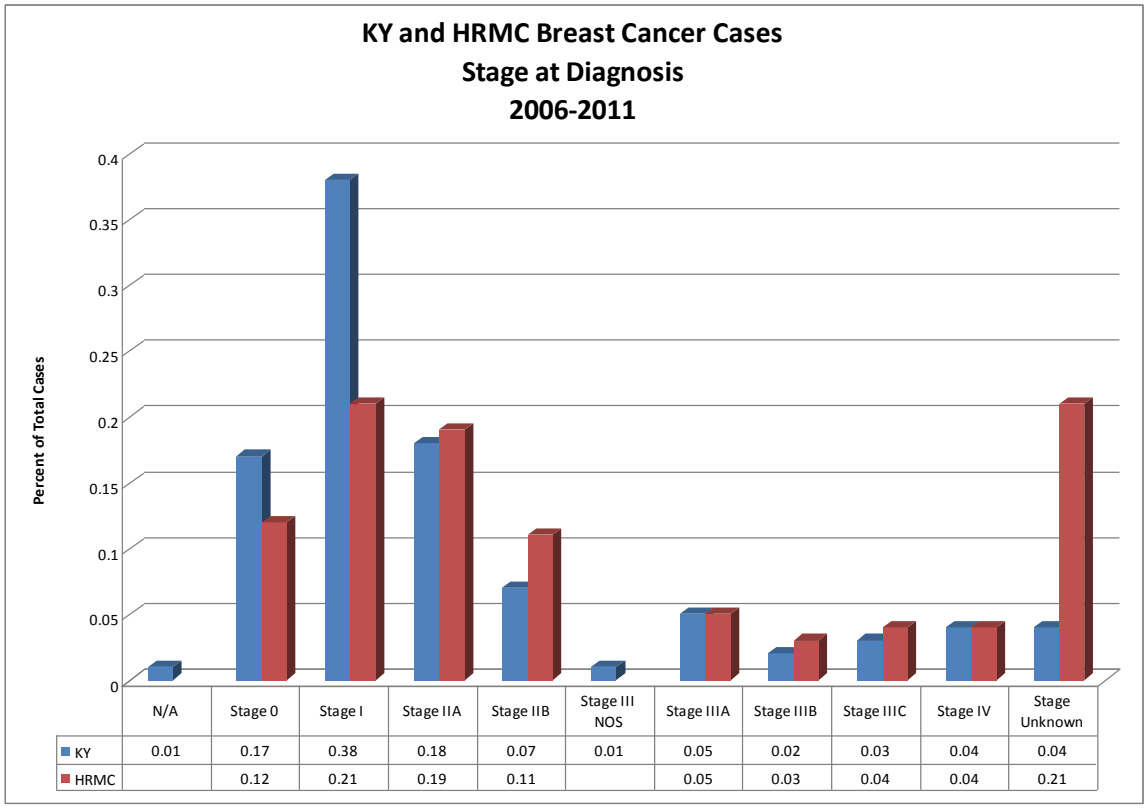
Highlands Regional Medical Center
Breast Cancer Outcomes Study*
Trends in Surgical Choices

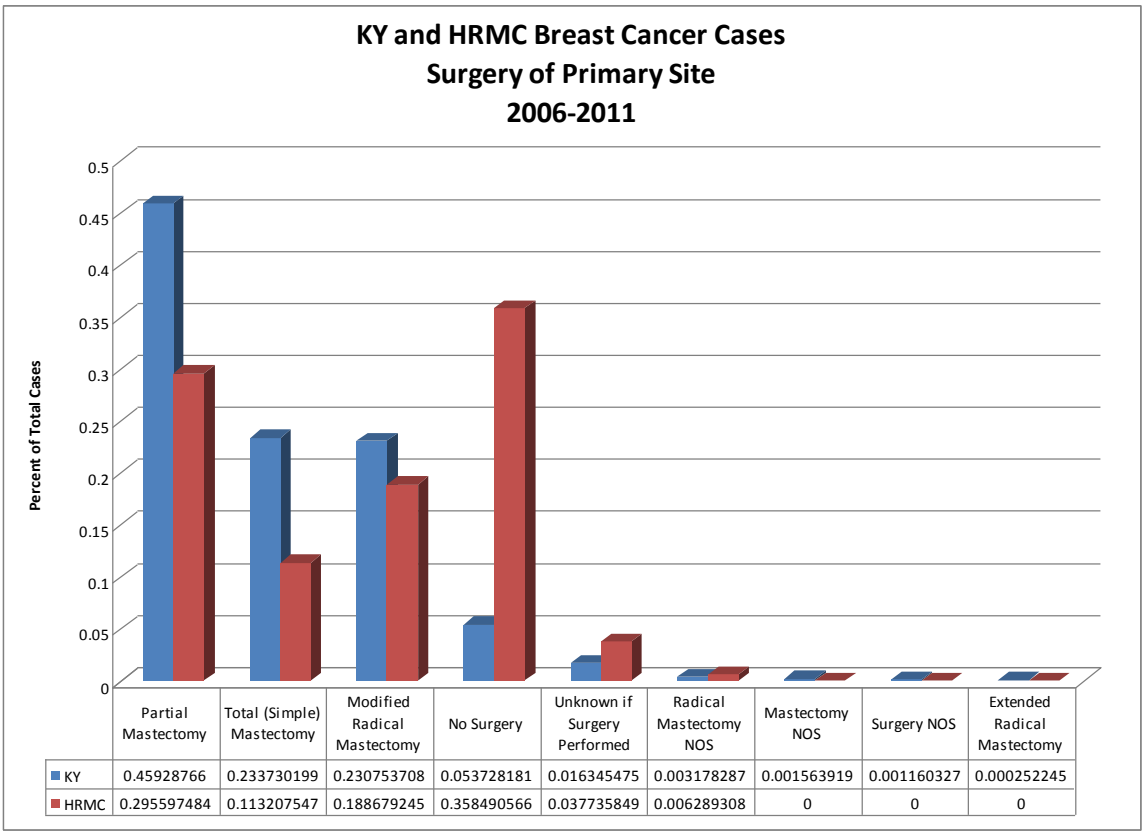
Breast cancer remains one of the most prevalent cancer diagnoses in the United States and the state of Kentucky as well as Highlands Regional Medical Center (HRMC). Breast cancer is the second most common site of cancer diagnosis made at HRMC. Most women who are diagnosed with early stage breast cancer are offered surgical options as first course treatment, ranging from breast conserving to radical.

On review and comparison of stage at diagnosis for cases diagnosed from 2006-2011, the graph shown below demonstrates that patients at HRMC have a similar stage of breast cancer at the time of diagnosis and show a similar distribution of stages (most prevalent stage at HRMC is Stage I, as in Kentucky) to those in the rest of Kentucky. Similarly, the percentage of higher stage cancers is similar to the numbers seen in the rest of the state (Stages IIIA – Stage IV). However, there is a large group of patients seen at HRMC that have an unknown stage. This may be explained by the fact that many patients diagnosed with breast cancer at HRMC have been diagnosed on stereotactic core biopsies or smaller biopsy specimens (needle core biopsies, needle localization biopsies, etc.) and then have more definitive surgeries (lumpectomies/mastectomies) elsewhere.



	N/A	Stage 0	Stage I	Stage IIA	Stage IIB	Stage III NOS	Stage IIIA	Stage IIIB	Stage IIIC	Stage IV	Stage Unknown
KY	0.01	0.17	0.38	0.18	0.07	0.01	0.05	0.02	0.03	0.04	0.04
HRMC		0.12	0.21	0.19	0.11		0.05	0.03	0.04	0.04	0.21

A review of the types of surgery of primary site performed at HRMC on these breast cancer patients demonstrates that the greatest percentage (35.8%) of the types of surgery performed is those with no surgery. This is most likely explained by the possibility that patients who receive their original diagnosis at HRMC go elsewhere for definitive surgical treatment. This possibility also may help explain the high number of breast cancer cases that have an unknown stage at time of diagnosis (see previous section "Stage at Diagnosis"). This highlights that it is important that HRMC investigate further whether patients are going to other healthcare facilities for definitive surgical treatment or not. We may be able to encourage more lumpectomy and mastectomy cases be performed at HRMC in the interest of improved continuity of care and the fact that many of our patients are likely from nearby surrounding counties. This can make treatment for them more accessible and easier to manage.



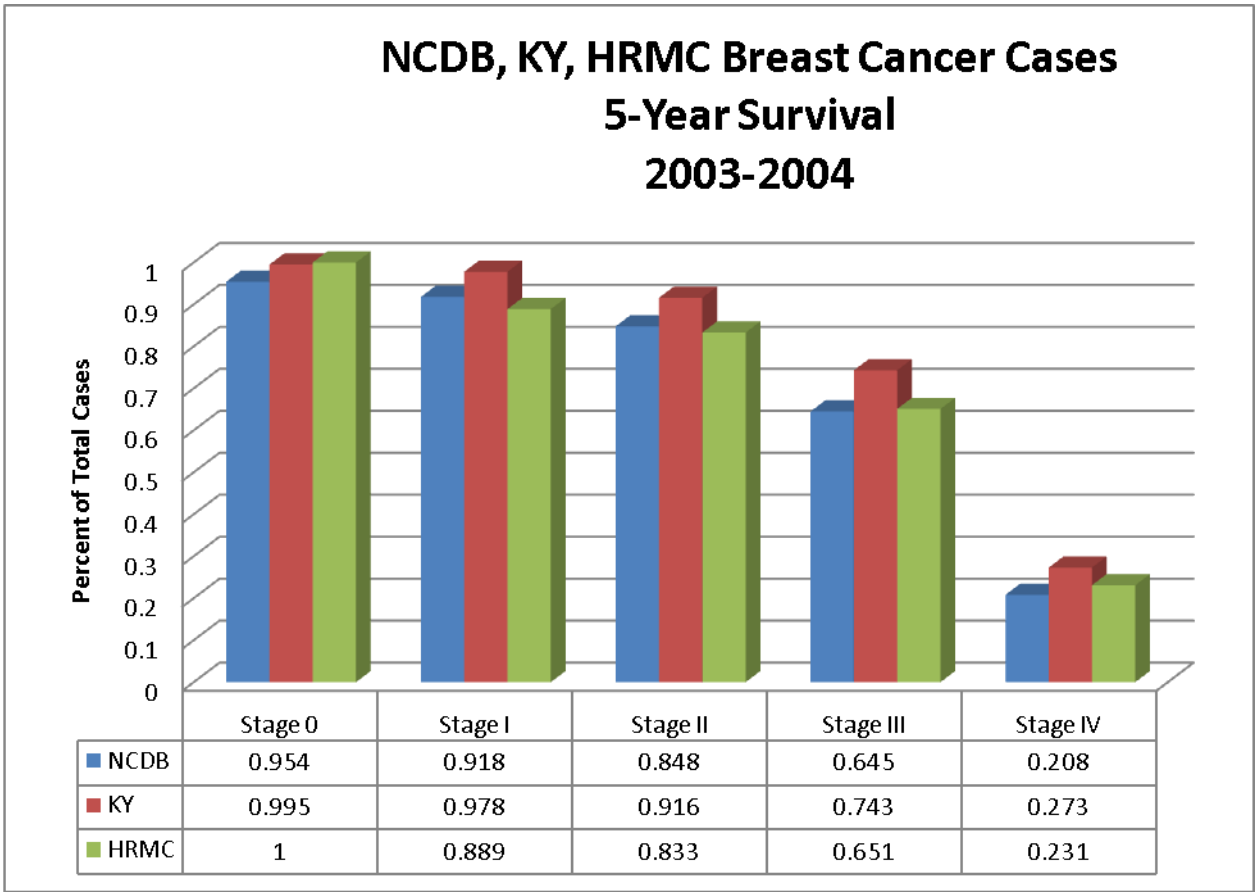
	Partial Mastectomy	Total (Simple) Mastectomy	Modified Radical Mastectomy	No Surgery	Unknown if Surgery Performed	Radical Mastectomy NOS	Mastectomy NOS	Surgery NOS	Extended Radical Mastectomy
KY	0.45928766	0.233730199	0.230753708	0.053728181	0.016345475	0.003178287	0.001563919	0.001160327	0.000252245
HRMC	0.295597484	0.113207547	0.188679245	0.358490566	0.037735849	0.006289308	0	0	0

To aid in determining prognosis, there are site-specific clinically significant factors in breast cancer patients, and newer tests and assays are constantly being developed to help improve this information. Some of these prognostic factors include the presence of Paget's disease, the tumor grade (Scarff-Bloom-Richardson system), the results of prognostic markers (estrogen receptors, progesterone receptors, HER2-neu status), method of lymph node assessment, method of detection of distant metastases (clinical, radiographic, biopsy), and the presence of circulating and disseminated tumor cells and the methods of their detection. Multigene assays (i.e., Oncotype-DX) are increasingly being used for determining which patients are candidates for adjuvant tamoxifen treatment as well as providing predictive information that cannot be found, yet, in staging

or ER/PR and HER2-neu status. Currently, HRMC utilizes most, if not all, of the above mentioned indicators in our breast cancer cases that are staged. We have also seen an increase in usage of multigene assays in ER-positive, lymph node-negative cases.

Comparison of statistics for 5-year survival rates in breast cancer patients diagnosed at HRMC shows that the rate of prevalence continues to mirror those seen nationwide. The graph shown below demonstrates that breast cancer cases from HRMC closely approximate the 5-year survival rates seen nationally over that same period, but are less than those for the state of Kentucky. Five-year survival rates for HRMC patients with breast cancer are as follows (Kentucky and national rates in parentheses): Stage 0= 100% (KY 99.5% and national 95.4%); Stage I= 88.9% (KY 97.8% and national 91.8%); Stage II= 83.3% (KY 91.6% and national 84.8%); Stage III= 65.1% (KY 74.3% and national 64.5%); Stage IV= 23.1% (KY 27.3% and national 20.8%).

These statistics demonstrate that, while HRMC is similar in outcomes with national rates (in fact slightly better in more advanced stages), there is room for improvement in increasing our patient's 5-year survival rates in all stages of invasive breast cancer.



	Stage 0	Stage I	Stage II	Stage III	Stage IV
NCDB	0.954	0.918	0.848	0.645	0.208
KY	0.995	0.978	0.916	0.743	0.273
HRMC	1	0.889	0.833	0.651	0.231

The data generated for this outcome study will be beneficial in directing the Cancer Committee at HRMC on how to improve staging, survival rates, and continuity of care for our breast cancer patients. There are factors that are specific to our population in this area of Kentucky that may be obstacles to better 5-year survival rates for breast cancer. These include the prevalence of tobacco use, cultural barriers, lack of adequate insurance coverage, and overall lack of education and awareness of what is available to the people of eastern Kentucky. Our goals in the coming year are to improve dissemination of information to the population we serve, continue to work on smoking cessation, obtain as many financial resources as possible, and educate the people of our area on the need for, and availability of, mammogram screening. By taking action in these areas, we expect to see better survival rates for our breast cancer patients.

*Sources of statistical data include the HRMC cancer registry, the Kentucky Cancer Registry, and the National Cancer Data Base.