



La Noticia De Salud

The Official Newsletter of the Connecticut Center for Eliminating Health Disparities among Latinos*

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Director's Column



This issue of *La Noticia de Salud* is devoted to highlighting the breadth and depth of work from CEHDL affiliates/colleagues. As the article based on the work of Jennifer McTiernan H. from CitySeed in New Haven illustrates, addressing food insecurity in low-income communities requires a socio-ecological framework that takes into account access to healthy foods such as fresh fruits and vegetables from a food system perspective. Mammography research among African-American and Latina women, led by Beth Jones and her team at Yale School of Public Health, illustrates the importance of access, not only to timely screening, but also access to a culturally appropriate follow-up after a diagnosis. When preventive measures fail and treatment for serious conditions is necessary there is little doubt that DNA-guided medicine has a great potential. In his article, Dr. Gualberto Rúaño, from Genomas, Inc. and Hartford Hospital, illustrates the potential benefit of this technology in the highly genomically diverse Puerto Rican community. Many questions still remain as to if and how this technology will be made available to socio-economically disadvantaged groups. Research towards this end is sorely needed. Finally, understanding health disparities requires major improvements in the quality of ethnic/racial data that we collect and how these data are used to improve the quality of services. This is eloquently illustrated in the article describing the work of Minakshi Tikoo from the University of Connecticut Health Center.

Health disparities is a highly multi- and inter-disciplinary field of study. Making progress in this field requires a high level of team work and integration of approaches ranging from the community to the genome and the interactions between the two. It is my hope that CEHDL continues bringing together the outstanding scientists, such as those featured in this issue, that are needed to make this happen.

Rafael Pérez-Escamilla, PhD

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Community-Based Change through Community Food System Work

by Nishang Gupta, CEHDL correspondent

“Vandana Shiva notes that 50 to 60 percent of any population is engaged in the food system, including everything from the farm to distribution,” noted Jennifer McTiernan H., Executive Director of CitySeed, Inc, at her February 19, 2009 CEHDL seminar presentation. The goal of New Haven, CT based CitySeed is to increase access to local and healthy food in addition to promoting farm viability. “Our mission is to empower individuals to make a change at the grassroots level, in order to promote community development, food justice and accessibility, and farm viability.” McTiernan stated.

One way that CitySeed aims to achieve its goal is by setting up farmers’ markets in New Haven, to provide a straight connection between farmer and consumer. “In this way, Connecticut farmers are directly connected to their customer base. They are proud of the fact that they are bringing fresh, healthy, and local food to the city to people who wouldn’t otherwise have access to it,” McTiernan reasoned. The four farmers’ markets in New Haven accept WIC and EBT/ Food Stamps, increasing access to local and healthy food, among New Haven residents. The direct link between consumer and farmer protects the viability of the farms, encouraging farmers to respond to market demands and grow their businesses.

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McTiernan reported that CitySeed’s four farmers’ markets have added \$1.75 million to the local economy and job creation in 2008 alone (based on the Sticky Economy Evaluation Device). Since 2005, CitySeed estimates that it has added \$5.65 million to the local economy and has redeemed \$235,994 in WIC and Food Stamps. “These numbers can be converted to acres of farmland preserved, or to amount of food consumed, and all three measurements show the resounding impact of our farmers’ markets in the local community,” McTiernan

asserted. “Indeed, farmers say that farmers’ markets create an increased demand for their products.”

One of CitySeed’s markets is community supported, in that shares of the market are sold to community members who live throughout the city, tying the neighborhood market’s success to the broader community. This program, called the Community Supported Market, also delivers produce to people who receive WIC and Food Stamps and live in neighborhoods without a farmers’ market, which increases access to the farmers’ markets and local and healthy food for other wards of the city.

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Other initiatives include the ‘Seed To Table’ initiative, “which is a farm to restaurant program,” McTiernan commented. “Fresh, local food needs to show up in grocery stores and restaurants, not only in farmers’ markets.”

CitySeed also advocates for policy change. Some state policy initiatives of CitySeed include the defining of the term “farmers’ market” through a state statute passed in 2006. By statute, the WIC program only permits fruits and vegetables to be purchased using WIC coupons at farmers’ markets. “In the past, this statute could have been interpreted to mean that farmers could only sell these items at farmers’ markets, in turn hurting farm viability and lowering access to other foods such as dairy and meats,” McTiernan stated. CitySeed managed to clear up the confusion to expand the definition of a farmers’ market to “an extension of the farm,” so that farms could sell the broad range of farm products that they could sell at their farm stands, ensuring inner-city residents’ continued access to them.

“We want to continue to engage the community in this effort beyond the farmers’ markets,” McTiernan

stated. CitySeed has initiated a bilingual New Haven Community Cookbook to distribute knowledge to the community regarding the cooking and use of fresh, local food. This initiative, coupled with farmers' market recipe cards, provide educational tools for cooking fresh, healthy foods.

The 'Growing Healthy Eaters and Readers' Program has exposed over 1200 children and families to hands on literacy based activities and farmers' market field trips. The children grow peas in cups at home and in school. "The repeated exposure to such healthy foods builds and develops healthy habits from a young age," McTiernan noted. "Many parents are surprised to know that their kids would actually eat these kinds of foods."

"In the end, it is all about creating a local food system that makes fresh, healthy food available to all," McTiernan concluded. "Even tomatoes and dark greens are grown in local greenhouses. Purchasing local produce,



New Haven Farmer's Market vegetable stand

especially if it is from a farmers' market, will support the local economy and sustainable agriculture. There is a standard of integrity behind these products. People know what they are getting."

Breast Cancer Screening Behavior of Hispanic Women Living in the Northeast

by Nishang Gupta, CEHDL correspondent



*Dr. Beth Jones,
Yale School of
Public Health*

Beth A. Jones, PhD, associate professor at the Yale School of Public Health, was recently awarded a 5-year \$3.4 million grant from the National Cancer Institute to study the cancer screening behavior of Hispanic women living in the Northeast United States. Having already studied the screening disparity between white and African American women, Jones started

her CEHDL seminar on November 21, 2008 by pointing out that "there is a notion among minorities that breast cancer is a *white* woman's disease."

Jones' previous study indicated that black women had a lower breast cancer incidence rate and a higher breast cancer death rate than those of white women. Although this finding is often attributed to lack of mammography

screening, her work suggests that some women who do undergo mammography screening do not receive the full benefit of this early detection tool. Jones reported that "The 5 year survival rate for African American women is 78 percent, which is what it was for white women 25 years ago."

Despite a lower incidence of breast cancer, Hispanic/Latino women have a later disease stage at diagnosis and a worse survival rate than whites perhaps, in part, as a result of lower screening rates than either African

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In her new study, Jones will identify key predictors of three outcomes that influence the benefit of screening mammography, as delivered in the current health care system. These three outcomes are adherence to recommended screening guidelines, adequate communication of results in screening mammograms, and adequate follow-ups for abnormal exams.

In studying screening behavior prospectively, Jones' previous study indicated that African American women were less likely than White women to be adherent to recommended guidelines, as measured by receipt of regularly scheduled mammograms. When socio-economic status was adjusted for, however, this racial disparity was diminished. African American women were also about two times more likely to have inadequate communication of results than white women had, by either not receiving their results or not accurately reporting the result of their exam. In the case of abnormal exams, African American women were about 3.5 times more likely to have inadequate follow-up than white women were, after adjusting for

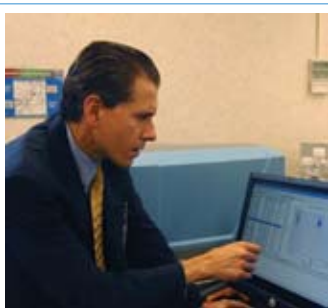
In her new study, Jones will identify key predictors of three outcomes that influence the benefit of screening mammography... adherence to recommended screening guidelines, adequate communication of results in screening mammograms, and adequate follow-ups for abnormal exams.

socio-economic status and several other relevant factors. Jones speculated that group differences in 'health literacy,' or some other unmeasured factor that differs by race contributed to the disparity in inadequate follow-ups.

Using a similar approach for her prospective study, Jones hopes to discover new opportunities to maximize the benefit that Hispanic women receive from screening mammography, as delivered in the current healthcare system. She hopes to translate her findings to effective intervention at the individual, system, and policy levels. "There is much room for improvement," Jones concluded.

Bringing Personalized Medicine to the Hispanic Population

Gualberto Ruaño, M.D., Ph.D., President, Genomas Inc., Director of Genetics Research, Hartford Hospital, Professor Adjunct, University of Puerto Rico Medical Sciences, g.ruano@genomas.net, www.genomas.net



Dr. Gualberto Ruaño, Genomas and Hartford Hospital

DNA-guided medicine poses great advantages for the highly heterogeneous Hispanic population. Similar to others in Latin America, the Puerto Rican population originated as a result of admixture between Amerindians,

whose ancestors had migrated from the Amazon Basin and arrived in Puerto Rico 2200 years before present, and Spaniard and West-African individuals. The island of Puerto Rico thus is endowed with a distinctive population in terms of its gene flow. There are growing

numbers of Puerto Ricans in the USA. Currently, Puerto Ricans represent 1.2% of the USA population and 9.6% of the Hispanic population in the USA. Admixture studies in Puerto Ricans, either in the island or the continental USA, have been scarce. The history of migration and admixture can be reconstructed and interpreted using genetic markers. Our results demonstrated that population analysis can be performed with functionally important genes instead of conventional ancestry informational markers to increase the relevance of population genetic studies for clinical epidemiology and personalized medicine.

We performed physiological genomic analysis on 196 important cardiovascular, neuroendocrine and metabolic genes (including key pharmaceutical targets) in 100

anonymous, geographically representative DNA samples from the Newborn Screening Program at the University of Puerto Rico Pediatric Hospital.¹ Population structure was examined using gene polymorphisms for clustering. The Puerto Rican sample is found to be broadly heterogeneous. We observed 3 main clusters in the population, which we hypothesize to reflect the historical origin of the Puerto Rican population as Amerindian with relatively recent European and African admixture. We present evidence for this interpretation by comparing inferred allele frequencies for the 3 clusters with the allele frequencies found for the same gene polymorphisms by the Human Genome Project in European, African and Asian populations. Each individual in the cohort was a ‘genetic mosaic’, with contributions from each of the clusters, but in widely different proportions. The maximal contribution from a single cluster observed in this sample is ~85% for African, ~85% for European and ~70% for Amerindian ancestries. The range of possible genetic combinations in the Puerto Rican populations is considerable, and certain to exceed that in populations without admixture.

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In highly heterogeneous populations, existing “one-size-fits-all” medications and prescription recommendations are likely to be ineffective, or worse, cause harm through side effects. With history and ancestry spanning African, Amerindian, and European origins, the typical Puerto Rican person defies conventional ethno-geographic definitions. Clinical research should be undertaken in diseases demonstrating higher prevalence in the Hispanic population to improve the existing treatments and re-adjust dosing regimens in targeted recipients from such a highly heterogeneous population. Heterogeneity in how people respond to medications has confounded the prescription of modern medicines, with detrimental consequences for the safety, efficacy and patient compliance of potent drugs. A major advance

in healthcare would be a transition from the current empirical approaches and trial employed in drug therapy to a genetically predictive framework for determining the individual patient’s response to medicines.

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What are the barriers to getting these technologies used by healthcare system? How could we overcome these barriers? The first step in developing the genetic rules for personalized medicine is clinical research to “train the algorithms” supporting medical decision making. For example, a range of responses to a drug (efficacy, side effects, therapeutic ratios) in a target populations can be modeled by additive effects of DNA polymorphisms when a drug is given and the recipients have agreed to have their DNA and clinical response analyzed. This research can be fundamentally observational, and not pose any risk to subjects beyond that of standard medical therapy.

Genome diversity provides an opportunity to leapfrog health standards in heterogeneous Hispanic populations to areas of medical need with potential disparities of care including diabetes, heart disease, mental health, and cancer. Genomic heterogeneity also poses a great resource for translational clinical science in Latin America and innovation in healthcare. The paradigm of drug development in homogeneous populations for questionable extrapolation to real world heterogeneous populations can thus be supplanted with one of intentional diversity for broader global applicability. The determination of individualized treatment most suitable to each patient, using the personal genome for clinical decision support, and the implementation of drug prescription safeguards, are integral to personalized health. Such DNA-guided personalization provides a new venue to assure advances in medical technology improve the health of the Hispanic population.

¹Ruaño G, Duconge J, Windemuth A, Cadilla CL, Kocherla M, Villagra D, Renta J, Holford T, Santiago-Borrero PJ. Physiogenomic analysis of the Puerto Rican population. *Pharmacogenomics*. 2009;10(4):565-77.

Quality of Data Reported on Race and Ethnicity in Federally Funded Programs and Relevance to Policy and Decision-Making

by Nishang Gupta, CEHDL correspondent



Dr. Minakshi Tikoo,
University of Connecticut
Health Center

On April 3, 2009, University of Connecticut Health Center Assistant Professor Minakshi Tikoo gave a presentation for the CEHDL seminar series about the quality of data reported on race and ethnicity. “We need to de-mystify data and build a culture to use data for decision making,” Tikoo began. When racial and ethnic data is more comprehensive, especially when researching health disparities, the implications for policy and decision making are better.

The federally funded Substance Abuse Prevention and Treatment program, for example, was rated as ineffective in 2003 because it couldn’t demonstrate results. “Systems that create a culture of data for decision making haven’t been put in place in most states yet,” Tikoo reported. “We need to go from a mindset of accounting to one of accountability, from institutionalization to community integration.” Allocating funds to solve a problem isn’t enough, the solution’s effect must be analyzed as well. Tikoo stated that funding should be centered on patients, not on the providers.

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“A culture that uses data is more accountable and transparent,” Tikoo said. An increased quality and comprehensiveness of data allows for more specific trends and patterns to be observed. These specific trends and patterns allow for specific solutions to current problems, especially in reconciling health disparities. “A more specific solution will be more efficient and effective. With this increased efficiency comes increased value. In the end, demand for the services of such an institution will increase as they provide efficient and valuable services,” Tikoo reasoned. “Increased demand for state health

services asks for an equal increase in their capacity.” It is important to note that while increasing capacity costs a significant amount of money, it also saves a significant amount because the value of the services is higher in such a culture. After all, the goal isn’t to save on the total cost of health services, but it is to increase the efficiency of these health services to increase their capacity.

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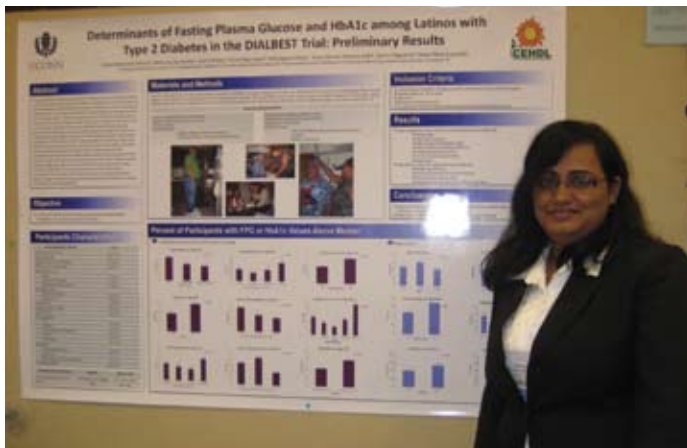
“When delivering health services, there are three items of importance: screening, assessment, and treatment planning,” Tikoo mentioned. She recommended that service should be redesigned to provide care based on healing relationships and to provide care that is customized to the patient’s individual needs and values. “As long as knowledge is shared and information can flow freely to the patient, the patient is the source of control. Trust and collaborative relationships between the patient and provider are necessary, as people need to trust the provider to share information with them.”

The transparency and objective nature of data-based evidence can anticipate the needs of changing demographics, decrease waste, and increase cooperation between clinics and providers. “The increase in the number of Hispanics served over this time period is disproportionately lower than the increase in the total number of patients served. The gender distribution of Hispanics has also changed from 50 percent male patients in 2000 to 60 percent male patients in 2008.” These changing demographics and trends can be observed to anticipate the needs of patients and increase future efficiency. Decisions that meet the needs of the population can only be made when comprehensive demographic information is available for analysis.

Presentations at Experimental Biology 2009 in New Orleans involving CEHDL Researchers

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Thanks to everyone
who enthusiastically participated in the
CEHDL 4th Annual Conference

on

**Social Determinants
of Health.**

It was a big success!

You can access conference materials and
presentation slides at www.cehdl.uconn.edu. Our upcoming *La Noticia de Salud*
issue will include a full report on the
conference and the community forum
that preceded it.

Stay tuned...



CEHDL's mission is to contribute to the
elimination of health disparities among
Latino(a)s through the formation of
human resources, community-based
research, and culturally appropriate
outreach/extension.



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