Background
A 2010 Agency for Health Research and Quality grant to the University of Illinois at Chicago funded the Metropolitan Chicago Breast Cancer Registry (MCBCR) for comparing the effectiveness of screening and diagnostic imaging breast cancer procedures. Since then, MCBCR has been funded as a registry of the National Breast Cancer Surveillance Consortium.

MCBCR Database
As of December 31, 2017, MCBCR included data on approximately 485,000 women/patients receiving breast imaging procedures at Advocate Health Care (AHC), the largest health system in Illinois. The PenRad database is used to enter all breast imaging results, biopsies and pathology studies, and related data needed for Mammography Quality Standards Act compliance. Detailed information on clinical findings, demographics, and health insurance is collected on these women at patient registration from each encounter contributing data including identifiers (names, dates of birth, social security numbers, residences at diagnosis) allowing geocoding and linkages that enhance the utility of the MCBCR.

Institutional Review Board Approvals: The MCBCR receives continuing approvals from the Institutional Review Boards at Advocate Health Care, University of Illinois at Chicago and the Illinois Department of Public Health. Acknowledgments: This work was funded by grants AHRQ R01 HS018366, NCI P01CA145292 and FCORP Contract #: PFS-1504-36370.

MCBCR Breast Cancer Data
Probabilistic linkages of the AHC imaging data to breast cancer cases in the 10 Advocate Hospital Tumor Registries (Illinois Statewide Breast Cancer Registry (ISCR) have identified more than 30,000 women in MCBCR diagnosed during 1986-2014. Records for these cases add high quality cancer registry data to MCBCR. The AHC hospital tumor registries are accredited by the Commission on Cancer of the American College of Surgeons and ISCR has consistently received NAACCR Gold Certification. Breast cancer cases have been linked to the National Death Index to determine vital status, date and cause of death for survival assessments.

Recent Research Contributions by the MCBCR

Recent Research As Part of the BCSC:

Structural Violence and Breast Cancer Outcomes: Taking a Residential History Approach

Geocoding residential histories in the MCBCR:
Geocodes for patient residence create opportunities for subsequent linkages to available social and environmental data from sources such as the U.S. Census, EPA, HRSA, and state and local health departments to study effects of air pollution, food and pharmacy deserts, crime, socioeconomic disadvantage and health care accessibility on various health outcomes.

MCBCR's contributions to residential health studies include:
- Longitudinal census and non-census tracts (NATA) linked to MCBCR and other geographic units
- Before and after home address; census block, tract blocks, census tracts and other codes for linkage to external datasets
- Neighborhood and personal health status
- Residential instability
- Exposure to violence
- Birthplace
- Stage of diagnosis

As shown in the above diagram, a nested case-control study using the MCBCR is being developed to examine associations of structural violence and whether it:
1. Increases incidence of more aggressive breast cancer subtypes, and related disparities;
2. Mediates racial disparities in breast cancer stage at diagnosis and survival;
3. Modifies the protective association between high quality health insurance and health outcomes in breast cancer.

This project is an example of how linkages can greatly enhance the value of cancer registry data in research.