Pre-Screening Mammography Incidence Trend of Breast Cancer in the U.S. (1940 to 1980)

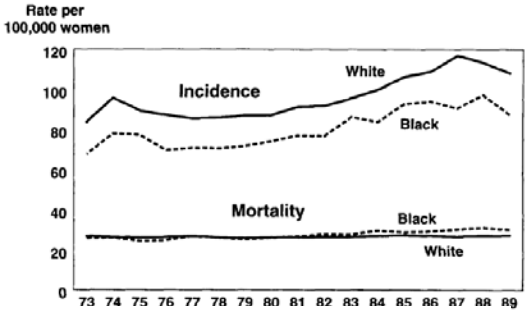
Second National Cancer Survey, 1947-8: Ten cities with some of their counties?
Source: David E. Lilienfeld, MD, Harold Fred Dorn and the **First National Cancer Survey (1937-1939):** The Founding of Modern Cancer Epidemiology. Am J Public Health. 2008 December; 98(12): 2150–8.

For the survey, the United States was divided into three regions: north, south, and west.[36] The proportion of the population in cities with 100 000 persons or more relative to that for the entire region was approximately the same for each of the three regions. Since medical students were employed as medical record abstractors, each area had to have a medical school, limiting the survey to metropolitan areas.[37] The 10 registries selected, including the counties that each comprised, are shown in Table 1 [table not provided with online article]. Two registries, New Orleans and Philadelphia, did not include any suburban counties. San Francisco included both the city of San Francisco and Alameda County (including the city of Oakland), but no suburban counties.

Third National Cancer Survey, 1969-71: Nine geographic areas: Detroit, SF-Oakland, Iowa, Atlanta, Colorado, Birmingham, DFW, Pittsburgh, Minnepolis-St.Paul {note: Connecticut not included]
Source: Cutler SJ, Scotto J, Devesa SS, Connelly RR. Third National Cancer Survey—An Overview of Available Information. JNCI J Natl Cancer Inst (1974) 53 (6): 1565-1575.

Data were collected in the Third National Cancer Survey, which covered nine geographic areas with a combined population of 21 million people. During the 3-year period 1969–71, a total of 181,027 new cancers were diagnosed, excluding in situ carcinomas and non-melanoma skin cancer.

Debra Monticciollo and Barbara Monsees in their letter to the editor (http://www.nejm.org/doi/full/10.1056/NEJMc1215494) have one reference to their 1% per year claim: Garfinkel L, Boring CC, Heath CW Jr (American Cancer Society). **Changing trends. An overview of breast cancer incidence and mortality**. Cancer. 1994 Jul 1;74(1 Suppl):222-7.
The only statement in the entire report: "*The Connecticut Tumor Registry has been in operation for more than 50 years. Between 1940 and 1980, breast cancer incidence in this registry rose an average of 1% per year*." No data or charts are show to substantiate this statement. The only chart (right) displayed SEER9 data for whites and blacks.[1]



Kessler et al of the **National Cancer Institute** is cited in the Garfinkel report: Kessler LG, Feuer EJ, Brown ML. Projections of the breast cancer burden to U.S. women: 1990-2000. Prev Med. 20:170-82, 1991.

The age-adjusted rate is quoted as 0.85% (0.87% using NCI defined AAPC) per this statement: *To provide a picture of the degree of increase, we summarize the longer term Connecticut data and the SEER data. The age-adjusted rate of malignant breast cancer was **56.3**[2] **in 1940** and increased to **71.6** by 1960, and to 91.1 in 1980: **an average annual increase of 0.85/100,000**.* [3] From the figure (right), however, the incidence for white females in 5 areas increased 0.35%/year from 1950 to 1970. The data in the chart are for five geographical areas (the triangle and associated curve) that the NCI surveyed in the 2nd and 3rd National Cancer Surveys of 1947-1948 and 1969-1971, respectively. The sites were selected from the north, south and west of the U.S., and included New Orleans, Philadelphia, San Francisco and Alameda Counties (latter includes Oakland), and two areas that I have yet to identify but are most likely Connecticut and Atlanta. So, these data are more representative of the national trend before 1980 than Connecticut alone. In the Kessler article the chart is of white women of all ages (instead of all women over 40) and hence the incidence values are lower. In the Garfinkel report, the incidence in white and black women was parallel (chart above). White women dominated the data for 1940-1980 (why only white females were shown in the Kessler report). Hence the slope of the curve in the Kessler report reflects all women. It is **0.35% per year from 1950 to 1970**, between the assumptions Bleyer and Welch used for the *Best Guess* and *Extreme Assumption* in their NEJM report and closer to *Best Guess* than *Extreme Assumption*.

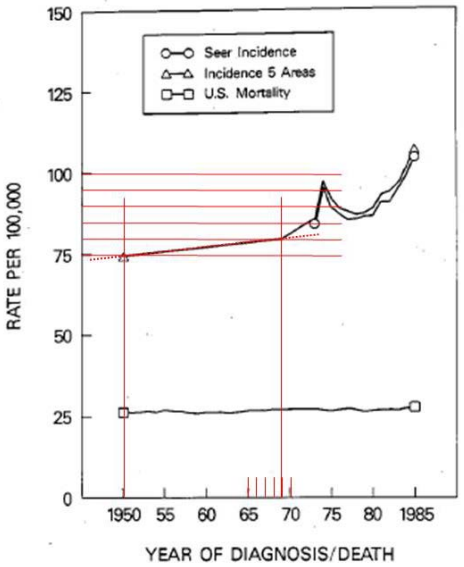


FIG. 1. Breast cancer: white females.

[1] The figure also, shows no reduction in breast cancer mortality despite the increase in incidence due to screening
[2] All rates expressed per 100,000
[3] The 1980 estimate includes the beginning of the upsweep due to screening mammography as well as the Ford-Rockerfeller effect.