics in numerous categories

Step 2: Publish on The Simulators web-site www.thesimulators.org

Step 3: Continue to increase SIMetrics network and publish proof metrics on web-site and in trade publications (with the permission of and credit to respective contributing institutions)

What is critical as you choose whether or not to involve yourselves and your institutions in this venture, is what at your institution constitutes credible evidence. As a group, we must also agree on nomenclature, skill definitions and which metrics are substantially important within certain areas of specialty. With that in mind, the next page defines some potential categories of metrics that we are proposing. We request that you consider the metrics important to your institution and whether or not your institution is willing and able to contribute to the effort.

TOP SIMULATION METRICS

Hospital Acquired Infections
- Central Line Infection (Pneumothorax, Sepsis)
- VAP (Ventilator Acquired Pneumonia)
- Urinary Catheter Infections
- Surgical Site
- Bloodstream Infections

Obstetrics
- Ruptured Ectopic Pregnancy
- Shoulder Dystocia
- Placental Abruption
- Eclampsia
- Postpartum Hemorrhage
- Forcep Delivery
- CPR

Recruitment & Retention
- Recruitment and Retention of Nurses
- Nursing Orientation

Time Savings (also Life Saving)
- Time in OR
- Time from ED to Cath Lab
- Task Oriented Time (Improved Techniques)

Surgical/Procedural Proficiency
- Bronchoscopy
- Endovascular procedures
- Laparoscopy
- Cholecystectomy
- CPR
- Airway Management

Healthcare Teams
- Efficiency
- Communication
- Rapid Response Teams
  - Stroke
  - CPR
  - Trauma

“Other”

- Surgical Complications
- Spinal Injuries due to Patient Transport
- Medication Errors
- Complications due to devices etc.

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