SALT
PROCESSED TO KILL

INSIDE:
LOU’S CALLING MADAM SAVES BIRMINGHAM
WICKED PROBLEM
BIG IDEAS FROM UNDER THE DOOR
CROWDFUNDING GUN RESEARCH

THE HANDLE
PUBLIC HEALTH
Spring/Summer 2014
The Magazine of the UAB School of Public Health
T
his issue of UAB Public Health inaugurates the school’s capital campaign. For the next five years, our goal is to raise funds to support the creativity and innovation of the faculty and to attract the most engaged students to our academic programs.

The newly launched undergraduate degree in public health has proven even more popular than anticipated, appealing to many of UAB’s pre-health profession students. These students bring a new vitality and enthusiasm to the school, pushing us all to be better teachers and engage an entirely different generation of thinkers. As the capital campaign moves forward, I anticipate strong interest in supporting these future public health scholars and professionals through new scholarships.

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Salt contributes to the death of more people than cigarettes. But it’s not the saltshaker on the table that’s to blame for lethal levels.

By Jane Ehrhardt

Shaking Things Up

Salt kills. This seasoning is perhaps the deadliest ingredient in the food supply, according to the Center for Science in the Public Interest. While a small amount remains essential for health, the excessive volume consumed in the typical American diet catapults it to the ranks of being a major cause of deadly hypertension and heart disease.

“I don’t want to be an alarmist,” says George Howard, DrPH, professor of biostatistics at the UAB School of Public Health, “but we’re talking about outcomes that are huge.”

More, more, more

The recommended sodium intake for adults sits at 2,300 mg per day as deemed by the USDA’s Dietary Guidelines. For about 40 percent of America’s population, though, that recommended daily allowance drops to 1,500 mg. These include people over 50 years old, those who are black, or those with diabetes, kidney disease, or hypertension. The American Heart Association says no one should consume more than 1,500 mg.

About 90 percent of Americans ingest more sodium than the recommended amount. For more: Men eat about 3,876 mg of sodium per day and women about 2,773 mg.

Salt is the main source of sodium in food, and about one-third of salt is sodium (a gram of salt contains 387.6 mg of sodium). That means men consume about 10 grams of salt each day, and women about 7 grams. The American Heart Association suggests salt levels need to drop below 4 grams.

A few grains makes a mound of difference

According to the Bibbins-Domingo article published in The New England Journal of Medicine in 2010, dropping three grams of salt from the daily diet—about half a teaspoon—would annually diminish the number of strokes by up to 66,000, the number of heart attacks by up to 99,000, and new cases of coronary heart disease by up to 128,000.

Deaths by any cause would decrease by up to 92,000.

To put that in perspective, “If we could wave a magic wand and get half of U.S. smokers to quit, we’d save an equal amount of lives to cutting a half teaspoon of salt from our diets each day,” Howard says. “We think of smoking as the ultimate threat and the most preventable cause of death. But salt is in the same neighborhood.”

Even dropping sodium intake by one gram would save 17,000 lives. “I grew up in a town of 8,000. The effects would be saving two of my hometowns every year,” Howard says.

He points out that though tobacco cigarettes are far more toxic than salt, smoking affects only 25 percent of the population. However, everyone consumes sodium. “You’re affecting eight times as many people if you change salt intake. It would have a more modest effect, but it would affect everybody. That’s the cool thing here,” Howard says.

A drop in pressure

Geoffrey Rose, the eminent epidemiologist from the last century, contended that a large number of people at a small risk may create more cases of disease than a small number who are at high risk. “In other words, we can concentrate on treating the subset of people who have hypertension to treat the whole population and prevent more disease,” Howard says.

Prominent in the food supply, according to the Center for Science in the Public Interest. While a small amount remains essential for health, the excessive volume consumed in the typical American diet catapults it to the ranks of being a major cause of deadly hypertension and heart disease. “I don’t want to be an alarmist,” says George Howard, DrPH, professor of biostatistics at the UAB School of Public Health, “but we’re talking about outcomes that are huge.”

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by 4 mm is a big deal,” Howard says. “But we’re talking about an average change for the whole population.”

No one can argue that lowered blood pressure means fewer deaths by strokes, Howard contends. “So why aren’t we doing something about salt?”

IT’S BEEN HIDING

Leaving the saltshaker in the cupboard won’t notably change dietary salt levels. “Only five to six percent of our sodium intake comes from table salt,” Howard recites. “The way to make the difference is to change the way food is processed.”

A whipping 70 to 80 percent of salt in American diets hides in preprocessed foods. “People don’t get salt from where they think,” Howard says.

F orty-four percent of the sodium consumed in the U.S. comes from just 10 food categories, according to a report in the February 10, 2012 issue of Morbidity and Mortality Weekly Report. Bread and rolls top the list, followed by cold cut/cured meats, pizza, poultry, soups, sandwiches, cheese, pasta-mixed dishes, meat-mixed dishes, and savory snacks.

“This was a surprise,” Howard says. “We’re getting almost as much sodium from breads and rolls alone than we get from the salt we add at the table. I’d have thought foods like potato chips would be the prime source, but they’re not.”

About two-thirds of sodium intake (70 percent) comes from store-bought foods. However, 59 percent of salt from pizza and 27 percent from poultry comes from fast food or pizza restaurants.

GOOD INTENTIONS

The head of nutrition at Kellogg’s, Alyson Greenhalgh-Ball, responded in 2010 to growing annoyance in Britain about high salt content in the company’s cereals. “For the past 12 years, we’ve been listening to our shoppers and taken down the amount of salt in our food [in Great Britain]. We’ve been doing this slowly, so we take people’s palates with us and so they don’t notice any difference in taste. Since 1998, we’ve taken over 45 percent of salt out of our cereals.”

Britain’s Food Standards Agency (FSA) ran a vigorous salt-reduction program from 2003 to 2010. The seven-year campaign reduced the adult average salt intake from 9.5 grams/day in 2000–2001 to 8.6 grams/day in 2008. Salt levels in processed food also showed substantial reductions of up to 70 percent in some foods.

Britain had been shooting for 6 grams per day. “Seven years and only one gram difference,” Howard says. “The companies are good people trying to do good things, but forces, such as competition, make it very difficult for individual companies to make changes. Voluntary change just won’t work. Our own CDC has been harping on this for a decade.”

Companies, big and small, have been lowering salt content even in their most popular and competitive brands, according to the Center for Science in the Public Interest. As of February 2012, General Mills had reduced sodium content in Cheerios and Honey Nut Cheerios by 16 percent and in some Progresso soups by 25 percent. Over seven years, they had dropped salt levels by at least 10 percent in 195 products.

Kraft had reduced salt in more than 1,000 items in 24 product categories by 2012 as part of a three-year initiative to reduce sodium. Walmart reported that as of January 2013, they had reduced sodium across target categories by 9 percent since 2008.

Despite good intentions and noted changes, however, U.S. companies are falling overall in sodium reduction, according to a new investigation in the JAMA Internal Medicine. They found the average sodium content declined by just 3.5 percent in 492 packaged foods tracked between 2005 and 2011 by the Center for Science in the Public Interest. Chain restaurants actually increased sodium slightly by an average of 2.6 percent in the 78 items tracked.

“We’re living in a sea of salt. Avoiding it is nearly impossible,” Howard says. “The only way is to change the sea we’re living in.”

WE NEED THE MAN

Blaming the public’s taste preference for a lack of sweeping salt reductions in processed food does not necessarily ring true. Different brands of the same product can show a large variance in sodium. According to the Center for Sciences in the Public Interest, one brand of tomato paste had more than five times the sodium of the brand with the least. In fast food, McDonald’s Quarter Pounder with Cheese had 34 percent more sodium, ounce per ounce, than Burger King’s similar Original Whopper with Cheese.

“It’s naïve to think that these companies will get together with their fierce competitors to make this change,” Howard says emphatically. “So the only way we can do this is if everybody holds hands and jumps off the bridge at the same time.”

That could save 194,080 to 392,000 quality-adjusted life-years and $10 to $24 billion in healthcare costs annually with a three-gram drop in salt per day, according to the study by Ribbens-Domingo. “The government’s hungry for healthcare savings. This one would affect the entire nation,” Howard says.

The study estimated that only a modest reduction of one gram per day over nine years would be more cost-effective than using blood-pressure medications for everyone with hypertension.

“The government needs to step in and set a goal of lowering sodium in foods,” Howard says. “If we did it together, there’s no competitive advantage to anybody. That’s the solution.”

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Source: What We Eat in America

What We Eat in America

SOURCES OF SALT

1. Breads & rolls
2. Cold cuts/cured meats
3. Pizza
4. Poultry
5. Soups
6. Sandwiches
7. Cheese
8. Pasta-mixed dishes
9. Meat-mixed dishes
10. Savory snacks


TABLES

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PHYSICIANS IN THE NEW TOWN OF BIRMINGHAM, Alabama, suspected the air itself as the culprit for the ravaging illness. Smoky black tar from burning pots billowed on deserted street corners that summer of 1873. It was a futile attempt to ward off whatever was transforming healthy men, women, and children into wretched human beings, wracked with diarrhea, vomiting, cramps, dehydration, and, often, death.

Cholera, the acute bacterial infection that took so many lives, passed murderously through much of the city’s population that season due to improper handling of sewage that contaminated an already limited water supply. “No disinfectants were used; the excreta were thrown upon the ground; the epidemic was inaugurated; and deaths occurred in every household,” states the Cholera Epidemic of 1873 in the United States. “No condition in life, sex, or age escaped. The sucking babe and those of extreme age suffered alike from its ravages.”

Before the source of the siege was properly diagnosed and steps taken to eliminate its cause, 128 people would die in a matter of weeks. Small wonder, then, that the able-bodied fled Birmingham, cutting in half the fledgling city’s previously robust population, whose growth had earned it the nickname “Magic City.”

“We looked and did not even see a cat or a dog—everything quiet and not a soul stirring,” one witness wrote about the suffering, dwindling town.

Some brave souls stayed, though, and from a surprising sector of the population. Authors of the time wrote of these people’s deeds as “the heroic and self-sacrificing conduct, during this epidemic, of that unfortunate class who are known as ‘women of the town.’ These poor creatures, though outcasts from society, anathematized by the church, despised by women and maltreated by men, when the pestilence swept over the city, came forth from their homes to nurse the sick and close the eyes of the dead.”

Louise “Lou” Catherine Wooster (1842-1913) was among these “women of the town”—a prostitute. She was a “working girl” when the cholera epidemic hit, but her innate strength and ambition would lead her to own a well-known brothel in the city nearly a decade later.
Michael praises Lou for staying through a frightening and deadly time in the city’s history. “There are some historians who criticize her remaining in Birmingham,” he says. “It makes a great story.”

Every year, the UAB Lou Wooster School of Public Health Hero Award recognition rekindles Lou’s selfless story. The dean cheerfully admits the selection process is “informal and totally biased” and based on “what fits with the times, what’s contemporary, and what people are talking about. We come up with an idea and, if it fits, we go with it.”

For example, after the April 27, 2011, Alabama tornadoes, somebody nominated the Greensboro, NC-based VF Corporation that owned the destroyed Alabama Wrangler Distribution Center plant in Hackleburg. “The company made the decision to rebuild the plant,” he says. “We all thought that was a remarkable decision on the part of an international corporation that had an immeasurable impact on the health, well-being and survival of the community.”

The 2014 recipient as Cooking Light magazine, an American food and lifestyle publication covering food trends, fitness tips, and other culinary health-related news. The editors are being honored because of “their effort to bring healthy menus and healthy cooking styles to traditional diets and helping people choose healthier ways to cook,” Michael says. “Given that we’re in the midst of obesity and diabetes epidemics, it is a nice way of saying, ‘Thanks for doing this.’”

Plans for this year’s event will most likely continue to include a tradition as flamboyant as the award’s namesake. “When Lou Wooster died, there were many people who wanted to pay their respects but couldn’t be seen paying their respects,” Michael says. “The story goes that there was a long line of empty, horse-drawn black carriages driven past the funeral home to pay their respects by the folks who couldn’t be seen.” The story of the empty carriages is most likely the stuff of legend, not history, but it’s a myth too colorful to resist. “So,” the dean says, “we have a horse and buggy pick up the award recipient in front of the school on University Boulevard and take them through town to Oak Hill Cemetery where Lou is buried.” The award is presented there. Also listenin the ceremony in recent years has been Public Health student Chenoia Johnson. When asked what went out in a pink period dress with arm-length gloves and a plume-feathered hat, the student stand-in for Lou delivers a drawing summary of highlights from Lou’s life. “Being that I never backed down from a challenge,” the impersonator says of Lou’s decision to remain in the city during the epidemic, “I stayed right here. I helped to feed the hungry, nursed the sick back to health and even helped to bury the dead. So I guess you could say, after it was all said and done, I was no longer beyond redemption. Society wiped my slate clean. My legacy lives on through institutions and corporations—public health heroes through my legacy through courage, commitment, and service.”

Historian Baggett nicely sums up the madam’s incredible story. “All the details of Lou Wooster’s life will never be known. She traveled too much and spun too many fantastic tales. But this has not mattered much. With her heroism during the cholera epidemic—and what she did for the city—Lou Wooster...assured her place in Birmingham’s memory. In death, Lou Wooster has found the respectability that eluded her in life.”
Is vaping a burgeoning public health risk or the Holy Grail for smokers seeking safe alternatives? By Jane Ehrhardt

N ews days ago, Sean Camp and his partners opened a store in Dallas devoted to electronic cigarettes. Already, they have 20 to 30 customers a day spending north of $100. “We offer 170 flavors now, and we’ll have 300 when all is said and done,” Camp says proudly. Their store, Create A Cig Dallas, represents one of 18 franchises opened by the company in the past two years.

Electronic cigarettes have hit big times. According to a Citibank report, the industry is expected to grow at a 50 percent compound annual rate over the next few years, reaching billions in revenue. Should public health professionals go on high alert about e-cigarettes or applaud them? We asked two professors for the lowdown.

PRO: They help smokers quit.

Electronic cigarettes are too new to herald much research. But a 2013 Australian study reported some benefit from e-cigarettes as a cessation tool. “Vaping showed about the same success rate as the nicotine patch,” says Meredith Kilgore, PhD, a UAB health economist and former decades-long smoker. He still keeps e-cigarettes in his drawer, though he never needed them when he quit cold turkey years ago.

CON: They help smokers keep smoking.

Though more than 700,000 smokers reportedly use electronic cigarettes, “what we don’t know is how many have quit smoking and how many have switched to dual use,” says Donna Arnett, PhD, chair of epidemiology and past president of the American Heart Association. Smokers adopt e-eggs not to quit tobacco cigarettes but to replace them in bars and restaurants where smoking has been banned. “They’re like the comb-over for tobacco users,” she says. “Vaping allows smokers to feed their nicotine habit more often.”

PRO: People enjoy smoking. This is a healthier alternative.

“That’s nice for current smokers, says Arnett, but e-cigarettes could serve as a gateway to toxic tobacco smoking for people who’ve never smoked. ‘This is so early, and there’s no studies out yet, but if you’re addicted to nicotine from vaping and all the behaviors associated with using cigarettes, it will make it easier to transition to tobacco,’” she says. For instance, if someone’s e-cigarette tank runs out, a friend could offer them a traditional cigarette. “From what I’ve read, the nicotine from an e-cigarette doesn’t have the same constriction level and takes longer to absorb,” Arnett says. “So once they take their first hit from a combustible cigarette, think how easy it is to transfer over to that source.”

E-eggs, though, are evolving rapidly to up the nicotine hit. Some devise adjust the voltage to ramp up the heat in the coil and intensify the blast of nicotine and flavor. Newer models adjust the wattage instead, so the hit intensifies without burning out the coil.

PRO: They’re cheap.

“They’d have to be able to afford combustibles to make the switch, though,” Kilgore says. E-cigarettes currently face no regulations, no involvement from the FDA, and no onerous taxation. “They’re ridiculously cheaper, so cost could draw smokers off combustibles and keep e-cigarette users away from the tobacco option.”

One pack of Marlboro Red cigarettes, including tax, ran $4.96 in Kentucky and $14.50 in New York as of last July. In comparison, a 10 milliliter tank of e-juice, which equals about eight packs, runs $6.49 from Create A Cig Dallas. The big cost for vaping strikes upfront with the device costing about $40 for the basic model and $90 for the twist kits (adjustable volts).

CON: They’re not regulated.

Prices will rise if the FDA gets involved in e-cigarettes. “But with regulations you have some assurance of safety,” Arnett says. “Right now, e-cig manufacturers have been found in some lower-cost, e-cigarette preparations. That lack of government oversight is a potential health issue.”

PRO: There’s virtually no risk of cancer.

Kilgore points out that even with FDA involvement, combustibles cause cancer. “We’ve seen the use only come in widespread toxic contaminants in e-cigarettes,” though no large-scale report has been done. “They do know that carcinogens in combustible cigarettes come from tar and other chemicals not found in e-eggs, which are pretty much just nicotine and water vapor,” Kilgore says. “So there’s significantly less health effects in vaping.”

CON: They’re not harmless.

“We don’t know if nicotine is cancer causing in and of itself,” Arnett says. Studies have not looked at pure nicotine, only the use of nicotine as part of tobacco products. “Without regulation, we won’t know the long-term health effects of the vapor.”

Yet advertising touts the safety of vaping. “Famous, sexy celebrities are saying it’s just a vapor. But we know nicotine is addictive, and we know using e-cigarettes instills learned behaviors that are associated with tobacco smoking that are difficult to extinguish,” Arnett says.

PRO: Nicotine’s already out there.

“Given that we have a bunch of FDA-approved nicotine-delivery systems on the market with some advocacy in stopping smoking,” Kilgore replies, “then another tobacco-free option for delivering nicotine makes sense from the standpoint of making the market more competitive.”

CON: We’re jeopardizing upcoming generations.

Arnett agrees that adult smokers should have every resource for lowering their consumption of combustible tobacco. However, e-eggs use dualism in high schoolers between 2011 and 2012, and 1.78 million middle schoolers say they’ve tried vaping. “With e-eggs,” she says, “we could just be addicting a whole new generation to nicotine.”

E-Cigarettes

Flavors and Colors

Flavor and nicotine compose the bulk of the vapor inhaled by e-cigarette users. A metal tube contains a battery-powered coil wrapped around a piece of material, like cotton, soaked in a nicotine-based, flavored liquid. When the user takes a drag, a pressure-activated switch fires on the coil that vaporizes the liquid, creating the same smoking experience as a traditional combustible cigarette, but without any tobacco or supposedly any nasty, carcinogenic add-ins.

E-eggs can resemble regular cigarettes, look bubbier, come in many colors, look like pipes or even be in customized shapes. Not all liquids, or e-juices, contain nicotine. “When people come in and want an e-cig to taste like Brand X, we can do that,” Camp says. “But after a week, their taste and smell come back and those flavors taste like crap. So they come back in wanting menthol and fruit flavors. Watermelon sells really good.”
“Have you considered crowdfunding?” the Microryza representative asked the UAB School of Public Health health economist. “Isn’t that for music?” the puzzled researcher responded.

Bisakha “Pia” Sen, PhD, laughs as she recalls that conversation. That’s when she learned Microryza, now known as Experiment.com, is a crowdfunding website that focuses on generating scientific research monies. “I had never heard of it,” she admits. But she was game to try. Her research interests in gun policy could not move forward due to lack of funding. In an article published in Preventive Medicine (Volume 55, Issue 4, October 2012), she and doctoral student Anantachai Panjamapirom had shared results from a study titled, “State background checks for gun purchase and firearm deaths: An exploratory study.” There was no money, however, to do follow-up research. “Congress had managed to ban any kind of government funding for research in this particular area,” she explains. (Note: President Obama revoked the federal funding ban on gun-violence research in January 2014.)

“Targe...”

Taking Dollars
Sen figured she had nothing to lose by trying the crowdfunding site. She set a goal of $22,000 to fund her research titled, “Gun Policy, Gun Culture & Guns Across the U.S.: What Makes Us Safer?” The project was to look at a state’s gun policies, including background checks, gun show purchases, concealed carry laws, and “stand your ground” laws, as well as gun culture, such as the percentage of licensed hunters and gun-owning households. The plan was to look at firearm deaths, crimes, and gun access among youth. For the record, Sen describes herself as an “agnostic” on the gun violence issue. “If I knew the answers, I wouldn’t be bothering to do the research,” she explains. “I’m not on a crusade to prove a policy works or prove it doesn’t.”

She soon discovered a major difference between working with crowdfunding and creating a grant proposal. “With a grant, you try to write the best possible proposal you can with as much detail,” she explains. With crowdfunding, “the real work is figuring out how to get the crowd to your page.” At first, she mistakenly believed Experiment.com “had this huge, well-oiled publicity machine,” she says. “Some of their previous fundraisers had been young post-docs, spending 24/7 promoting their own projects,” she says. “I’m not that guy.” Indeed, Sen was an associate professor at the time with six other projects to tend. (She’s now a tenured full professor.) So the site extended her project’s time to promote and raise the funds.

Lining Up
“My big break was when the New York Times picked up on it,” she says. “A media piece would break and then for the next 48 hours, you would see the donations spike, spike, spike. Then after 48 hours, it would kind of die away.”

Crowdfunding usually operates as an all-or-nothing model, meaning all projects either reach or surpass the funding goal within the time allotted or no money is given. Sen’s project reached its goal and was funded $22,305 from donations given by 273 backers at an average of $81.11. “About 20 percent came from people I know,” she says. “Then there were backers from France, Australia…it’s crazy!”

Would she try this method of fundraising again? “At the end of the day, I probably put in about as much time as one would writing a proposal for one of the solid big NIH grants,” she says. “There’s just so much effort you can put into getting pilot grant money. I might do it again if it were a topic that seems to have the appeal to the public. It could potentially be a supplement. But it’s certainly not going to be a substitute for the conventional sources of research funding.”

RESEARCHER BISAKHA SEN AIDS AT CROWDFUNDING FOR GUN VIOLENCE STUDY

“If I knew the answers, I wouldn’t be bothering to do the research. I’m not on a crusade to prove a policy works or prove it doesn’t.”

— Bisakha “Pia” Sen, PhD, School of Public Health
T his year’s Wicked Problem returns to being a hypothetical situation based on a real nationwide public health epidemic—sexual assault on college campuses. “The idea for this as a Wicked Problem originally came from watching Sheriff Mike Hales on Friday night TV taking down predators,” Dean Michael says.

The statistics are daunting. A 2007 study by the National Institute of Justice (NIJ) found that 18 percent of women had experienced an attempted and/or completed sexual assault since entering college. Other studies quote as high as 25 percent.

It’s a huge problem,” says Lee, who has volunteered at Birmingham’s Rape Crisis Center. “Most assaults go unreported.” A 2000 NIJ study found that less than 5 percent of completed or attempted rapes against college women were reported to law enforcement. Two thirds of the victims usually told a friend, but not family or school officials.

Lee says sexual assault on campuses presents an ideal Wicked Problem. “This one isn’t just situational,” she explains. “It goes into behavior aspects, like alcohol and drugs, along with societal perceptions and environmental issues, like the campus grounds themselves.”

Choosing this as the Wicked Problem means tapping the mindset of a population segment not often engaged in solving it. “If you’re staying home this weekend, it’s that we’re going to get a whole bunch of guys coming up with solutions on sexual assault from their perspective,” Lee says.

The School estimates about 70 students will sign up for this year’s Wicked Problem contest. “We think we’ll leave this wide open on where they decide to take their solutions,” the dean says. “We could see teams attacking this through campus policy, awareness campaigns, changes to buildings or campus layout, or even how assaults are reported.”

Lee hopes having students solve a student public-health problem will reveal new and radical answers. “This is a really messy, real-life problem that’s been around a long time. It will be interesting to see if we get solutions that come at it from completely different ways.”

REWARDS

The winning team, titled Think Tank, presented a host of practical solutions that could be feasibly implemented. “They had the idea to sell the ash piles. They found out it was used in making concrete. Then they suggested putting those funds into community-based programs,” Lee says. “They came up with a way to capture what was being burnt off with the big flame and sell that too. Their presentation was all about how to do positive things with the noxious byproducts.”

Think Tank walked away with the $1,500 first-place cash prize. Second place received $1,000, and third won $500. The real-life scenario and the intimate interaction with the residents led to another unexpected outcome. “The third place team donated their prize money to the neighborhood,” Lee says.

2013 WINNING TEAMS

1st PLACE, Think Tank
Himal Bhagat
College of Arts and Sciences
Vivek Patel
College of Arts and Sciences
Nashat Patel
College of Arts and Sciences
Ryan Jay
College of Arts and Sciences
Pooja Gajar
College of Arts and Sciences
Dhruvi Zaveri
School of Business

2nd PLACE, Healthy Choice
Feda Kotboslous
SCHOOL OF HEALTH PROFESSIONS
Aaron Elias
School of Health Professions
Canzha Myers
School of Health Professions
Carroll Papajohn
School of Health Professions
Kate Jarrett
School of Health Professions

3rd PLACE, i2 (Imagine. Invent. Implement.)
Anjum Khinania
College of Arts and Sciences
Winnie Tsai
College of Arts and Sciences
Tushar Ramesh
School of Engineering
Saravak Parmeram
College of Arts and Sciences
Paul Lee
College of Arts and Sciences

BY JANE EHRRADT

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Could HDL Size Indicate HEART RISK?

High-density lipoprotein (HDL)—the “good cholesterol”—removes fats and cholesterol from cells and transports them back to the liver for excretion or re-utilization. Recent studies suggest that higher levels of HDL may help protect against cardiovascular disease (CVD). However, our ability to prevent, predict, and treat CVD within the United States may be limited if we do not understand the full impact of ethnic differences on CVD risk factors.

Her analysis will be conducted on Caucasians, African, Chinese, and Hispanic-Americans, using data from the Multi-Ethnic Study of Atherosclerosis (MESA), a medical research study involving approximately 6,000 men and women across the United States.

To address the association of lipoprotein diameters with metabolic syndrome and cardiovascular disease, regression models will examine the association of fasting very-low-density-lipoproteins, low-density-lipoproteins, and HDL lipoprotein diameters with metabolic syndrome measures and cardiovascular disease, and include interaction terms with race.

This information will enable her to construct a clinical prediction model using receiver operator characteristic curves and Hoosier Lemoshow goodness-of-fit to examine whether the best prediction model should differ by race and gender, and whether including lipoprotein diameters improves longitudinal prediction over models with only demographic and obesity information.

Genetic associations will be addressed by taking a candidate variant approach and using only variants previously validated as being associated with lipoprotein parameters in Caucasians as outcomes in mixed linear models controlling for age, gender, and principle components on ancestry. Evidence for genetic heterogeneity between the ethnicities will be assessed by using MANTRA.

“This research will enhance our understanding of how lipoprotein diameters and HDL cholesterol may help with risk stratification for cardiovascular disease, by elucidating the predictive relationships between lipoprotein diameters and metabolic syndrome, and the extent of ethnicity-specific elements in this relationship,” Frazier-Wood says.

As part of the project, Annang and others used PhotoVoice, a method that uses photography in conjunction with focus groups and one-on-one interviews to document how the disaster affected their quality of life, health, and access to healthcare services.

Ultimately, the overall outcome gave community members the opportunity to use their voices and be heard.
early a third of all American adults have hypertension, putting them at greater risk of death and disability from a stroke. And there is no place in the country where strokes are more prevalent than in the eight-state region of the Southeast—including Alabama—recognized as the Stroke Belt. Why this disparity exists is still a mystery despite numerous studies.

Matthew Loop, a UAB PhD student in biostatistics, wondered if the vascular health problems facing communities in the Stroke Belt could be better understood if the research were more localized and visual. Loop received the American Heart Association 2014 Predoctoral Fellowship award to pursue this theory. He is using standardized, in-person data collection and geocoded addresses from the REasons for Geographic Environmental Study (REGARDS) project, an observational study of risk factors for strokes in adults 45 years or older. REGARDS is funded by the National Institute of Neurological Disorders and Stroke. Previous studies have been limited to self-reported data and/or resolution to only the county level. Loop proposed mapping the geographic distribution of the prevalence of high blood pressure in U.S. adults by increasing the resolution of current maps and creating a kind of “Doppler radar” for hypertension prevalence within communities. Maps of hypertension prevalence would also be created for different combinations of race and sex.

“Looking at high-resolution maps for different demographic factors could help us understand whether there is a small-scale geographic variation in hypertension prevalence and whether that variation differs for various subgroups,” he explains.

The secondary goal of Loop’s research is to improve methods for testing for disease clustering. “Not many project has used tests for disease clustering with such large datasets, and we anticipate that these methods will need modification in order to answer our main question: Is there geographic variation in hypertension prevalence in the U.S.?” Loop says. These methods will be crafted by combining theoretical statistics and computer simulations. Stroke is the fourth leading cause of death in the United States, killing more than 140,000 people each year, according to the U.S. Centers for Disease Control and Prevention, which is why stroke prevention has become such a public health concern.

“Having better understanding of the geographic variation in hypertension,” he adds, “might help explain our increased burden of stroke mortality here in the South.”
The premise: Can we use childbirth as a catalyst for healthy changes for first-time moms who struggle with their weight, pre-pregnancy? Subjects to receive nutritional counseling and tips for grocery shopping and make-ahead frozen meals.

The premise: HIV-related stigma affects people living with HIV and those avoiding testing. A stigma-reduction workshop will be pilot-tested.

The premise: Antibiotic use the first year of life is associated with increased risk of childhood autoimmune disease. Examine the association between antibiotics and juvenile arthritis.

The premise: Indiscriminate weight loss compromises general health and function. Adding muscle, however, burns fat.

The premise: Is heart failure hospitalization higher in the days following holidays in which patients typically eat large, rich meals?

The premise: What changes in health service usage and other data occurred among low-income children living in areas affected by the 2010 Gulf of Mexico oil spill?

The premise: A body composition assessment that’s portable and accurate is a challenge. Develop a computer image algorithm to analyze data from simple digital photographs and assess body fat. (Note: Patent pending.)

Public Health Chris/Summer 2014

Signed, Sealed, Delivered

By Nancy Dorman-Hickson

Everyone’s experienced it—that glimmering insight that pops into your mind while you’re stuck in traffic. Or standing in line. Or in bed, about to snooze. The concept tugs at you again and again—it really is a great notion—but you push it aside, sigh, and ruefully admit you lack the wherewithal to pursue it.

Enter the UAB School of Public Health’s Back of the Envelope awards.

The awards’ genesis came from faculty conversations, explains Dean Max Michael, MD. “By and large, they are spending so much time writing grants to maintain their salaries and working and publishing papers, that they don’t have time to pursue funding for ideas that have nagged them for years,” he explains.

Back of the Envelope rules are simple—spell out the idea on a #10 envelope and slip it under the dean’s door by close of deadline day. Entries “cannot have references or have a budget,” he says. “It just has to be an idea.” Judges at UAB as well as deans at other schools of public health, evaluate submissions for creativity and potential. Awards range from $10,000 to $25,000.

Recently, past contest recipients were surveyed. Were the projects successful? Were they able to use the results to land larger grants?

The results rocked. During the seven years of the contest’s existence, the school has awarded about $300,000. “Thus far,” the dean says, “that money has been turned into more than $4 million in federal grants, one patent, and about 40 peer-reviewed published articles and a bunch of poster presentations. Not bad.”

Examples of winning Back of the Envelope entries

• The premise: Can we use childbirth as a catalyst for healthy changes for first-time moms who struggle with their weight, pre-pregnancy? Subjects to receive nutritional counseling and tips for grocery shopping and make-ahead frozen meals.

• The premise: HIV-related stigma affects people living with HIV and those avoiding testing. A stigma-reduction workshop will be pilot-tested.

• The premise: Antibiotic use the first year of life is associated with increased risk of childhood autoimmune disease. Examine the association between antibiotics and juvenile arthritis.

• The premise: Indiscriminate weight loss compromises general health and function. Adding muscle, however, burns fat.

• The premise: Is heart failure hospitalization higher in the days following holidays in which patients typically eat large, rich meals?

• The premise: What changes in health service usage and other data occurred among low-income children living in areas affected by the 2010 Gulf of Mexico oil spill?

• The premise: A body composition assessment that’s portable and accurate is a challenge. Develop a computer image algorithm to analyze data from simple digital photographs and assess body fat. (Note: Patent pending.)

What would you give to make a difference in the world?

By establishing a scholarship honoring the beloved public health leader Herman E. Lehman, Jr., D.D.S., M.P.H., family, friends, and former students gave Bellamy Hawkins the resources to make a difference in her community.

Thanks to their support, Bellamy is pursuing her passions of studying global health and eliminating health disparities by preventing stroke and HPV cervical cancer. For Bellamy, each hour of service is a reflection of Dr. Lehman’s concern for public health and an opportunity to change someone’s life for the better.

When you support School of Public Health students through scholarships, giving something changes everything.

Contact Morna McCarty at (205)934-7799 or mmccarty@uab.edu to learn more.

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