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Joseph Chiweshe, Student

Sarah Wackerbarth, PhD, Committee Chair

Corrine Williams, ScD, MS, Director of Graduate Studies

**An Analysis of the role of Medicaid expansion on Mobile Mammography  
Units and Breast Cancer Screening in the Commonwealth of Kentucky**

**CAPSTONE PROJECT PAPER**

A paper submitted in partial fulfillment of the  
Requirements for the degree of  
Master of Public Health in the  
University of Kentucky College of Public Health

By

**Joseph Chiweshe, MD**

Lexington, Kentucky April 15, 2016

**Committee:**

**Sarah Wackerbarth, Ph.D. (Chair)**

**Kevin Pearce, MD, MPH (Committee Member)**

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Thank you.

**Joseph Chiweshe, MD**

## Abstract

### Introduction

Breast cancer and adequate screening remains a significant scientific, clinical and societal challenge both in Kentucky and in the U.S. To date, the lack of medical insurance has been implicated as a barrier to the provision of breast cancer screening not only to those within the Commonwealth of Kentucky but amongst the general population of the United States.

### Methods

The Kentucky Department of Health provided study data utilized in our analysis. The data requested consisted of Medicaid claims for mammography screens for all counties in the Commonwealth of Kentucky. In addition, data gathering occurred via interviews with four Mobile Mammography Units operating within and contracted with the state for breast cancer screening services.

### Results

Across all 120 counties in the Commonwealth, the average percentage of women eligible for screening mammograms who received screening mammograms through Medicaid was 28.2%. The major gaps identified were: (1) Implementing sustainable growth strategies (2) The need for tailored screening approaches to increase screening rates (3) Developing interventions and support networks for programs in the Commonwealth that endorse common guidelines and practices.

### Conclusions

As the Commonwealth of Kentucky works towards achieving increased mammography screening rates for its residents, continued support for the reduction of screening barriers through mobile services is recommended. Additionally, a focused effort to improve health literacy and extend the reach for those women with language, geographic, and economic barriers would be of benefit.

Keywords: Medicaid Expansion, Breast Cancer Screening, Mobile Mammography

## Contents

### List of Terms:

<b>I. Objective</b> .....	4
<b>II. Introduction</b> .....	4
<b>III. Methods</b> .....	8
<b>III. Results</b> .....	10
<b>IV. Discussion</b> .....	16
<b>V. Resources</b> .....	20
<b>References</b> .....	20
<b>Appendix</b> .....	21
<b>Biographical sketch</b> .....	27

### Terms:

ACS – American Cancer Society

CDC- Centers for Disease Control and Prevention

KDPH – Kentucky Department for Public Health

KWSP - Kentucky Women’s Cancer Screening Program

MMV – Mobile Mammography Van

USPSTF – United States Preventive Services Task Force

## **Objective:**

The objective of this analysis was to study the effect of Medicaid Expansion on breast cancer screening amongst eligible Kentucky women utilizing mobile mammography vans (MMV) units for this service. It is reasonable to hypothesize that one positive result from the expansion of Medicaid is an increase in screening for breast cancer, with potentially better health outcomes for women in the Commonwealth of Kentucky. This analysis also examined the potential effects on operational performance of the MMV units providing this service as a result of this policy change. To date, the lack of health insurance has been implicated as a barrier to the provision of breast cancer screening not only to those within the Commonwealth of Kentucky but amongst the general population of the United States. This analysis aims to provide a broader understanding of this barrier to care and establish a baseline for which further studies can build upon.

## **Introduction:**

In the United States, excluding dermatologically related skin cancers, breast cancer is the most common cancer in women. It is estimated that one in eight women will develop invasive breast cancer during their lifetime. According to American Cancer Society (ACS) estimates, that 231,840 new cases of invasive breast cancer and 60,290 new cases of carcinoma in situ were diagnosed within the United States in 2015<sup>1</sup>.

The importance of screening lies in the ability to detect breast cancer development at an early stage. The stage at which a breast cancer is diagnosed continues to be the most important determinant of outcome. A strong positive correlation has been noted in the tumor size and the extent of axillary lymph node involvement<sup>2</sup>. In order for screening to be of benefit it must

reduce the time between diagnosis and initial onset of disease. This will likely lead to improved health outcomes for a given patient<sup>3</sup>.

Although much progress has been made, for many, the goal of attaining routine screening continues to be hindered by a number of barriers. Among the identified barriers are time and distance to service setting and limited hours of availability. One solution has been the use of mobile mammography vans at worksites or in residential communities.<sup>4</sup>

It has also been observed that the lack of insurance is an important modifiable variable for improved health outcomes amongst populations of women that could utilize better access to screening via mobile van units<sup>5</sup>. There is also room for improvement amongst the Medicare population, as only 53.9 percent of Medicare fee for service enrolled women aged 65 and older had received screening services within two years prior to diagnosis. The national average for this group of women is 67.1 percent for those with supplemental private insurance<sup>6</sup>.

Another study looking at the influence of payer status analyzed 976,178 female patients from the National Cancer Database from cases diagnosed from 1998 to 2006. The study observed that patients without insurance or Medicaid were most likely to be diagnosed with stage III and IV cancers. The analysis also found that payer status had a statistically significant relationship with overall survival with Medicaid being less likely to be positively correlated with survival.<sup>7</sup>

Other investigators that have examined the influence of payer status on their populations have observed disparities. A study looking at breast and colorectal cancer consisting of patients aged 20 or older from the Texas Cancer Registry found that those aged younger than 65 years with no insurance coverage had significantly higher risks of mortality than those with private



insurance regardless of staging. There was no difference observed between those older than 65 and beneficiaries of Medicare and those with additional private insurance.<sup>8</sup> Proximity to primary care evaluation and visits are an important determinant of cancer detection, with a dose-response relationship correlated with having insurance.<sup>9</sup> More specifically, those with insurance coverage are more likely to visit a primary care physician and thus more likely to have breast pathology detected by a provider.

As higher rates of late stage breast cancer tend to occur in counties of lower socio-economic status, legislation has been instrumental in improving screening rates. In 1990, in response to the growing burden of breast and cervical cancers, Kentucky Senate Bill 41 established the Kentucky Women's Cancer Screening Program (KWCS) in order to provide high quality breast and cervical cancer screening services at a low or reduced cost to women in all of Kentucky's 120 counties. The KWCS provides breast and cervical screening, follow-up, education, outreach, and quality assurance for women in the Commonwealth of Kentucky.

The full extent as to which the Affordable Care Act and the Medicaid expansion impacted the Kentucky Women's Cancer Screening Program (KWCS) is continuing to be defined. It is estimated that 80 percent of previously KWCS eligible women are now covered with the expansion.

Prior clinical trials revealed that mammography screening decreases breast cancer mortality by approximately 15% in those aged 40 to 49 years of age and therefore it is important to include this age range in this study. As women aged 40-49 have lower risk of breast cancer, there is less benefit and potentially increased rates of false positives. For women at average risk, the American Cancer Society (ACS) recommends that women ages 40 to 44 should have the

choice to start annual breast cancer screening with mammograms and those aged 45 to 54 should get annual mammograms every year with informed decision making.

ACS guidelines then recommend that once at the age 55 and older, women should switch to mammograms every two years, or have the choice to continue yearly screening. In comparison, the USPSTF recommends biennial screening mammography for women aged 50 to 74 years. The decision to start screening mammography in women prior to age 50 years should be an individual one<sup>10</sup>.

The rates of adherence to screening guidelines have been stagnant over the past decade. Mobile mammography services can be deployed to various sites including but not limited to fairs, health clinics, and work sites. This service is thus potentially beneficial to working women and rural women that are at a geographical disadvantage<sup>11</sup>.

The purpose of this study was to establish a baseline and examine the Mobile Mammography services in the state. This paper aims to assess the effect of the expansion Medicaid insurance status on screening for breast cancer among eligible Kentucky women, with a focus on MMV units for delivering this service in a rural state. In addition, we aim to add to the current body of literature and offer relevant implications for health policy in regards to the financial viability for programs that provide this service.

**Methods:**

Medicaid claims data were provided by the Kentucky Women's Cancer Screening Program within the Kentucky Department for Public Health. The data consisted of 150,664 women between the ages of 40 to 64 years of age enrolled in Medicaid insurance and screened in Kentucky during the period from July 1, 2014 to June 30, 2015. For each enrollee, only the last claim was taken into consideration and all patients in this study were on annual mammogram screening recommendations. The time frame parameters were set for dates of service to have occurred between July 1, 2014 and June 30, 2015. CPT codes corresponding to coverage for screening mammography (77057 or G0202) were utilized. To remove any patient duplication a secondary screen utilizing the patients social security number was conducted.

Data were excluded for women whose Medicaid enrollment span was less than 90 days in FY 2015, those with a Medicaid enrollment gap of 45 days or more in FY 2015, and those women that would be considered dual eligible for Medicare and Medicaid. Data was also excluded for women enrolled in a Medicaid waiver program. The Medicaid waiver programs provide coverage for many different circumstances that include but are not limited to being disabled. For these women, their coverage status would not be affected by the Medicaid expansion and thus excluded from the analysis.

In addition, qualitative data for identifying barriers were collected from interviews with four MMV. The interviews were conducted via telephone or in person for a duration of one hour. At the conclusion of these interviews, additional quantitative data points consisting of budgetary elements were acquired from three of the MMV programs contracting with the Kentucky Department for Public Health for breast cancer screening services. One of the four programs,

opted to not provide additional data. The agreed upon terms of support for the programs was gathered from contracts provided by KDPH. All analyses were conducted by using Microsoft Excel software.

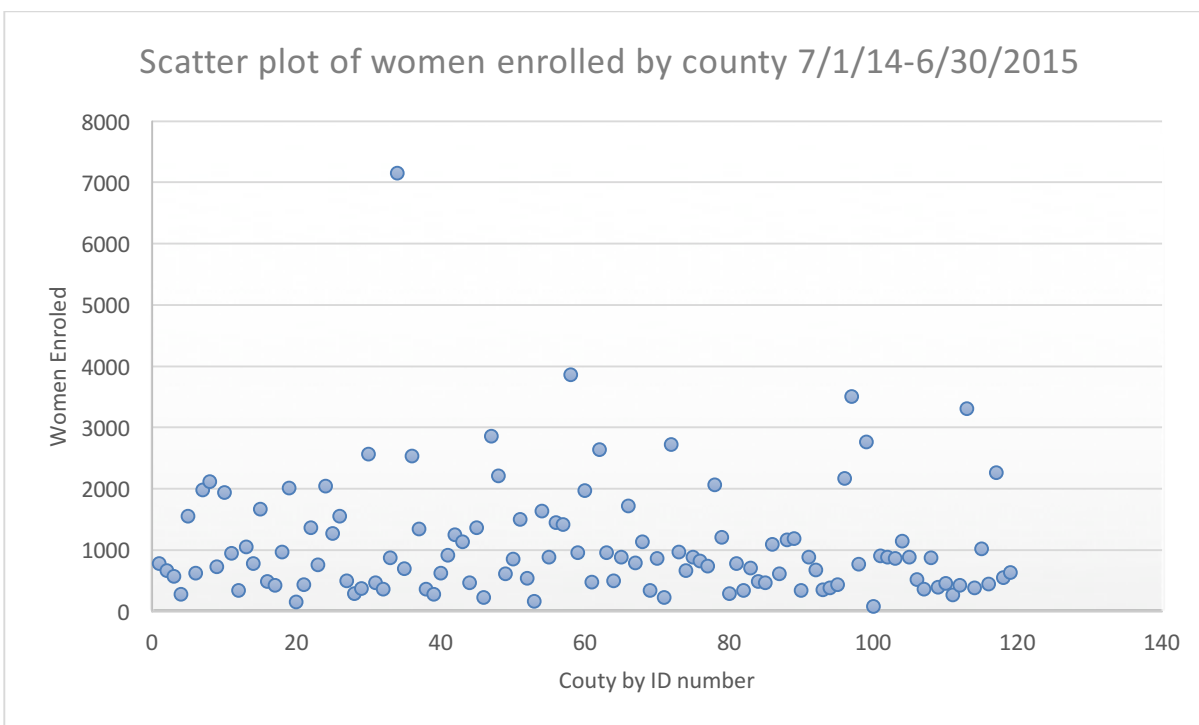
### **Results:**

Screening rates were calculated using Medicaid claims data and enrollee data records. Our exposure of interest is screening mammography. The total number of women aged 40 to 64 enrolled through Medicaid (July 1, 2014 to June 30, 2015) was 150,664. The number of screening mammograms covered by Medicaid (July 1, 2014 to June 30, 2015) was found to be 42,528. The average percentage of these women eligible for screening who received screening mammograms through Medicaid was calculated to be 28.2% across all 120 counties in the Commonwealth.

The cumulative frequency of our referent population of Medicaid covered women who underwent screening was 45,528. The screening rates per county are presented in Figure 1 as a scatterplot and within the appendix (Table 1). Table 2 depicts the screening rates for women in counties served by either one to two operating mobile mammography units. The 22 counties in Table 2 have 52,803 women aged 40 to 64 enrolled through Medicaid during the time period of July 1, 2014 to June 30, 2015. The average percentage of women who received screening mammograms through Medicaid in these counties in that timeframe was 25.0%. Table 3 is a graphical depiction of Medicaid covered screening mammograms in the Commonwealth of Kentucky. The areas of highest need are depicted with the color red denoting screening mammography rates in the range of 16 to 23.7% with the denominator being Medicaid enrolled women within the reference time period of July 1, 2014 to June 30, 2015 not meeting any of the

aforementioned exclusionary criteria. The map shows that 12 out of the 20 counties within this range are located in Northern Kentucky. Table 4 highlights the counties with less than 23.0% screening rates but also have an operating mobile mammography unit.

Figure 1: Screening Mammograms coverage amongst Kentucky Medicaid Enrollees for all counties.



1

Figure 1 depicts the number of women enrolled in Medicaid during our study period from 7/1/14 to 6/30/2015. Jefferson county was removed as an outlier with 21,929 women enrolled. The average enrolled amount of women per county was 1256. The ID number on the x-axis correspond to county number as listed in the appendix in alphabetical order.

<sup>1</sup> Jefferson county Outlier removed from plot

Figure 2: Graphic representation of screening rates and areas of highest need in Kentucky

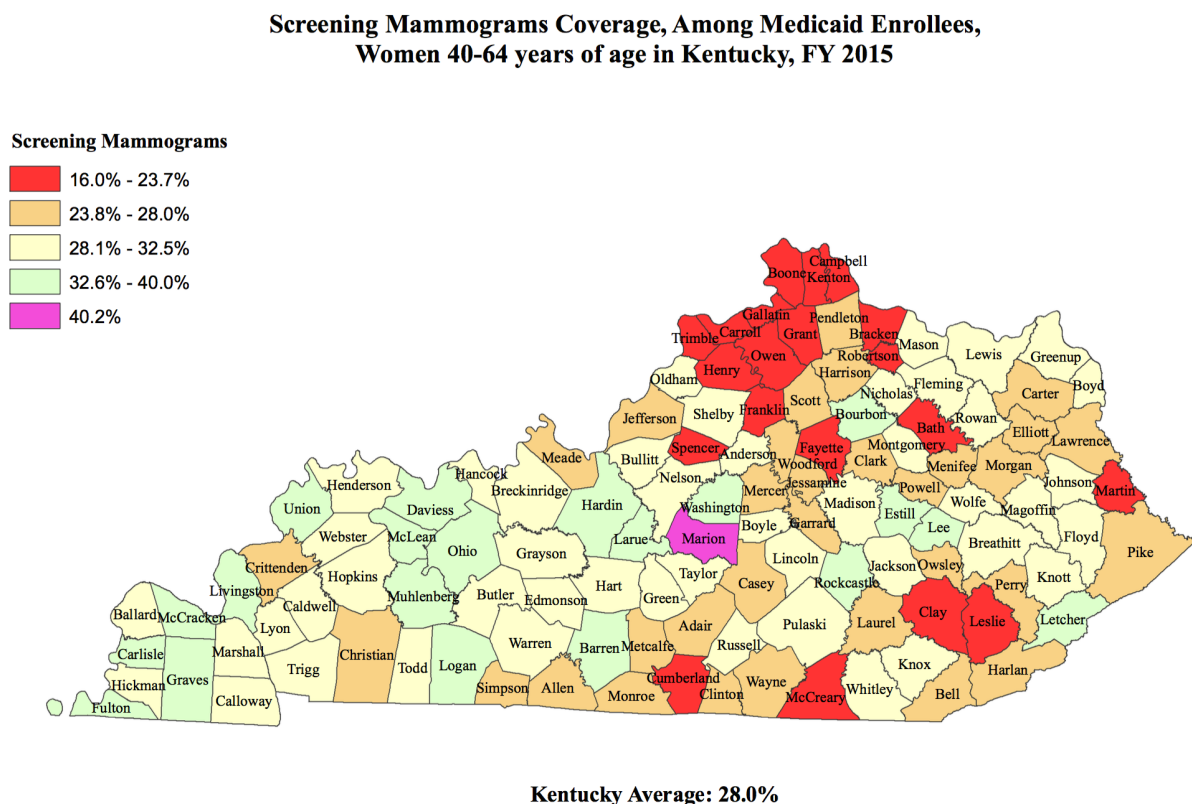


Figure 2 depicts rates for screening mammograms ranging from 16 percent to 40.2 percent. The rationale for the the cutoffs was simply done to provide quartiles for assessing rates. The county with the highest screening rate at 40.2% was Marion.

Table 2: Screening Mammograms coverage amongst Kentucky Medicaid enrollees for counties covered by a Mobile Mammography Unit:

County Name	Medicaid enrolled women meeting screening criteria (July 1, 2014 to June 30, 2015)	Number of Medicaid billed screenings (July 1, 2014 to June 30, 2015)	Screenings as percent of women fitting eligibility criteria
Boone	2111	486	23.0
Boyd	1935	550	28.4
Bullitt	1667	490	29.4
Campbell	2014	443	22.0
Carroll	439	99	22.6
Carter	1369	327	23.9
Elliott	358	99	27.7
Fayette	7150	1694	23.7
Floyd	2538	783	30.9
Gallatin	274	61	22.3
Grant	911	175	19.2
Greenup	1361	401	29.5
Harrison	611	160	26.2
Jefferson	21929	6070	27.7
Kenton	3863	830	21.5
Lewis	792	231	29.2
Martin	816	174	21.3
Mason	741	217	29.3
Owen	352	59	16.8
Pendleton	431	106	24.6
Scott	1141	288	25.2
	52803	13743	25.0

Table 2 depicts in alphabetical order, the names for counties with operating MMV units in the Commonwealth of Kentucky. Total women enrolled in Medicaid between July 1, 2014 to June 30, 2015 was 52,803 and the number of Medicaid billed screenings during this frame was 13,743. The average screening percentage for this population in these counties was found to be 25%.

Table 3: Screening rates of MMV coverage counties (counties with less than 23% denoted in red)

County Name	Medicaid enrolled women meeting screening criteria (July 1, 2014 to June 30, 2015)	Number of Medicaid billed screenings (July 1, 2014 to June 30, 2015)	Medicaid billed screenings as percent of Enrollees
Owen	352	59	16.8
Grant	911	175	19.2
Martin	816	174	21.3
Kenton	3863	830	21.5
Campbell	2014	443	22
Gallatin	274	61	22.3
Carroll	439	99	22.6
Boone	2111	486	23
Fayette	7150	1694	23.7
Carter	1369	327	23.9
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Lewis	792	231	29.2
Mason	741	217	29.3
Bullitt	1667	490	29.4
Greenup	1361	401	29.5
Floyd	2538	783	30.9
	52803	13743	25

Figure 3: Mammography screening rates for counties with operating unit

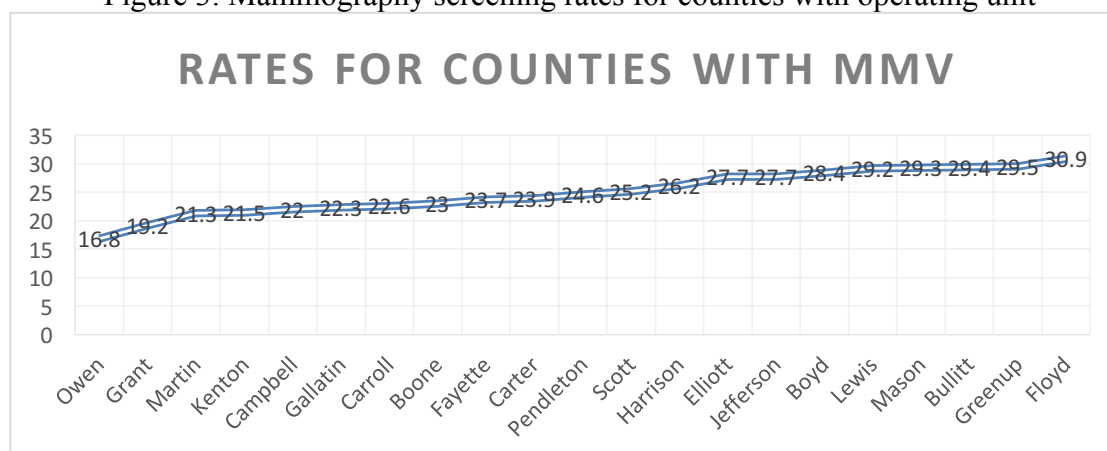




Table 5: Respective Mobile Mammography Unit provided data

		<u>MMVI</u>	<u>MMVII</u>	<u>MMVIII</u>
1	Number of Mammograms completed	FY 2013 (N/A) FY 2015 (6,800)	FY 2013 (1852) FY 2015 (2476)	FY 2013 (1893) FY 2015 (1808)
2	Operating Budget	\$2,000,000 for 2 Vans	\$1,015,000 for 1 van	\$1,016,470 for 1 van
3	Counties	Kenton Boone Grant Campbell Owen Carroll Gallatin Scott Fayette Harrison Pendleton	Jefferson Bullitt Floyd	Boyd Carter Elliot Greenup Floyd Lewis Martin
4	Number of Non-Medicaid/Medicare patients	FY 2013 (N/A) FY 2015 (3,000)	FY 2013 (N/A) FY 2015 (N/A)	FY 2013 (32) FY 2015 (9)
5	Number of sites visited by the unit in a fiscal year	FY 2013 (N/A) FY 2015 (250)	FY 2013 (134) FY 2015 (203)	FY 2013 (N/A) FY 2015 (230)
6	How many different locations visited in a fiscal year	FY 2013 (N/A) FY 2015 (210)	FY 2013 (80) FY 2015 (69)	FY 2013 (N/A) FY 2015 (33)
7	Strategic plan including goals and objectives	1.Tomosynthesis (Digital Imaging) 2.Increase Annual Screens	1.Increase screenings per month 2.Target high risk zip codes	1. Easier access for women close to home/work 2. To increase the total number of women screened 3. Increase early detection of breast cancer and reduce mortality
<b>Cost</b>	Cost incurred per site visit	\$4,000	\$5,000	\$4,419
<b>Cost</b>	Cost incurred per mammogram performed	\$294.11	\$409	\$562

In discussions with operating programs, they stated that following expansion, alternative sources of funding from charitable organizations ceased and impacted the programs from a financial perspective. Although, partnering with regulatory entities as evidenced by contracts between MMV and the Kentucky Department for Public Health has been key in aiding support for operational costs, it has not fully replaced the overall decreased funding. The strategic goals for operating programs included attaining new imaging technology, targeting higher risk counties, and increasing annual screening rates. In terms of operational performance, we observed MMV 1 was most efficient in terms of cost per mammogram and cost per site visited. Overall, the largest cost barrier to operations for MMV programs were found to be mechanical issues and repairs. The implications for state funding will be continued financial support for MMV programs as they work to achieve these goals.

The financial support of Mobile Units was a key aspect of successful screening. Programs that have patient navigators within their system and working with their population felt that they had improved follow-up rates for women returning for screens as recommend in the subsequent year. In addition, being part of a health system aided in off-setting costs that went into operations and compensation of more expensive staff as evidence by radiological specialists. The largest cost burden and barrier shared was the breakdown and repairs of the mobile vans. The majority of programs only have one operating van and if that van is down, all operations halt until it can be fixed. With some units currently operating at a deficit whilst continuing to work towards increasing screening rates this will continue to be an area of concern.

The MMV units interviewed stated a lack of patient education as a potential contributor to the low screening rates being observed throughout the Commonwealth. They have observed that although women are now covered, they do not understand what their coverage allows them

to be able to do or not do. Programs have started to address health literacy both due to lack of benefits understanding as well as language barriers by adding staff for the purpose of targeting those with English as a second language. Another aspect mentioned was the discrepancy in screening guideline messaging as some providers endorse the ACS's initiation of screening at the age of 45 and others that endorse the USPSTF's guidelines starting at 50. As mobile units continue to work to increase their screening rates from the effect of the affordable care act on their screening rates, continued policy and state support through contracts is recommended.

### **Discussion:**

In the Commonwealth of Kentucky, the expansion of Medicaid appears to have impacted mobile mammography units as more women enrolled in coverage. Additionally, discussions with the mobile mammography directors, revealed that they experienced a negative effect for overall operations following the passage of the ACA. Of note are the continued low rates of screening of eligible women enrolled within Medicaid as evidenced by a review of claims data. It appears that the counties in Northern Kentucky are most affected by this disparity in spite of having operational Mobile Units in those counties. The use of Mobile Mammography Vans and the Medicaid Expansion may not be sufficient to adequately address increasing screening mammography rates by itself. These findings call for additional efforts to bolster breast cancer screening as prior work has showed the southeastern United States as having up to 3.31 times more late stage tumors when compared to other regions of the U.S.<sup>12</sup>.

Among the limitations for this study were use of non-validated survey questionnaires, and only interviewing program directors. As there is a time delay with access to Medicaid data, the current trends being observed may change as the time line is extended. We were only able to

assess budgetary elements in Table 5 from 3 of the total 4 programs interviewed. In addition, programs were unable to provide complete pre and post Medicaid expansion numbers for some of the elements requested.

Previous studies found that in the United States, uninsured and Medicaid insured patients with breast, cervical, colorectal, head and neck, lung, prostate or uterine cancer have higher mortality than do those with private insurance or Medicare, even after adjustment for other factors. Those without insurance had a significantly higher risk of death within five years of diagnosis (41%–97%) than those with private insurance even after adjustment for important prognostic factors such as gender, age, race/ethnicity, marital status, SES, and stage<sup>13</sup>.

Possible reasons for uninsured and Medicaid insured cancer patients' poorer survival compared with privately insured cancer patients, even after adjustment for other factors including age, gender, race, SES and geography, are varied. One reason is poorer health and more comorbidities amongst the uninsured. This population may also have no or inadequate preventive health care and management of chronic conditions. The barriers to receiving treatment such as high cost, inability to navigate the health care system, and mistrust of the health care system result are contributing to decreased survival.<sup>14</sup>

An analysis of SEER data from 1969-2007 revealed a smaller decline in breast cancer mortality rates in Appalachian counties (17.5%) when compared with non-Appalachian counties (28.3%)<sup>15</sup>. A list of all Kentucky counties that are considered to be Appalachian refer to appendix. According to the County Health Rankings 2015, five of the target counties covered by MMV programs have mammography rates below Kentucky's rate of 60.1% for all payer screens and the national benchmark rate of 70.7% (Carter- 54.1%, Elliott- 50%, Floyd- 52.9%, Lewis- 51.1%, Martin- 45.9%). According to the CDC and NCI state cancer profiles, several of the

target counties have much higher rates than Kentucky (22.6 per 100,000) and the nation (21.9 per 100,000) for breast cancer mortality. These counties include Boyd (28.3), Carter (34.3), Floyd (26.5) and Greenup (22.9).

The Appalachian Regional Commission focuses on the most economically distressed counties in the region, using a measure of economic distress based on three economic indicators: three-year average unemployment rates, per capita market income, and poverty rates. Five of the target counties are classified as distressed and have a high percentage of residents below poverty level- Carter (20.3%), Elliott (31.8%), Floyd (28.9%), Lewis (29.1%) and Martin (35.1%) compared to Kentucky (18.8%). Poverty levels are an important contributor to lack of access to care as national studies suggest a higher risk for breast cancer mortality in women with lower household income. As Appalachian areas may be characterized by isolation, poverty, low literacy levels and a distrust of health care providers that affects healthy behaviors a more tailored and targeted approach to increasing rates will be necessary in these areas. These factors were reiterated as barriers to care by programs operating in the Appalachian region.

We observed that policies that lower out-of-pocket costs lower SES members of the population have the potential to improve screening rates through removal of financial barriers on the patient side of the equation as evidenced by gradually increasing screens for this population via MMVs. However, there may be other variables that may be contributing to the continued low screening observed in counties in spite of added mobile screening coverage. Next steps in addressing screening rates may benefit from focused effort in working to improve health literacy in this patient population and working with targeted advertising both geographically and demographically for women with language barriers and economic hardship.

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## Appendix:

**Following IRB protocol the following letter was sent to contracted Units:**

Dear participating health care professional, I would like to introduce you to Dr. Joseph Chiweshe who is currently in his final year in the General Preventive Medicine Residency at the University of Kentucky Medical Center as a fellow on the cancer prevention and control track through the American Cancer Society's Physician Training Award. He will be rotating with the Department for Public Health (DPH) for the months of January and February. He received his medical degree from the University of Nebraska and completed his internship in general surgery at West Penn Allegheny Health System in Pittsburgh, PA. He is earning his masters of public health degree from UK. His professional interests include health systems transformation and leadership to enhance quality, efficiency and delivery of care via innovation and technology.

As part of the cancer prevention track and his rotation at DPH he would like to interview directors/managers of KY's mobile mammography van units that KWCSPP contracts with. His plan is to ask about geographic and demographic coverage, barriers, needs, strengths, budget, etc. Dr. Chiweshe's goal is to do a qualitative interview in addition to ongoing quantitative studies for breast cancer screening in our state.

The interview will be 30 minutes to 1 hours in length and he would like to schedule an interview within the next four weeks, if possible. To set up a time to speak please send an email to [joseph.chiweshe@uky.edu](mailto:joseph.chiweshe@uky.edu) and a cc to [joseph.chiweshe@ky.gov](mailto:joseph.chiweshe@ky.gov) and Melody Stafford at [melody.stafford@ky.gov](mailto:melody.stafford@ky.gov).



Interview Protocol utilized for phone interviews:

“Once again, thank you for agreeing to participate in this interview. My name is Dr. Joseph Chiweshe, and I am a Preventive Medicine Resident at the University of Kentucky. I am on the cancer prevention track and thus conducting these interviews as part of my capstone work and to assist the Kentucky Department of Health’s Kentucky Women’s Cancer Screening Program in working to better understand and support MMV service in the state of Kentucky. As you know, there are a lot of women that are eligible for breast cancer screening in our state but are not receiving this service due to a number of barriers. My goal is to study the role of policy and state funding and its effect on breast cancer screening amongst eligible Kentucky women utilizing mobile van mammography (MMV) units for this service. The effects following the expansion of Medicaid insurance are thought to have resulted in increased of screening rates and hopefully better outcomes in the state of Kentucky.

“I will also be recording our conversation for transcription and documentation. Do you have any questions before we get started with the interview? If not, I’d like to start with some general questions.”

- 1) How long has the program been up and running?
- 2) What counties do you serve?
- 3) What has been the impact on the program since the expansion of Medicaid?
- 4) What are the barriers you experience to women not getting their mammogram in your area? (financial, cultural, access, etc..) and how have you approached these?
- 5) What is the success of mobile mammography units and what does it look like?
- 6) What type of demand do you experience for your service and how to you track this?
- 7) How do you reach out to more difficult geographic areas where at risk women live?
- 8) Have you used any benefits or incentive programs for patients who receive these services?
- 9) Have any key ingredients surfaced as necessary aspects to ensure success and if so what have those been?
- 10) Will you describe the process from start to finish of how a patient comes to know of the service to ultimate conclusion/follow up for services?

- 11) Are there ways to work to ensure follow-up if it is needed for these women in low access area?
- 12) From a Health IT stand point what type of mammography is equipped in your vans? If you have more than one unit, is there uniformity in all the van types used and how data is collected.
- 13) What key data do you collect from these women?
- 14) Any information on health outcomes of mobile mammography services (early detection vs late stage detection and diagnostic/treatment services needed)
- 15) What are your thoughts on policy around contracts like the one you have with the state?
- 16) How have the funds from this contract been used in your program?
- 17) Did you think the final terms and amount was fair?
- 18) Is there anything that could be done better from a local or state level

**Table 1: Kentucky Medicaid Coverage by County**

County Name	Medicaid enrolled women meeting screening criteria (July 1, 2014 to June 30, 2015)	Number of Medicaid billed Screenings (July 1, 2014 to June 30, 2015)	Screenings as percent of women fitting eligibility criteria
Adair	776	214	27.6
Allen	665	161	24.2
Anderson	570	160	28.1
Ballard	277	78	28.2
Barren	1552	510	32.9
Bath	622	140	22.5
Bell	1978	510	25.8
Boone	2111	486	23.0
Bourbon	729	243	33.3
Boyd	1935	550	28.4
Boyle	943	266	28.2
Bracken	342	81	23.7
Breathitt	1047	306	29.2
Breckinridge	781	244	31.2
Bullitt	1667	490	29.4
Butler	483	156	32.3
Caldwell	429	137	31.9
Calloway	965	303	31.4
Campbell	2014	443	22.0
Carlisle	157	52	33.1
Carroll	439	99	22.6
Carter	1369	327	23.9
Casey	759	193	25.4
Christian	2039	562	27.6
Clark	1265	347	27.4
Clay	1547	287	18.6

Clinton	495	128	25.9
Crittenden	286	76	26.6
Cumberland	367	85	23.2
Daviess	2563	994	38.8
Edmonson	469	143	30.5
Elliott	358	99	27.7
Estill	873	292	33.4
Fayette	7150	1694	23.7
Fleming	697	210	30.1
Floyd	2538	783	30.9
Franklin	1340	279	20.8
Fulton	360	120	33.3
Gallatin	274	61	22.3
Garrard	623	157	25.2
Grant	911	175	19.2
Graves	1254	456	36.4
Grayson	1138	339	29.8
Green	461	147	31.9
Greenup	1361	401	29.5
Hancock	222	66	29.7
Hardin	2855	951	33.3
Harlan	2206	568	25.7
Harrison	611	160	26.2
Hart	852	252	29.6
Henderson	1498	427	28.5
Henry	537	117	21.8
Hickman	168	52	31.0
Hopkins	1633	489	29.9
Jackson	887	250	28.2
Jefferson	21929	6070	27.7
Jessamine	1451	361	24.9
Johnson	1418	398	28.1
Kenton	3863	830	21.5
Knott	957	292	30.5
Knox	1966	623	31.7
Larue	481	160	33.3
Laurel	2636	710	26.9
Lawrence	957	257	26.9
Lee	501	166	33.1
Leslie	880	200	22.7
Letcher	1724	563	32.7
Lewis	792	231	29.2
Lincoln	1136	335	29.5
Livingston	339	132	38.9
Logan	865	294	34.0

Lyon	223	63	28.3
Madison	2720	864	31.8
Magoffin	962	296	30.8
Marion	659	265	40.2
Marshall	882	271	30.7
Martin	816	174	21.3
Mason	741	217	29.3
McCracken	2067	695	33.6
McCreary	1207	285	23.6
McLean	283	98	34.6
Meade	781	198	25.4
Menifee	343	95	27.7
Mercer	709	193	27.2
Metcalf	487	129	26.5
Monroe	466	123	26.4
Montgomery	1090	342	31.4
Morgan	610	159	26.1
Muhlenberg	1170	393	33.6
Nelson	1190	387	32.5
Nicholas	337	106	31.5
Ohio	885	329	37.2
Oldham	675	202	29.9
Owen	352	59	16.8
Owsley	385	107	27.8
Pendleton	431	106	24.6
Perry	2168	541	25.0
Pike	3505	940	26.8
Powell	769	194	25.2
Pulaski	2764	888	32.1
Robertson	80	18	22.5
Rockcastle	903	313	34.7
Rowan	888	262	29.5
Russell	866	265	30.6
Scott	1141	288	25.2
Shelby	885	266	30.1
Simpson	514	133	25.9
Spencer	364	82	22.5
Taylor	868	265	30.5
Todd	395	113	28.6
Trigg	453	135	29.8
Trimble	265	58	21.9
Union	421	138	32.8
Warren	3310	1029	31.1
Washington	384	129	33.6
Wayne	1016	255	25.1

Webster	446	129	28.9
Whitley	2265	661	29.2
Wolfe	547	156	28.5
Woodford	633	176	27.8
	150664	42528	28.2

### **Average Estimated Mobile Mammography Unit Program Expenses**

Breast Care Center Supervisor (salary and fringe benefits)- \$70,304

Community Relations Coordinator that handles scheduling (salary and fringe benefits) - \$79,768

Mammography Technicians x 2 (salary and fringe)- \$140,608

Radiologist- \$350,000

Mobile Unit Driver (salary and fringe)- \$32,448

Mileage-approx. \$1800/month \$21,600 for the year

KDPH Contract Funding provided by the policy and grant for staffing purposes and fringe for a total of \$117,865.

### **Current Breast Cancer Screening Guidelines:**

For women at average risk

The USPSTF recommends biennial screening mammography for women aged 50 to 74 years.

The decision to start screening mammography in women prior to age 50 years should be an individual one.

The American Cancer Society recommends. Women ages 40 to 44 should have the choice to start annual breast cancer screening with mammograms if they wish to do so. Women age 45 to 54 should get mammograms every year. Women age 55 and older should switch to mammograms every 2 years, or have the choice to continue yearly screening.

### **Appalachian Counties:**

Kentucky: Adair, Bath, Bell, Boyd, Breathitt, Carter, Casey, Clark, Clay, Clinton, Cumberland, Edmonson, Elliott, Estill, Fleming, Floyd, Garrard, Green, Greenup, Harlan, Hart, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, Lincoln, McCreary, Madison, Magoffin, Martin, Menifee, Metcalfe, Monroe, Montgomery, Morgan, Nicholas, Owsley, Perry, Pike, Powell, Pulaski, Robertson, Rockcastle, Rowan, Russell, Wayne, Whitley, and Wolfe

**Biographical Sketch:**

Dr. Chiweshe is concluding the Preventive Medicine Residency program at the University of Kentucky after completing an internship year in General Surgery followed by a year spent conducting Clinical Trials Research. He is in the Cancer Prevention and Control Track through the American Cancer Society (ACS) Physician Training in Preventive Medicine Award and serves as a member of the American Cancer Society Leadership council. With interests that encompass health care and health systems innovations in terms of delivery models, quality improvement, efficacy, and the implementation of technology to aid efficiency. He has experience working at the University of Nebraska's Technology Transfer Offices to drive commercialization of translational research ideas and intellectual property to where they will benefit health care and patients on a larger scale and most recently he worked for Blue Cross Blue Shield Venture Partners. He is currently serving as Immediate-Past President of the Resident Physician Section for the American College of Preventive medicine (ACPM). Additionally, he is a member of the Committee on Business and Economics for the American Medical Association, the UK Healthcare Clinical Quality committee, and the Business Development committee for ACPM.

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