

Economic Model

BELOW IS AN EXAMPLE OF AN ECONOMIC MODEL FOR LOST TIME INJURIES DUE TO PATIENT HANDLING IN A 100 BED HOSPITAL.

INJURY SUMMARY

A 100-bed facility has a workers' compensation insurance cost of \$100,000 per year. It formed a task force to study the problem and recommend a solution. The task force reviewed its injury data and found it similar to many hospitals.

- 40-45% of lost-time injuries due to moving or repositioning patients
- Most injuries happen during planned patient repositioning.
- Patient transfers are the second leading cause of injuries.
- The average nurse's age is getting older and many will soon retire. Age is a factor in injuries
- Patients are getting larger and heavier.
- Average cost per claim has been about \$5,000.

The task force found injuries made it difficult to keep nursing staffing levels adequate. It decided that a minimum lift program should be implemented. The task force looked at several types of equipment to help solve the problem. It listed equipment choices as follows:

DEVICE COST

Portable positioning and lateral transfer devices

- 1) PATRAN single-patient-use device Less than \$2 per patient
- 2) A multiple-patient-use device costing \$100 per unit
- 3) A multiple-patient-use device costing \$500 per unit
- 4) A multiple-patient-use device costing more than \$1,000 per unit
- 5) Note, the multiple-patient-use devices need cleaning to prevent cross contamination but single-patient-use PATRANs do not

Fixed ceiling lift/sling devices at more than \$2,000 per unit

DEVICES NEEDED

As a 100-bed hospital with private and semi-private rooms it had 70 rooms for patients. If the facility purchased the portable multiple-patient-use devices, it would need to buy 180 to have enough to send to the laundry while still keeping one in each room. The task force estimated that the caregivers would move or reposition 3,000 patients per year, and with one device per room it would need to be cleaned after each move to ensure no cross contamination when used on another patient. If the facility purchased ceiling lifts, the staff would still have to clean the sling that comes in contact with the patient. The task force estimated repositioning or transferring each of the 3,000 patients three times for a total of 9,000 moves. If the facility purchased single-patient-use devices, no cleaning would be required.

The task force decided against first recommending multiple-patient-use devices that move between rooms as it was concerned about storage and convenience. The group thought such devices could be considered later as specialty items. The task force estimated the following without taking into account the savings associated with using fewer health care workers to reposition and/or move the patients. Reduced labor would add to the estimated savings.

COST ESTIMATES

EXAMPLE 1: PATRANs cost \$2 each

PATRANs can be reused with the same patient as long as that patient stays in the facility. However, some will be thrown away prematurely due to excessive soiling by body fluids. While PATRANs are impervious to most disinfectants, disposal should cost less than cleaning.

3,000 PATRANs + 100 early disposal = \$3,100 units at \$2/unit = \$6,200
Savings \$40,000 workers' compensation - \$6,200 cost = \$34,800

EXAMPLE 2: Multiple-patient-use devices costing \$100 each.

- 1) Initial purchase 180 devices x \$100 per device = \$18,000
- 2) Cleaning costs at \$2 per cleaning x 9,000 times = \$18,000
- 3) Replacing lost or stained devices. 100 per year x \$100 per device = \$10,000
- 4) Total cost for the first year = \$46,000
- 5) **At \$40,000 savings, it will take over a year to pay for the investment.**

EXAMPLE 3: Ceiling lifts costing \$2,000 each. Purchase one per room.

- 1) Initial purchase 70 devices x \$2,000 per device = \$140,000
- 2) Three slings per lift at \$10 each (needed for cleaning) = \$2,100
- 2) Cleaning costs at \$2 per clean x 9,000 times = \$18,000
- 3) Replacing lost or stained slings 100 per year x \$10 per device = \$1,000
- 4) Total cost for the first year. = \$161,100
- 5) **Without considering interest on the expenditure it will take about four years to pay for the investment.**

COMPARISONS AND CONCLUSIONS

PATRANs are the lowest cost and offer the fastest return on investment. They even cost less than cleaning and replacing the multi-patient-use devices. Additionally, PATRANs may be carried in a caregivers pocket to be readily available if needed in another area. The task force realized that the same PATRAN used to transfer a patient onto a cart could be sent with him or her to X-ray or other departments and used for transfers there. PATRANs could even be sent home with the patient, but fixed in place and/or expensive devices could not. The task force decided to recommend PATRANs due to their cost and versatility.

However, the task force thought some of the devices offered different desirable advantages. The group knew that the low cost of PATRANs would give it flexibility to change its recommendation or add devices. If the facility started with PATRANs, it could save money right away. Then if the task force wanted to buy additional devices, it could do so out of the savings. Therefore, the task force recommended PATRANs.

This document prints on letter size paper in the portrait position with 1" left and right margins.

