

Research to Practice: Breast-Conserving Surgery



Randomized breast cancer clinical trials arose 30 years ago in a storm of controversy. Surgical leaders, like Haagensen, criticized Fisher and others for challenging the conventional “more is better” treatment paradigm. In 2002, the 20- and 25-year follow-up papers from the classic NSABP B-04 and B-06 trials were published, further documenting equivalent survival with less extensive surgery. However, patterns of care data demonstrate irregular implementation of these research findings into clinical practice, and there appears to be a spectrum of physician approaches to presenting patients with the option of breast-conserving surgery.

A GREAT LEAP BACKWARD IN THE TREATMENT OF CARCINOMA OF THE BREAST

“The recent oft-repeated statements in the lay press by physicians in high places that we do not know how to treat breast cancer and that random studies will provide the answer have done a great deal of harm because they have led many women to lose faith in radical mastectomy and to turn to less aggressive and less successful forms of treatment. The truth is that we already know enough regarding the inferiority of lumpectomy and simple mastectomy, with or without supplementary irradiation, to conclude that it is not wise or humane to condemn a woman to be treated with these methods.”

—C.D. Haagensen, MD. *JAMA*, May 21, 1973.

ONE GIANT LEAP FOR MANKIND

“Biological considerations are even more compelling than clinical ones (which are persuasive) to suggest that total (simple) mastectomy could be an equivalent procedure to radical mastectomy, at least in certain subsets of patients, and that consequently, for the sake of patients with breast cancer, that thesis must be credibly affirmed or denied without delay. Prospective randomized clinical trials afford a mechanism for such an accomplishment.

The more universal acceptance of the prospective randomized clinical trial as a mechanism for obtaining sound information concerning the worth of a therapeutic modality prior to its general use must be considered a major medical advance. Such trials endeavor to apply the scientific method for the solution of clinical problems ... Contrary to the deprecating remarks of Haagensen ... that such studies ‘represent a great leap backward in the treatment of breast carcinoma,’ I and many others consider such undertakings to be ‘one giant leap for mankind’ forward!”

—Bernard Fisher, MD. *JAMA*, Sept 3, 1973.

UNDERUTILIZATION OF BREAST-CONSERVING SURGERY

The rate of breast-conserving surgery is highest in the cosmopolitan coastal cities of the United States. I can only speculate about the reasons, but I think some of the differences are related to having multiple medical schools in a city, with the associated academic discourse and medical meetings. In addition, without stereotyping, I believe that women in different geographic locales are exposed to different views. Women in the major cosmopolitan cities may learn more, read more, question more and challenge more. Another major problem in more remote areas is the availability of radiation therapy, which requires five or six weeks of commuting to a radiation therapy unit. In some states, women may live 100 to 200 miles from a radiation unit. There are many factors, but overall, the incidence of breast-conserving surgery is less than it should be.

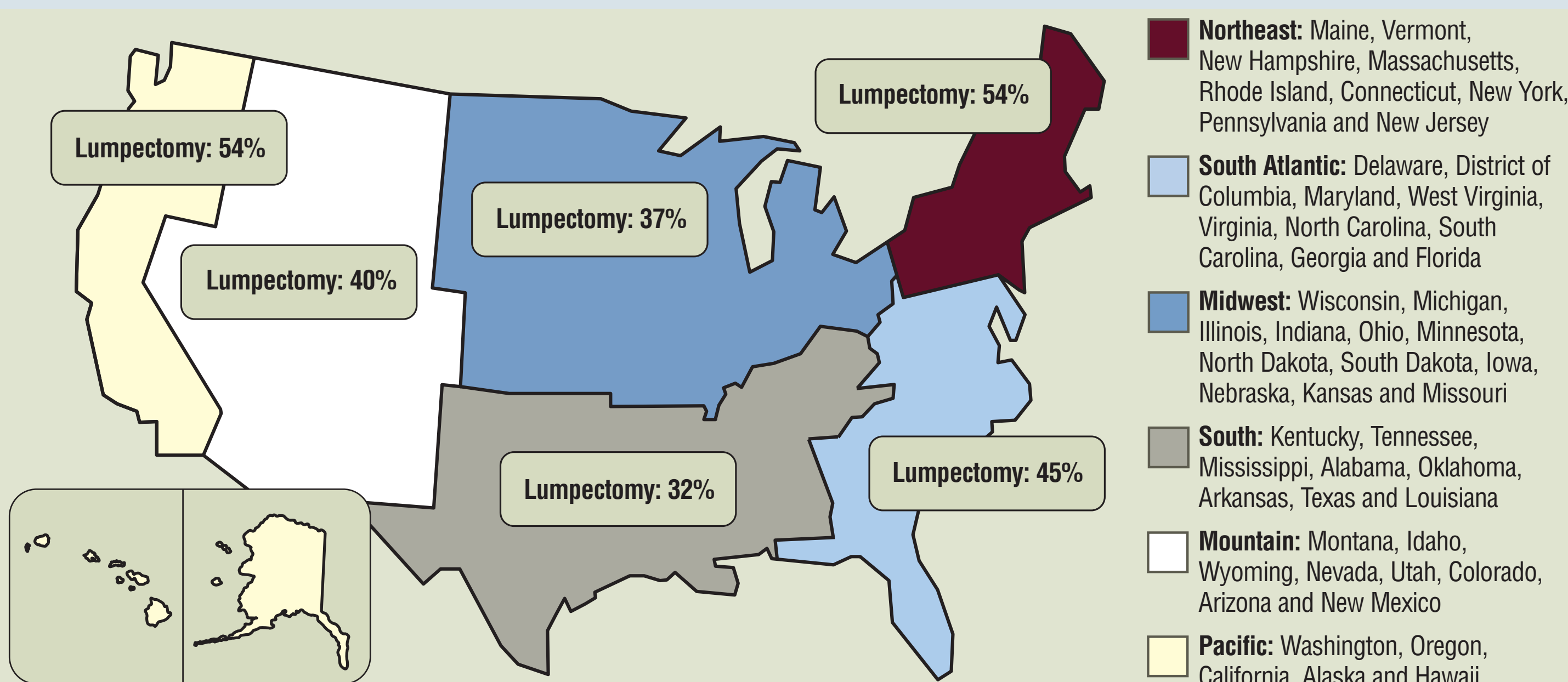
—Richard Margolese, MD

BREAST SURGERY IN THE ATAC TRIAL

“Using the United Kingdom (n=3228, 42% mastectomy rate) as a standard; women from the United States were more likely to have a mastectomy (n=2222, 51%) with a hazard ratio of 1.43 (95% CI 1.28-1.60). In a multivariate analysis, being from the US remained an independent predictor for having a mastectomy. Although the standard of care in the United States remains breast-conserving surgery whenever possible, in the ATAC trial, American women were more likely than those in the United Kingdom to have a mastectomy. The reasons for this disparity are not clear and may represent physician or patient bias. If so, greater educational efforts should be made to support the role of conservative surgery as an alternative to mastectomy.”

—Locker G. *Breast Cancer Res Treat* 2002;76(1):S35.

GEOGRAPHIC REGION AS A PREDICTOR FOR BREAST-CONSERVING SURGERY



DERIVED FROM: Morrow M et al. *J Clin Oncol* 2001;19(8):2254-2262.

PERCENTAGE OF WOMEN UNDERGOING BREAST-CONSERVING SURGERY: TRENDS OVER TIME*

Stage of Disease	January 1983-March 1985	April 1985-June 1990	July 1990-December 1995
Stage I	23.9%	34.6%	53.4%
Stage II	13.7%	19.3%	32.7%

*Data from 109,880 women in SEER registry with Stage I or II breast cancer diagnosed from 1983-1995.

DERIVED FROM: Lazovich D et al. *Cancer* 1999;86:628-637.

EFFECTS OF 1990 NIH CONSENSUS DEVELOPMENT CONFERENCE ON RATES OF BREAST CONSERVATION*

Characteristic	Breast Conservation Before NIH Consensus Development Conference (1/83-6/90)	Breast Conservation After NIH Consensus Development Conference (7/90-12/95)
Stage		
Stage I	32.3%	53.4%
Stage II	17.7%	32.7%
Age at Diagnosis		
<50	30.8%	48.0%
50-59	25.2%	49.0%
60-69	22.8%	44.6%
70-79	19.0%	39.2%
80+	23.1%	34.7%

*Data from 109,880 women in SEER registry with Stage I or II breast cancer diagnosed from 1983-1995.

DERIVED FROM: Lazovich D et al. *Cancer* 1999;86:628-637.

AGE AND HOSPITAL SETTING AS PREDICTORS FOR BREAST-CONSERVING SURGERY*

Variable	Lumpectomy
Age	
21-49 years	48%
50-69 years	45%
70+ years	34%
Hospital	
Community	40%
Comprehensive community	43%
Teaching	51%
EIC-extensive	
Yes	31%
No	45%

*Data from a sample of 16,643 patients with Stage I and II breast cancer treated in 1994.

DERIVED FROM: Morrow M et al. *J Clin Oncol* 2001;19(8):2254-2262.

SELECT PUBLICATIONS

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Fredriksson I et al. Time trends in the results of breast conservation in 4694 women. *Eur J Cancer* 2001;37(12):1537-44.

Lazovich D et al. Breast conservation therapy in the United States following the 1990 National Institutes of Health Consensus Development Conference on the Treatment of Patients with Early Stage Invasive Breast Carcinoma. *Cancer* 1999;86:628-637.

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