Disparities in Breast Cancer Outcomes among Latinas and Blacks in the US
Avon Grant #02-2015-020
Research Progress Report for Year 2
June 1, 2016 – May 31, 2017

Sinai Urban Health Institute enthusiastically submits this Research Progress Report to summarize our Year 2 activities related to the Disparities in Breast Cancer Outcomes grant (#02-2015-020). As outlined in the contract, Avon's generous funding of this project supports three important research studies related to disparities in breast cancer outcomes in Latina and Black populations. The original goals and study topics are outlined below.

1	Goal: Generate breast cancer prevalence and mortality rates among Hispanic subgroups in the US.
Study: This critical study will improve understanding of the breast cancer prevalence and mortality rates among Hispanic subgroups in the US. This large and growing population is incredibly diverse and research has shown that rates presented for all Hispanics mask important differences between the different ethnic subgroups that fall under the "Hispanic" umbrella. This study presents data for US Mexicans, Puerto Ricans, Cubans, and Central and South Americans. Data on the breast cancer prevalence and mortality among these groups has not been previously available.	

2	Goal: Identify factors that contribute to the presence or absence of disparities in breast cancer mortality at the city level.
Study: The second study seeks to improve understanding of what factors contribute to the presence, or absence, of disparities at the city level. Specifically, the aim is to systematically assess the cities included in the 2014 Avon-Sinai Black:White disparity study (Hunt BR, Whitman S, Hurlbert M. Increasing Black:White Disparities in Breast Cancer Mortality in the 50 Largest Cities in the United States. *Cancer Epidemiology,* 2014). Cities with large disparities such as Memphis, Houston, and Los Angeles will be compared and contrasted to cities with smaller disparities such as New York and Minneapolis.	

3	Goal: Calculate Black and White breast cancer mortality rates and disparities for 2010-2012.
Study: The final study will update the 2014 Avon-Sinai Black:White disparity study by examining Black and White breast cancer mortality rates and rate ratios with the most recent mortality data available. Specifically, the prior study covered the time period 1990-2009 while the updated study will cover 2010-2012.	

Update on Progress
Substantial progress has been made toward these goals in the past year. In particular, two of the three funded research papers were published and the research findings were widely disseminated. Bijou Hunt presented findings from one of the studies at the annual Avon Forum and both studies received extensive media coverage. The third funded research paper is in progress and additional studies have been published as well, thanks in part to a no-cost extension that was granted for this project, extending the funding period to May 31, 2018.

1	**Breast cancer prevalence and mortality among Hispanic subgroups in the United States, 2009-2013**	**Published 9/2016**

Updates: This paper was published in *Journal of Cancer Epidemiology* on September 8th, 2016 to coincide with the 2016 annual Avon Forum. The author, Bijou Hunt, presented the findings in the keynote address at the forum. The publication received extensive media attention (summarized in the appendix), including coverage in USA Today, Univision, and the Miami Herald.

Key findings: This paper presents data on breast cancer prevalence and mortality among U.S. Hispanics and Hispanic subgroups, including Cuban, Mexican, Puerto Rican, Central American, and South American. Overall breast cancer prevalence among U.S. Hispanic women was 1.03%. Although the estimates varied slightly by Hispanic subgroup, these differences were not statistically significant. The breast cancer mortality rate for Hispanics overall was 17.71 per 100,000 women. Higher rates were observed among Cubans (17.89), Mexicans (18.78), and Puerto Ricans (19.04), and a lower rate was observed among Central and South Americans (10.15). With the exception of the rate for Cubans, all Hispanic subgroup rates were statistically significantly different from the overall Hispanic rate. Additionally, all Hispanic subgroups rates were statistically significantly higher than the Central and South American rate. The data reveal significant differences in mortality across Hispanic subgroups. These data enable public health officials to develop targeted interventions to help lower breast cancer mortality among the highest risk populations.

Table 3. Breast cancer mortality rates by race and ethnicity, United States: 2009-2013.		
Population Group	**Mortality Rate[a]**	**95% CI**
U.S. population	22.73	22.63-22.83
Non-Hispanic White	22.49	22.37-22.60
Hispanic	17.71	17.41-18.02
Cuban	17.89	16.79-19.00
Mexican	18.78	18.34-19.22
Puerto Rican	19.04	18.08-19.99
Central and South American	10.15	9.53-10.77
Source: National Center for Health Statistics.		
Abbreviation: CI = confidence interval.		
[a]Age-adjusted breast cancer mortality rate is expressed per 100,000 females using the US 2000 Standard Population.		

2	**Ecological Predictors of Breast Cancer Mortality among White and Black Women in the United States**	**In Progress**

Updates: Based on an extensive literature review, we have successfully compiled city-level data on a variety of factors thought to contribute to the racial disparity in breast cancer mortality. This database will be used for our analysis moving forward. While this project was originally slated to be completed second, we moved it to third place as the 50 cities update paper was prioritized instead. This re-prioritization, done in conjunction with our Avon Project Officer's input, was based on increasing interest among colleagues around the country in seeing potential changes in the data since the last paper. Additionally, we had been contacted by several other researchers about our plans to update the analysis and we realized that we needed to publish the findings before another researcher did.

We do not anticipate any issues with completing this project in the current grant year. The analysis plan is to employ negative binomial regression in the examination of the predictors of Black and White breast cancer mortality rates.

3	**Black:White Disparities in Breast Cancer Mortality in the 50 Largest Cities in the United States, 2005-2014**	**Published 10/2016**

Updates: This paper, which updates our previous 50 city, 20-year study that examined disparities in breast cancer mortality rates among non-Hispanic Black and non-Hispanic White women, was published in Cancer Epidemiology in October 2016. The paper presents data for two five-year intervals: 2005-2009 and 2010-2014. Co-authored with Marc Hurlbert, this publication received substantial media attention (summarized in the appendix), including coverage in more than 10 news articles, as well as a forthcoming radio piece by the British Broadcasting Company (BBC).

Key findings:
At the most recent time point (2010-2014), the RR was significantly greater than 1.00 in the US and 24 cities. The change in the Black:White disparity, was statistically significant in five cities and the US. The percent difference increased significantly in Atlanta, GA (from 4.1 to 117.4, p<0.001); San Antonio, TX (from 24.4 to 79.3, p=0.034); and the US (from 39.7 to 43.1, p=0.007). The percent difference decreased significantly in Memphis, TN (from 111.0 to 68.9, p=0.043); Philadelphia, PA (from 43.1 to 23.5, p=0.049); and Boston, MA (from 48.9 to 0.7, p=0.022).

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Black:white disparities in breast cancer mortality in the 50 largest cities in the United States, 2005–2014

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	Additional Research on Breast Cancer Disparities and Community-Based Interventions
	The original proposal included support for additional projects and updates on these are provided below. Notably, several timely and important opportunities for collaboration arose over the last year and efforts were thus focused heavily in this area.
1	**Assisting with the publication and dissemination of data and findings from the Avon-funded Helping Her Live project.**
	As the former Evaluation Manager for the Helping Her Live breast health navigation program at SUHI, Bijou has continued to provide support in disseminating research findings from this project. o Bijou Hunt previously assisted with the publication of the paper, "Keys to the Successful Implementation of Community-Based Outreach and Navigation: Lessons from a Breast Health Navigation Program" in *Journal of Cancer Education* (Published 9/2015). o More recently, Bijou Hunt assisted with another Helping Her Live publication, "Evaluation of Mammogram Parties as an Effective Community Navigation Method" in *Journal of Cancer Education* (Published 3/2017). o Bijou Hunt is also assisting with another Helping Her Live paper on translating the HHL model to additional Chicago community areas. These new areas are predominantly Hispanic and the paper seeks to highlight the successes and challenges of translating a well-established outreach and navigation program to a new area.
2	**External collaboration on manuscripts related to breast cancer.**
	o In collaboration with researchers from Loyola University Chicago and University of Illinois Chicago, Bijou Hunt was a co-author on the following publication in *Cancer Epidemiology*: "Potential Impact of the Affordable Care Act's Preventive Services Provision on Breast Cancer Stage: A Preliminary Assessment Cancer Epidemiology" (Published 6/2017). Avon is listed as the supporting funder for Bijou Hunt on this manuscript. o In collaboration with researchers from the Metropolitan Breast Cancer Task Force, Bijou Hunt has submitted the following manuscript for publication in *Cancer Causes & Control*: "Disparity in breast cancer mortality by age group in the US: Will the current screening guidelines increase disparities?" (Under review). Avon is listed as the supporting funder for Bijou Hunt on this manuscript.
3	**Analyzing breast cancer-specific data from the Sinai Community Health Survey 2.0, which became available in January 2017.**
	o The Sinai Community Health Survey 2.0 includes approximately 500 questions on child and adult health, is a representative sample of nine Chicago community areas, and provides data for non-Hispanic White, non-Hispanic Black, Mexican, and Puerto Rican

persons.

- o The Sinai Survey contains several questions specific to breast health, including whether the respondent has ever had a clinical breast exam (CBE) or mammogram, when the respondent last had a CBE or mammogram, and the reasons why the respondent has not had a mammogram in the last 3 years (if applicable).

- o Work on this project began in May 2017. Several SUHI researchers, including Bijou Hunt, Nazia Saiyed, and Charlotte Picard are involved in this project. So far, we have examined self-reported mammography by Chicago community area and by race/ethnicity. We are interested in comparing these data to nationally reported mammography rates.

Plans for Year 3

In the third and final year of the project, the primary focus will be completing the third funded paper, "Ecological Predictors of Breast Cancer Mortality among White and Black Women in the United States." Bijou is collaborating with a researcher from Loyola University Chicago, as well as with Marc Hurlbert on this paper. The goal is to submit the paper for publication in *Cancer Epidemiology* by May 2018. Additionally, work will continue on the analysis of data from the Sinai Community Health Survey 2.0 and the goal is to submit a paper for publication by January 2018. Finally, should additional opportunities for collaboration arise, these will be considered as well.

Appendix: Summary of Media Coverage of Avon-Funded Studies by B. Hunt

Study	Media Outlet	Link
Hispanic Breast Cancer Prevalence and Mortality in the US	USA Today	http://www.usatoday.com/story/news/nation/2016/09/08/hispanic-women-breast-cancer/89657372/
	NBC News online	http://www.nbcnews.com/news/latino/puerto-ricans-mexicans-cubans-lead-latinos-breast-cancer-death-rates-n645076
	Univision	http://www.univision.com/noticias/cancer/puertoriquenas-mexicanas-y-cubanas-son-las-hispanas-que-mas-mueren-por-cancer-de-seno
	Miami Herald	http://www.miamiherald.com/news/health-care/article108132757.html
	FaceBook - It's About Time	https://www.facebook.com/ItsAboutTimeMBC/videos/1591386327832277/
	Fox News Latino	http://latino.foxnews.com/latino/health/2016/10/13/new-study-says-country-origin-may-impact-latina-breast-cancer-survival-rate/
	Women's Health Mag	http://www.womenshealthmag.com/health/hispanic-women-breast-cancer
50 Cities Black:White Disparities in the US	WebMD	http://www.webmd.com/breast-cancer/news/20161003/breast-cancer-deaths-black-women
	Buzzfeed	https://www.buzzfeed.com/caseygueren/black-women-in-the-us-are-much-more-likely-to-die-from-breas?utm_term=.pmO9a5K1e#.wsQP2QROK
	Georgia Health News	http://www.georgiahealthnews.com/2016/10/atlanta-lags-black-womens-survival-breast-cancer/
	Boston Magazine	http://www.bostonmagazine.com/health/blog/2016/10/03/breast-cancer-disparity/
	Health.com	http://www.health.com/breast-cancer/breast-cancer-racial-disparity
	LA Sentinel	https://lasentinel.net/new-avon-foundation-funded-breast-cancer-study-finds-black-women-are-dying-at-higher-rates-than-white-women.html
	Shape.com	http://www.shape.com/lifestyle/mind-and-body/black-women-are-more-likely-die-breast-cancer-white-women
	NBC5 News	http://www.nbcchicago.com/blogs/making-a-difference/barbara-bates-cancer-foundation-making-a-difference-396718831.html
	Refinery29	http://www.refinery29.com/2016/10/125922/breast-cancer-mortality-rate-higher-black-women