APPENDIX A: COST ESTIMATES

Two different treatment strategies that were analyzed in terms of costs in one hospital are considered below: inpatient v. outpatient tissue biopsy (11). After considering these alternative strategies, we will attempt an analysis of national data on breast cancer surgery.

Figure A-1 shows the alternative strategies, inpatient v. outpatient biopsy, as observed for 1976 at Massachusetts General Hospital. For inpatient biopsy, the patient is admitted to the hospital and the operating room is scheduled for a possible radical mastectomy. Under total anesthesia, she has a biopsy and immediate frozen section (tissues fixed for microscopic examination by freezing). The pathologist concludes negative, doubtful, or positive cancer. If negative or doubtful, the patient is returned to her room to await the results of a permanent section, which is considered slightly more accurate. If positive, radical mastectomy usually is performed, followed by discharge, radiation therapy, and perhaps later reconstructive surgery. If the frozen section is positive, radical mastectomy usually is performed immediately. Note that this approach means the patient does not know at the start of the operation what condition she will be in when the operation ends.

For outpatient biopsy, the patient undergoes total anesthesia in the ambulatory surgical service and goes home the same day to await the results of a permanent section, which are usually known within 24 hours. If positive, admission and radical mastectomy follow. Note that the outcomes are certain here, but two total anesthesias are required for patients needing surgery.

Table A-1 shows the cost differences and number of cases for 1976 a t Massachusetts General Hospital. If one excludes the patients with treatment other than surgery, then the total cost for the 284 patients, using the inpatient alternative is $657,664. If the outpatient alternative costs were applied to these patients the costs would be $501 ,056—a savings of 24 percent. This calculation does not consider the effect on costs of more limited surgery or the effect of not using radiation therapy afterwards. It also does not consider the effect of doing limited surgery such as tylectomy or the reduced need for later reconstructive surgery.

Figure A-1.—Alternative Strategies of Inpatient v. Outpatient Biopsy at Massachusetts General Hospital, 1976

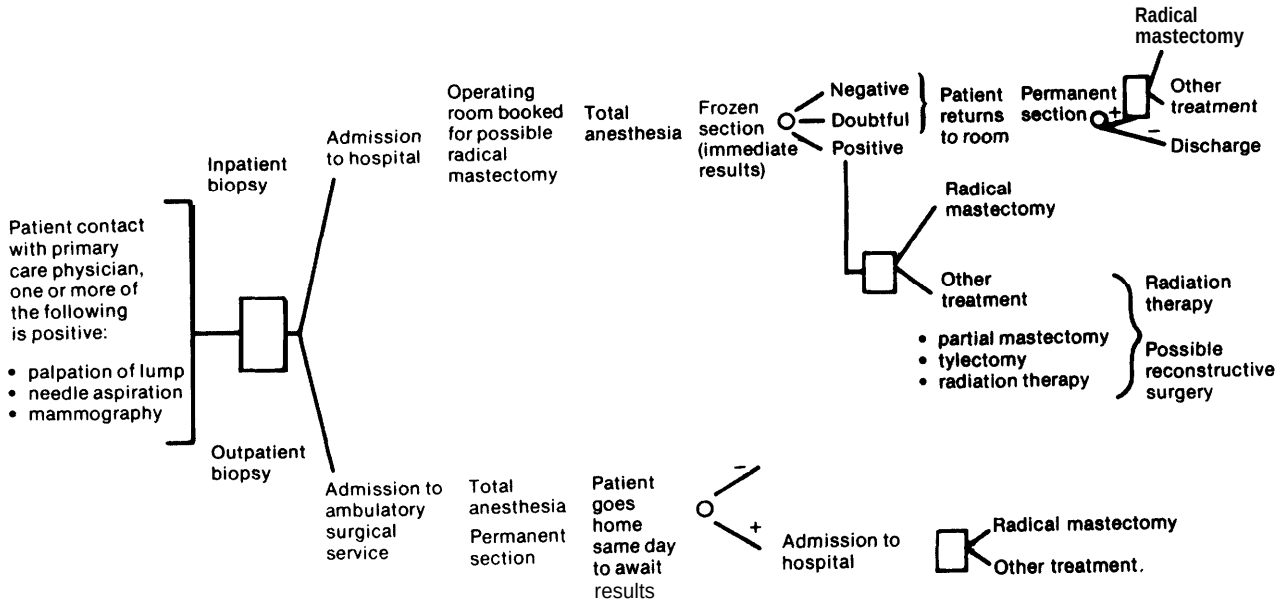

Table A-1 .—Breast Surgery at Massachusetts General Hospital, 1976

	Average cost	Number of cases
Inpatient alternatives		
Negative biopsy	$1,223	152
Positive biopsy, immediate mastectomy	3,270	84
Biopsy, permanent section positive, mastectomy	4,106	48
Biopsy, permanent sect ion positive, other treatment (patient refused surgery, radiation only or incomplete chart)	1,850	16
Outpatient alternatives		
Negative biopsy	316	244
Positive, radical mastectomy	3,432	52
Positive, other treatment	940	12
Total		608

NOTE. The cost of postsurgical radiation therapy for 6 to 9 weeks is not included above This would be an added $2,000 Surgeons' fees not Included.

SOURCE: Massachusetts General Hospital operations log and other medical records.

Table A-2 shows the total number of procedures for the United States in 1975. Unfortunately, the national data do not separate out biopsy only and partial mastectomy and tylectomy. One can only guess at the amount of less extensive surgery. A simple calculation of total patient days and costs yields an aggregate cost of $413.6 million, excluding radiation therapy.

A very rough estimate is made in table A-2 to show the possible cost savings that would result if outpatient biopsies were used uniformly and radical surgery were replaced with more limited surgery. The savings would be $185 million per year or a 45-percent reduction in costs. This does not consider reducing the use of radiation therapy or changing from complete mastectomy to tylectomy. So the 45-percent potential reduction in total costs is probably a substantial underestimate.

The reader must realize the very approximate nature of this cost analysis. However, the magnitude of the difference in costs is sufficient to warrant further investigation.

Table A-2.—Breast Surgery in the United States, 1975

	Number of procedures	Average length of stay (in days)	Total number of days
Surgical mix in 1975			
Biopsy and partial mastectomy	223,000	3.5	780,500
Complete, modified radical, radical mastectomy	103,000	12.5	1,287,500
			2,068,000
		Total cost @ $200/day=	$413,600,000
Possible alternative surgical mix			
Outpatient biopsy	200,000	1.0	200,000
Partial mastectomy	23,000	3.5	80,500
Complete mastectomy	103,000	8.3	854,900
Radical mastectomy	0	—	0
			1,135,400
		Total cost @ $200/day=	$227,080,000

Difference in costs between actual surgical mix and possible alternative for 1 year= $413,600,000– $227,080,000 = $185,720,000, or 45% savings **with alternative.**

SOURCES: Number of cases in 1975: National Center for Health Statistics. Surgical Operations in Short-Stay Hospitals. United States, 1975, Vital and health statistics data: National Health Survey, Series 13, No. 34. DHEW Publication No. (PHS)78-1785. (Hyattsville, Md.' DHEW, April 1978), Average length of stay. National Health Survey Series 13, No. 34. DHEW Publication No. (PHS)78-1785, Average length of stay for complete mastectomy only: Commission on Professional and Hospital Activities (CPHA). *Length of Stay in PAS Hospitals by Operation, United S'ates 1975* (Ann Arbor, Mich., CPHA, 1976).