

# Improving Patient Safety With the Use of Surgical Checklists

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“In flying I have learned that carelessness and overconfidence are usually far more dangerous than deliberately accepted risks.”

– Wilbur Wright in a letter to his father, September 1900

“Josie’s death was not the fault of one doctor, or one nurse, or one misplaced decimal point; it was the result of a total breakdown in the system.”

– Sorelle King, mother of 18 month old Josie King, who died at Johns Hopkins Hospital from medical error while recovering from burns.

**Patient safety has come to the forefront** as a major issue in medical care today. Since the Institute of Medicine’s report, “To Err is Human,” suggested that there were

100,000 deaths annually from medical error, physicians, nurses, and hospital organizations have worked to improve patient safety.<sup>1,2,3</sup> Medicine requires the integration of motivated, intelligent practitioners with highly complex, technical systems. A similar analogy exists within aviation. During the early days of flight, accidents were common and blame was placed on failure of the machine. Technical improvement

## Checklists are only effective when used appropriately and consistently.

ensued, yet accidents continued. Eventually researchers and practitioners recognized the role of human factors: the inherent fallibility of human memory may contribute to preventable mistakes<sup>4,5</sup>

Checklists in aviation and other high risk fields were developed, allowing an organized review of specific items necessary for the safe completion of a task. These checklists follow a flow that took into account the switches, gauges and steps involved. Medicine is less organized and standardized. The “art” of patient care has allowed high variability, and with it, increased risk for error.<sup>6,7</sup>

Beginning in the late 1990s, medicine recognized analogies between aviation and medical interventions, especially in high technology, high risk areas such as surgery and obstetrics.<sup>8</sup> Process improvement ensued with an emphasis on standardization. Checklists that have been modeled after those used in aviation and other high risk industries were introduced into

the medical field in the early part of this decade.<sup>9,10</sup> An example, used at The Miriam Hospital, is seen in Figure 1. Patient identification and operative site/side are primary. In recognition of the importance of all team members, their names are listed along the left side of the board, and introductions are encouraged. The checklist itself is designed with sliders beginning with everything in the red; as each task is completed the slider is moved to green. The “killer items” of antibiotics, DVT prophylaxis and beta blockade are included as a group, as is the identification of equipment that may be required for the procedure to be carried out successfully. When initially introduced, despite education, there was resistance: this was viewed as an additional delay to starting surgery.<sup>11</sup> The administration supported the checklist, however, and nurses were instructed not to hand the knife up until the checklist was completed. This, combined with the surgeon’s realization that significant errors were caught, led to universal utilization. (Figure 2) Checklists will be important tools from an economic sense because CMS Pay for Performance will focus on process improvement including timing and type of antibiotics.

Checklists can also reduce morbidity and mortality and do not need to be overly complex. The World Health Organization’s checklist (Figure 3) emphasizes briefings as well as antibiotic utilization.<sup>12</sup> The study was carried out in 8 countries and mortality fell from 1.5% to 0.8%. Serious complications fell from 11% to 7%.<sup>13</sup>

PERIOPERATIVE CHECKLIST	
DATE _____	
Patient's name _____ Weight _____	
Date of Birth _____ Med. Rec. # _____	
PROCEDURE _____	
Patient Position _____	
SURGEONS	1. Patient Identification <b>TWO</b> identifiers
ANESTHESIA	2. Allergies
CIRCULATOR	3. Consent signed
SCRUB	4. History & Physical signed within Z days
OTHER	5. Site verification
	6. Antibiotics given*
	7. DVT prophylaxis*
	8. Beta blockers*
	9. Implants/Special Equipment
	10. Surgical pause
	* If indicated

ALL ITEMS MUST BE CONFIRMED BY 2 TEAM MEMBERS

Red	Not Confirmed	Green	Confirmed



