Using Maps to Enhance Program Planning, Identify Disparate Populations, Engage Partners and Share Outcomes in the Kansas National Breast and Cervical Cancer Early Detection Program (NBCCEDP)

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Background

Kansas NBCCEDP is a federally funded breast and cervical cancer screening program that provides free screening and diagnostic services to Kansas women who are ages 40-64, under 250% of federal poverty level and uninsured/underinsured. The program enrolls approximately 7,000 eligible women each year. Maps are used within the program to improve program reach by focusing outreach/education efforts, assessing barriers and recruiting new partners.

Methods

Kansas NBCCEDP enrollment and service use data were maintained in a cloud-based data system developed by Spectrum Health Policy Research. ArcGIS ArcMap 10.2 was used to create maps, perform spatial analysis and share results. Since 2014, several map projects were implemented to inform KS NBCCEDP program planning and evaluation.

Results

Maps increased program planning capacity and improved communication within the program and with partners. Maps were shared during a staff workshop and used to select potential communities for focused intervention. For example, Butler County was identified on several maps as having potential for increased program reach and provider engagement. Butler County had higher concentrations of target age residents. The program-eligible women were underserved compared to the state average. The Wyandotte County Task Force recruited a radiology group to support mobile mammography in the urban core. The radiology group became a program provider and regional program staff focused community outreach activities to improve access to breast health services.

Conclusions

Maps are a valuable tool for the presentation of service use data and assessment of program needs of program staff, local coalitions, providers and funders. Maps enhance the ability to:
- Share statewide outcomes in an easy to understand format other than a table
- Hone in on areas where disparities and barriers impact access to care
- Engage staff and partners in health promotion and outreach activities
- Assess areas for change and impact
- Facilitate understanding and capture interest of stakeholders who "think" they do not like data.

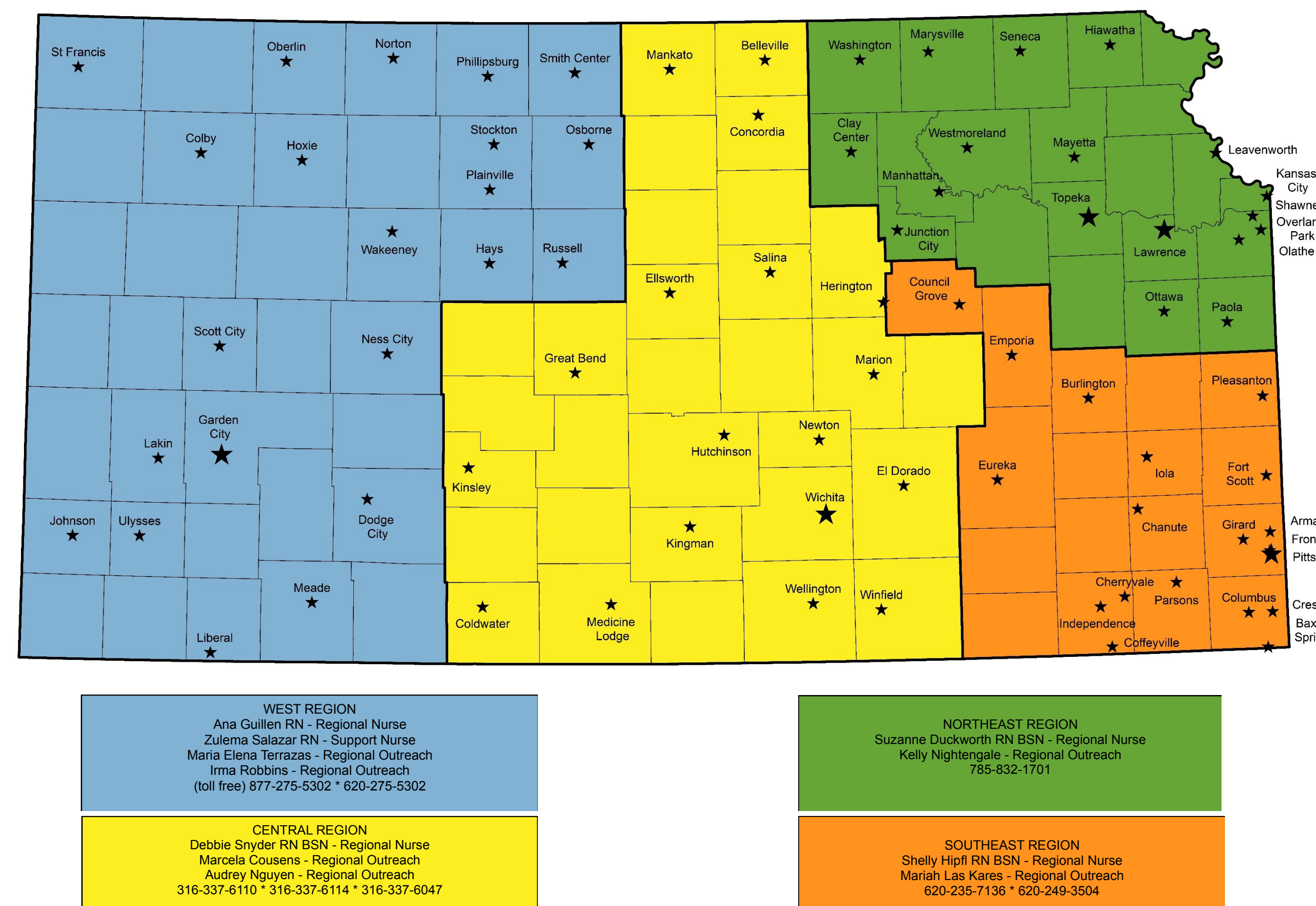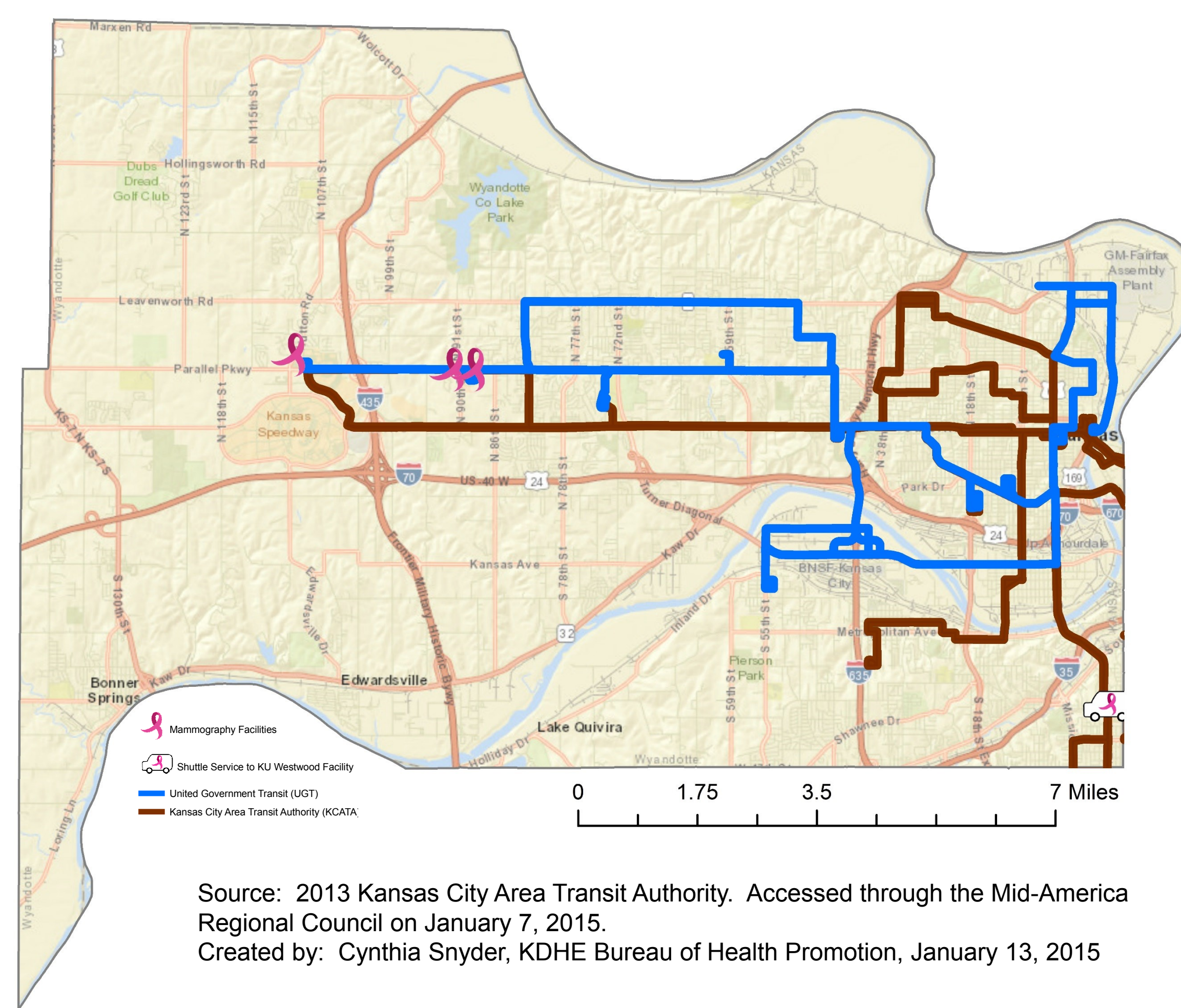**Figure 1**: Kansas Breast & Cervical Cancer Screening Program Providers by City

Figure 1: The Kansas NBCCEDP website featured a map of program providers. Eligible Kansas women could use the online map to locate the nearest participating provider. The same map, with a 20 mile buffer around primary providers, was used internally to assess program coverage.

Figure 2: Optimized Hot Spot Analysis of Individuals Ages 50-64

Source: 2010 Census, Block Group Age Group estimates
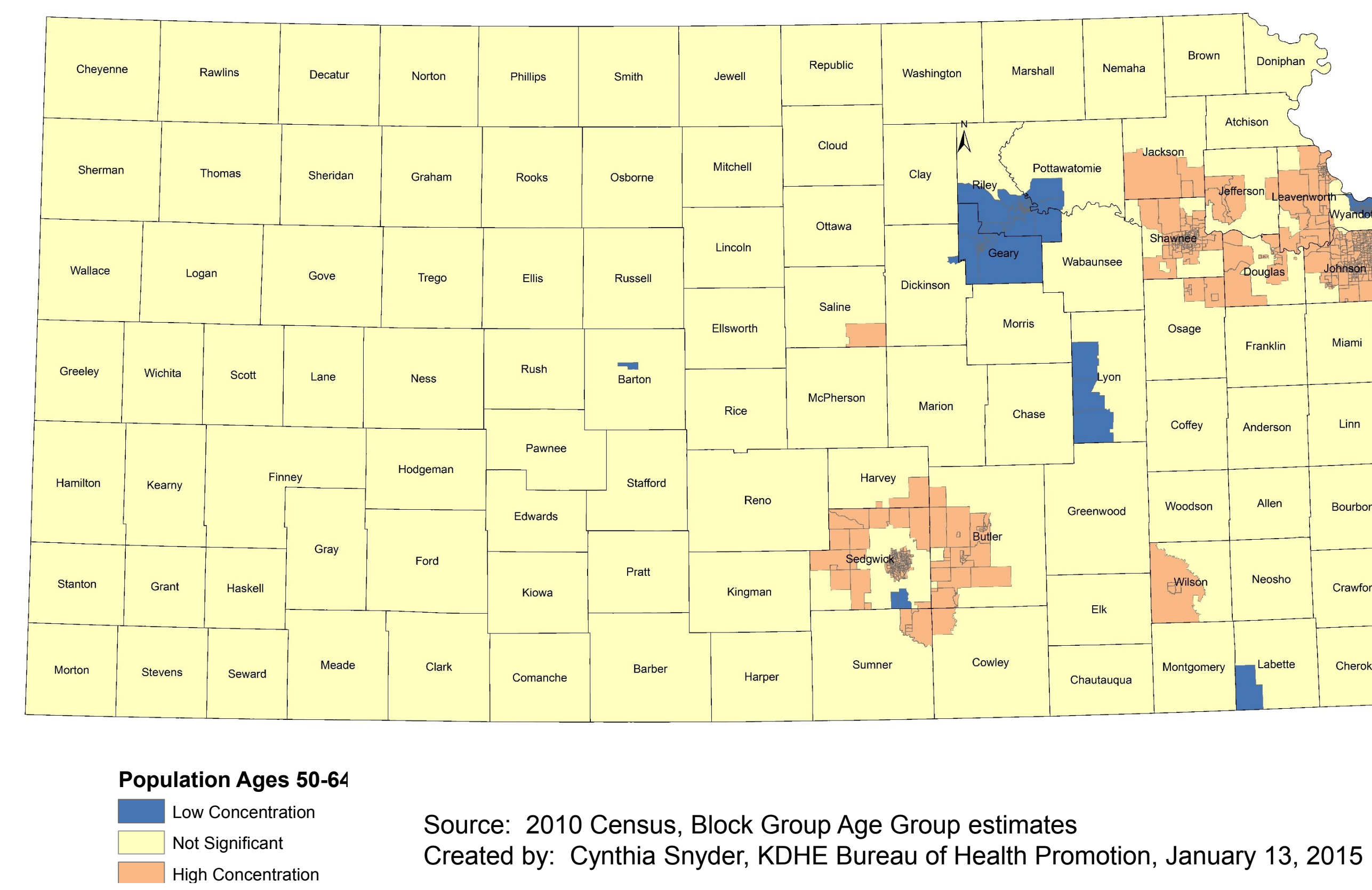Created by: Cynthia Snyder, KDHE Bureau of Health Promotion, January 13, 2015

Figure 2: This map used hot spot analysis of low and high concentrations of individuals ages 50-64 and helped identify women in the prioritized age group. This map in conjunction with a map reflecting program reach (Figure 3) and a map reflecting all eligible women was used to focus outreach/education efforts to recruit women in underserved areas.

Figure 3: Number of KS BC Initial Mammograms and Eligible Women by County

Source: U.S. Census Bureau, Small Area Health Insurance Estimates 2015. Available at www.census.gov/did/www/sahie/data. Accessed May 4, 2017.
KDHE. 2015 Early Detection Works Catalyst Database. Available at www.catalystserver.com. Accessed May 4, 2017.
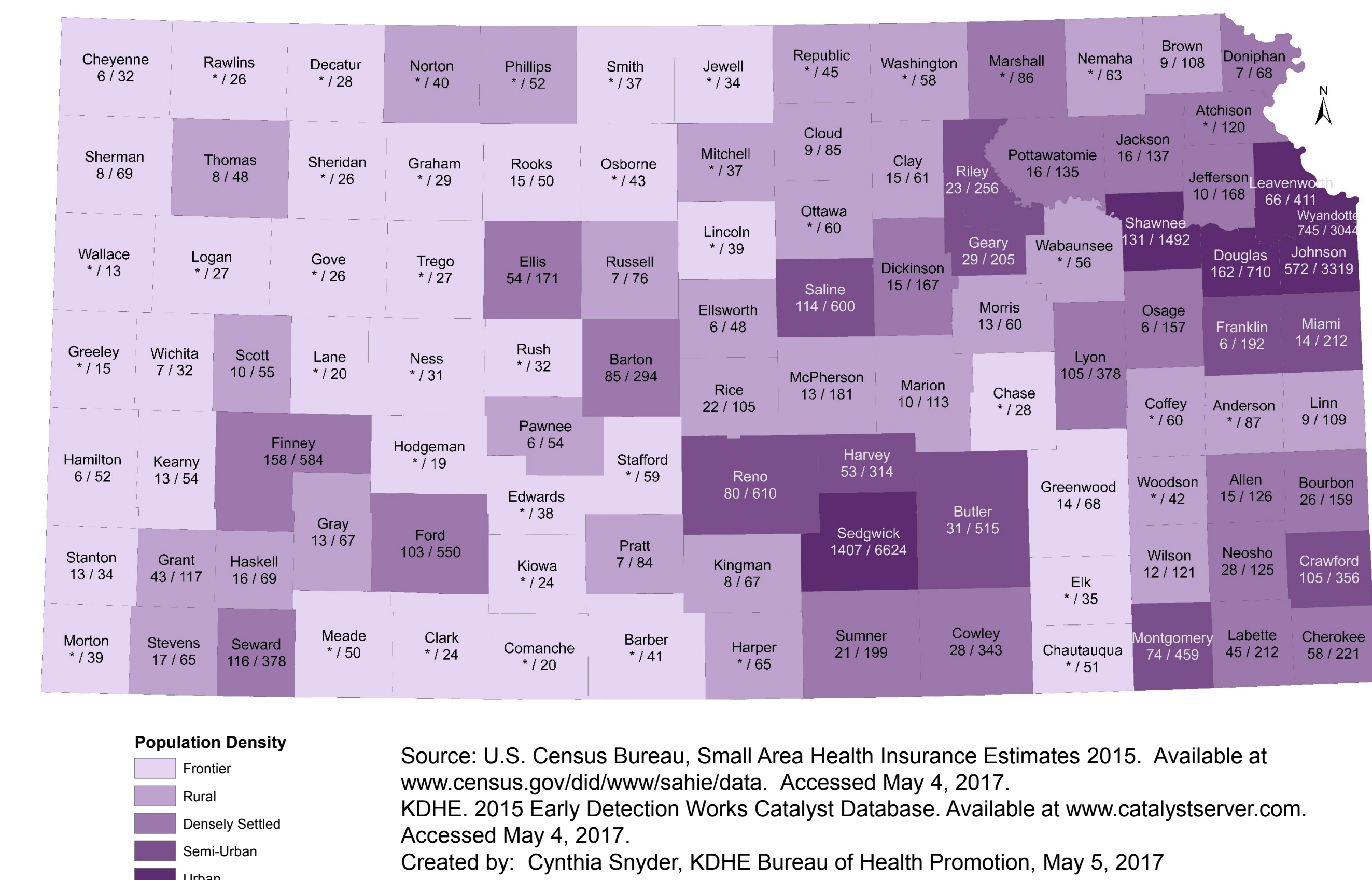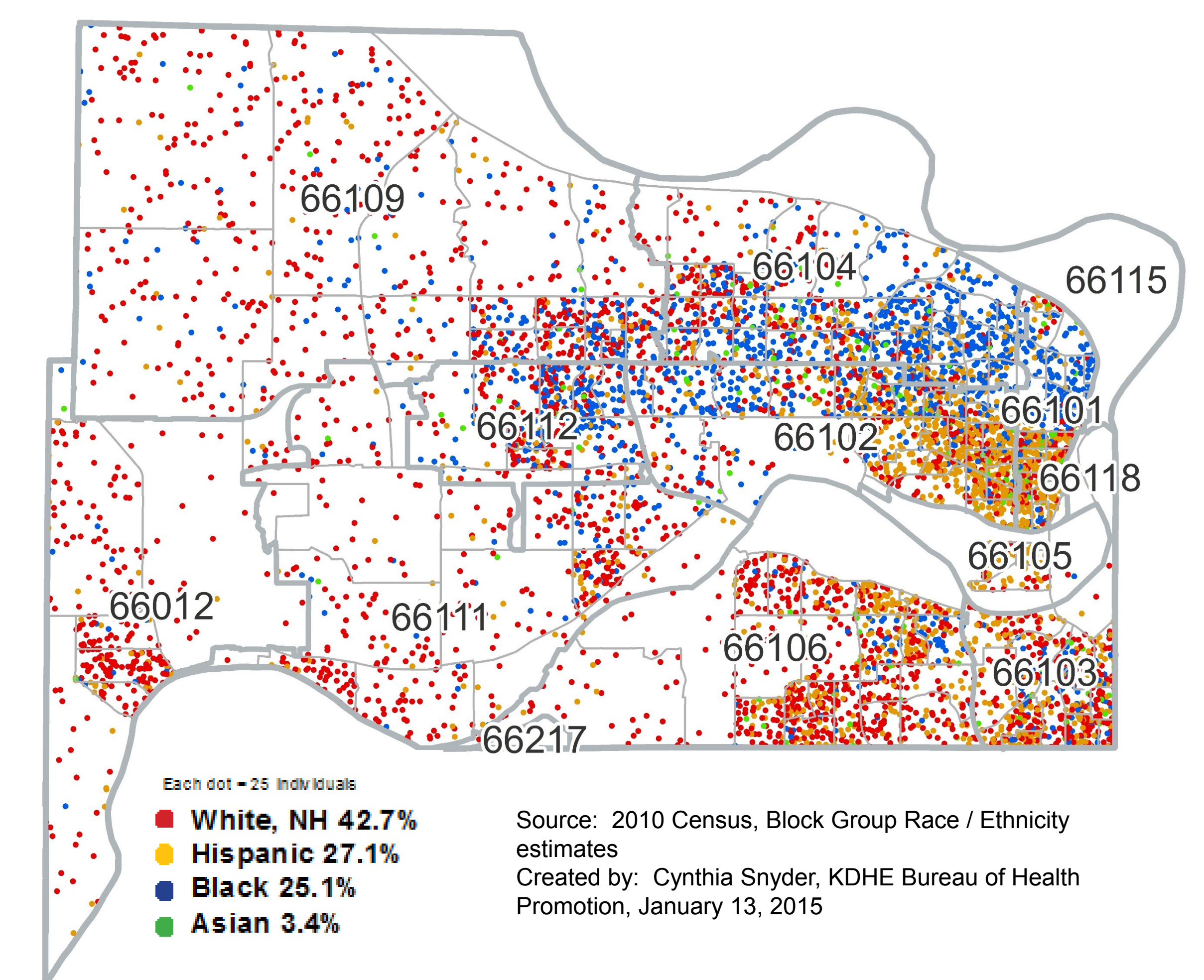Created by: Cynthia Snyder, KDHE Bureau of Health Promotion, May 5, 2017

Figure 3: A statewide map of program mammogram counts by county showed how many women used program services within a given timeframe. This information was presented along with data on the number of eligible women in each county (Small Area Health Insurance Estimates). The map is used internally to assess outreach/education efforts and community reach, and shared with potential providers to show the number of unserved women (potential patients) in their counties.

Figure 4: Wyandotte County Bus Routes and Mammogram Facilities

Source: 2013 Kansas City Area Transit Authority. Accessed through the Mid-America Regional Council on January 7, 2015.
Created by: Cynthia Snyder, KDHE Bureau of Health Promotion, January 13, 2015

Figure 5: Wyandotte County Residents by Insurance Status

Source: 2010 Census, Block Group Insurance estimates
Created by: Cynthia Snyder, KDHE Bureau of Health Promotion, January 13, 2015

Figure 6: Wyandotte County Residents by Race and Ethnicity

Source: 2010 Census, Block Group Race / Ethnicity estimates
Created by: Cynthia Snyder, KDHE Bureau of Health Promotion, January 13, 2015

Figures 4-6: County level maps illustrated the location of mammography facilities relative to transportation, and census information on insurance status and race/ethnicity. Internally, the maps were used to illustrate access barriers for Kansas NBCCEDP participants. Zip code boundaries were displayed for reference.

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Acknowledgements