

Title : Raising Cost Consciousness in Anesthesia
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Introduction

We surveyed 52 medical personnel attending our weekly anesthesia conference and found that although 50 percent were board certified anesthesiologists, only 15 percent had a reasonable knowledge of the magnitude of health care costs in the U.S.A. There is an abundance of articles in the lay literature concerning cost containment and effectiveness, but a paucity of information in medical journals and at medical meetings, which seems to perpetuate ignorance about this economic issue. The present study was designed to tabulate equipment and drugs prepared and used or discarded without use during anesthesia in order to ascertain which, if any, items were most likely to yield reduction in cost without sacrificing quality of care.

Method

A non-involved observer tabulated the equipment and drugs used or discarded, and the costs of these items for a total of 60 patients undergoing the following procedures: cholecystectomy (10); breast biopsy (15); transurethral resection (13); herniorrhaphy (12); total hip replacement (6); and hysterectomy (4). The time spent in the operating room prior to surgical incision (pre-incision time) and the duration of surgery was also recorded.

Results

The average anesthesia service charge for all cases was \$109.00. This charge is based on the costs of drugs and equipment and on duration of care in the administration of anesthesia. It does not include professional fees for either nurse or physician anesthesiologists. We monitored the utilization of 26 specific items which represented an average cost equal to 30.4 percent of the anesthesia service charge. The mean cost of these items prepared for use but discarded unused (wasted) was \$3.19 per case. This represents 9.6 percent wastage of the monitored items or a projected wastage of approximately \$10.50 per case.

The following table gives a tabulation of the frequency of wastage of the monitored items.

Frequency of Wastage

| <u>Low Incidence (<10%)</u> | <u>Intermediate Incidence (10-25%)</u> | <u>High Incidence (>25%)</u> |
|--------------------------------|--|---------------------------------|
| Stopcocks | Occular | Drugs |
| Xylocaine | Occluders | -Atropine |
| Ointment | IV Catheters | -Pancuronium |
| EKG Discs | Tongue Blades | -Neostigmine |
| IV Fluids | Endotracheal | -Succinyl- |
| IV Adminis- | Tubes | choline |
| tration Sets | 3 cc Syringes | Syringes |
| Esophageal | Drugs | -10 cc |
| Stethoscope | -Vasopressors | -6 cc |
| IV Extension | -Diazepam | Tracheal |
| Sets | -Thiopental | Topical Spray |
| | Xylocaine (1%) | Kits |
| | Gloves | Needles |
| | Spinal Trays | |

The mean pre-incision time for all 60 surgical procedures was 23 minutes (22 percent of the total time spent in the operating room); the pre-incision time for total hip replacement was 44 minutes (28 percent), transurethral resection 25 minutes (22 percent), cholecystectomy 19 minutes (15 percent), herniorrhaphy 21 minutes (20 percent), and hysterectomy 15 minutes (11 percent). The pre-incision times for each procedure were not significantly different at p = 0.05.

Discussion

This study indicated that uncomplicated surgical cases at our institution have an associated projected expense of about \$10.50 which can be attributed to wastage of anesthesia drugs and equipment. In an institution doing 10,000 cases a year this represents an expenditure of over \$100,000 which could be markedly reduced by an effective personnel education program. If these data are projected to the estimated 15 million anesthetics conducted each year in the U.S.A., one could project a possible cost savings of \$150 million/year. Similar studies in other institutions will allow them to focus on specific areas of wastage.

Summary

Substantial hidden waste during anesthesia can be detected by an internal drug and equipment utilization audit. Only by educating personnel engaged in the practice of anesthesia can an effective cost containment program be implemented.