Patients with ancient stomach bacteria less at risk for celiac disease

Individuals whose stomachs do not contain colonies of bacteria known as *Helicobacter pylori* are at greater risk of celiac disease than those who do have the bacteria, according to a new study lead authored by Dr. Benjamin Lebwohl, assistant professor of medicine and epidemiology, with co-author Dr. Andrew Rundle, associate professor of epidemiology, and other colleagues.

Celiac disease is an immune-based disorder in which the small intestine becomes damaged in reaction to the protein gluten, making it difficult to absorb nutrients. It can lead to uncomfortable and sometimes severe digestive problems, which is why patients with celiac disease are typically put on a diet free of foods with gluten, such as those made of wheat, barley, or rye.

Scientists are not yet sure why the disease has risen four-fold in the US over the last 50 years. One theory known as the “hygiene hypothesis” points to America’s fight against bacteria, which has taken place around the same period.

In this fight, efforts to kill disease-causing bacteria with antibiotics have also resulted in reducing exposure to beneficial bacteria. This may be the case for *H. pylori*, an ancient microbe that survives in the acidic lining of the stomach. Thirty years ago, scientists fingered *H. pylori* as the primary cause of gastritis and peptic ulcers, and as a result, many doctors started prescribing antibiotics to kill it. But more recently *H. pylori* has been associated with positive health traits, such as decreased risk of allergic diseases like asthma and better hormonal appetite regulation.

Drs. Lebwohl, Rundle, and their colleagues compared results for 136 thousand patients nationwide who had an upper gastrointestinal endoscopy, a procedure that allows doctors to look at the inner lining of the stomach. *H. pylori* prevalence in the stomach was significantly lower (4 percent) in patients with celiac disease than in those without (9 percent).

“These results offer a potential explanation for the unexplained rise in celiac disease in recent decades,” says Dr. Lebwohl. “As *H. pylori* colonization rates decline, perhaps we are witnessing a trade-off in the rise of autoimmune conditions.”

He and his colleagues recommend study of immune responses to gluten in order to understand the mechanism by which *H. pylori* may fend off celiac disease.

MESSAGE FROM THE CHAIR

Dear colleagues,

Welcome to the December 2013 issue of Two by Two, the Epidemiology Department newsletter. There is as always much to report as we approach the end of a very busy fall semester. Our third master’s student day was once again a huge success, and the winners of the abstract and poster competitions are celebrated in these pages.

In September, in conjunction with the annual United Nations General Assembly, we cosponsored with UNICEF Columbia University Epidemiology Scientific Symposium (CUESS), focused on Putting childhood disability on the map. Our second CUESS of the academic year, Philosophy and medicine: Explanation and prediction population health, was cosponsored with the International Philosophy of Medicine Roundtable, and brought together thought leaders from the realms of economics, political science, history, bioethics, and of course epidemiology to tackle some of the broadest philosophical questions that shape our scholarly lives.

We cover a range of research findings in this issue, including Dr. Benjamin Lebwohl’s striking news about the beneficial role of a previously vilified bacterium. MPH 2014 trainee Ms. Stephanie Lucas reports from her practicum in the Philippines on the aftermath of Typhoon Haiyan. Our Lines of Inquiry article is a fascinating exploration of the forces that shape immunization rates, comparing two very different US cities.

A final note: in keeping with our mission of extending the public health conversation, I invite you to join me on Twitter (@sandrogalea) as I share the best of the science that crosses my virtual desk each day.

Warm regards,

Sandro

UPCOMING JANUARY—MARCH

FRIDAY, JANUARY 17       FACULTY MEETING
WEDNESDAY, JANUARY 22     CUEGR: OLLI MIEITTINEN, MD, PhD
FRIDAY, JANUARY 24        DEPARTMENT SEMINAR: BENJAMIN LEBWOHL, MD, MS
FRIDAY, FEBRUARY 14       DEPARTMENT SEMINAR: KATHERINE KEYES, PhD
WEDNESDAY, FEBRUARY 19    CUEGR: JANET RICH-EDWARDS, ScD, MPH
FRIDAY, FEBRUARY 21       FACULTY MEETING
FRIDAY, MARCH 7           DEPARTMENT SEMINAR: PAM FACTOR-LITVAK, PhD
FRIDAY, MARCH 14          FACULTY MEETING
WEDNESDAY, MARCH 26       CUEGR: DANIEL W. KING, PhD AND LYNDIA A. KING, PhD

All CUEGRs will be held on Wednesdays from 4-5:30pm in the 8th floor auditorium.

All department seminars will be held on Fridays from 12-1:00pm in a to be determined location.

All faculty meetings will be held in the 5th Floor Conference Room, Room 532.

the 2x2 project

Be sure to also check out our online presence at the2x2project.org.

Follow us on Twitter twitter.com/cuepidemiology, and “like” us on Facebook facebook.com/cuepidemiology to keep up with the latest Department news and events.
Researchers are not publishing in a timely fashion the results of the clinical trials that could help decision-making concerning treatments, often breaching a federal law that makes it mandatory, according to a study conducted by Dr. Philippe Ravaud, senior lecturer in epidemiology at the Mailman School and professor of epidemiology at Paris’s Descartes University.

A 2007 amendment to the Food and Drug Administration Act requires that randomized clinical trial results of FDA-approved drugs with at least one site in the US are posted to a government website called ClinicalTrials.gov within one year after researchers have measured the “primary outcome” of the last patient.

Looking at nearly 650 randomized controlled trials assessing cancer drugs with at least one site in the US, Dr. Ravaud and his colleagues found that only 20 percent had reported results publicly on ClinicalTrials.gov or published in journals within that year. Three years later, nearly half were still not publicly available.

The amendment was passed after revelations that trial results of an estimated 25 to 50 percent of FDA-approved drugs had not been published five years after the drug had been green-lighted. Trials with negative results were published much less often than those with positive results, according to past research.

This “biases the literature,” say the study’s authors. “Under-reporting of trial results also contributes to the overall waste of research and breaches implied contracts with patients who agree to participate in these trials.”

Sugary beverages are harmful for young children

Two studies by faculty point to health risks for young children who regularly consume soda and other sugary beverages.

Soda-drinking children more likely to have behavioral problems

Children who drink soda are more likely to behave aggressively than those who do not, according to a new study led by Dr. Shakira Suglia, assistant professor of epidemiology.

The researchers assessed survey data on behavior of 3,000 5-year-old children reported by their mothers in the Fragile Families and Child Wellbeing Study. They found that any amount of soda consumption was associated with aggression, withdrawal, and attention problems, even after adjusting for sociodemographic factors, maternal depression, intimate partner violence, and paternal incarceration. Children who drank four or more soft drinks a day were more than two times as likely to destroy others' possessions, get into fights, physically attack people, and have attention problems than children who did not consume soft drinks.

“We found that the child’s aggressive behavior score increased with every increase in soft drinks servings per day,” says Dr. Suglia.

Read the news coverage:

- http://cbsn.ws/19dL3LO
- http://lat.ms/1aORawl
- http://ti.me/16VXpvg
- http://reut.rs/1cO3IWL

Read the related 2x2 project article, “Kicking the Can: Examining the link between soda consumption and violence in children” http://the2x2project.org/kicking-the-can

Sugary beverages linked to childhood obesity

Four and five-year-olds who drank one or more sugar-sweetened beverages a day were more likely to be obese than those not consuming the beverages, according to a new study by Dr. Ryan Demmer, assistant professor of epidemiology, and colleagues.

Analyzing body mass index (BMI) scores among 9,600 children, the researchers found that between the ages of 2-4, children who drank sugary beverages had greater increases in BMI scores than those who didn’t consume the drinks regularly after adjusting for several factors, including race, socioeconomic status, and mother’s BMI.

Earlier studies had found a link between sugar-sweetened beverage consumption and weight among older children, but this is one of the first to find a link among preschoolers.

Regular drinkers of sugar-sweetened beverages like soda, sports drinks, and fruit drinks that are not 100 percent juice also drank less milk and were more likely to watch more than two hours of television per day.

“Policies that reduce the consumption of these beverages in young children should be considered and scientifically tested as such steps may help mitigate a small but important contribution to the current epidemic of childhood obesity,” said Dr. Demmer.

Obesity-related deaths more common than previous research suggests

A significantly greater number of people die from obesity-related causes than previously thought, according to a new study. High body mass accounted for 18 percent of deaths among black and white Americans between 1986 and 2006, the study found. Previous research put that number at 5 percent.

“Past research in this area lumped together all Americans, but obesity prevalence and its effect on mortality differ substantially based on your race or ethnicity, how old you are, and when you were born,” says Dr. Ryan Masters, lead author of the study and a Robert Wood Johnson Health & Society Scholar.

Contrary to what previous research suggested, younger Americans who have lived their whole lives during the obesity epidemic, which began in the 1980s, are especially at risk.

“A 5-year-old growing up today is living in an environment where obesity is much more the norm than was the case for a five-year-old a generation or two ago. Drink sizes are bigger, clothes are bigger, and greater numbers of a child’s peers are obese,” says co-author Dr. Bruce Link, professor of epidemiology and sociomedical sciences. “And once someone is obese, it is very difficult to undo. So it stands to reason that we won’t see the worst of the epidemic until the current generation of children grows old.”

Read the news coverage:

- http://nbcnews.to/17tKWiv


Women on contraceptives less likely to be depressed

Women on hormone-based contraceptives including the birth control pill were less likely to suffer from depression than other women, according to a new study by lead author Dr. Katherine Keyes, assistant professor of epidemiology; senior author Dr. Karestan Koenen, associate professor of epidemiology; Dr. Carolyn Westhoff, professor of epidemiology; and colleagues.

“This counters somewhat some of the prevailing wisdom that hormone contraceptive use in general is associated with adverse mental health outcomes in women,” said Dr. Keyes.

Analyzing survey data on 6,654 sexually active women between ages 25 to 34 over a 14-year period, the researchers found these women were 32 percent less likely than other women to have strong depressive symptoms and 63 percent less likely to have attempted suicide in the past year.

An alternative explanation for these findings could be that women who are depressed would choose not to use contraceptives or go off of them, though the authors tried to control for many factors that are different between the two groups being compared, such as age, education level, and how regularly the women got medical checkups.

While women have reported feeling emotional and irritable on the pill, Dr. Keyes notes that mood swings are substantially different from depression and suicide attempts, though important to bring up with a doctor.

Read the news coverage:

- http://on.today.com/19WySYb
- http://bit.ly/1aOR6gs

Rising rates of injection drug use, HIV, and TB creating perfect storm in Central Asia

Rates of tuberculosis (TB) and multidrug-resistant tuberculosis (MDR TB) are “extremely” high in Central Asian countries, threatening a “potentially devastating co-epidemic” if treatment and prevention services are not integrated and offered to a wider swath of the population, say Dr. Neil Schluger, professor at NYU/CUMC of epidemiology; Dr. Sandro Galea; and Ms. Sabrina Hermosilla, a doctoral candidate in the department, in a paper for Drug and Alcohol Dependence.

In the last 20 years, a rise in HIV rates in low and middle-income countries and the emergence of a strain of TB that is resistant to the drugs most used to treat it have posed significant challenges to the global effort against what is an often lethal bacterial illness that typically infects the lungs.

In Kazakhstan, Uzbekistan, Tajikistan, and Kyrgyzstan, HIV rates are rising because of an epidemic of injection drug use. Meanwhile, needle exchange programs that have been shown to reduce HIV transmission rates and treatment for HIV are available to only a small number of patients in the region.

This has created a perfect storm, where untreated HIV-positive individuals are at greater risk of contracting TB because of their weakened immune systems. Treating patients with TB and HIV is a time-sensitive process that requires awareness and integration of health services.

“Failure to integrate and improve health services for these important problems will lead to the creation of a spiral of increasing rates of tuberculosis and HIV infection, among people who use drugs, as inadequate treatment of any one of them will cause more transmission of TB and HIV,” write the authors. “Effective programs have been created in a number of regions around the world, and these models should be adopted in Central Asia.”

Risk of breast cancer varies for women on HRT

A large study looking at women on hormone replacement therapy (HRT) found that the risk of breast cancer may depend on body type, race, and ethnicity. While slim and normal-weight women with dense breast tissue had a significantly greater risk on HRT, women who were black or overweight with less-dense breast tissue showed no increased risk. Women take replacement estrogen alone or with progestin during menopause to reduce symptoms such as hot flashes and night sweats, but a 2002 study found that HRT increased the risk of developing invasive breast cancer.

“A lot of data now, both observational as well as clinical trials, have supported that certain subgroups of women may not have an increased risk from hormone replacement therapy,” said Dr. Mary Beth Terry, professor of epidemiology, who wrote an editorial accompanying the study.

http://reut.rs/1c8LcHd

Shutdown Government hampered in response to salmonella outbreak

In the midst of October’s federal government shutdown, Dr. Stephen Morse, professor of epidemiology at CUMC, joined WNYC’s Leonard Lopate to talk about whether efforts to contain a salmonella outbreak from chicken produced by Foster Farms in California had been hampered.

“The shutdown certainly hasn’t helped, and it has reduced capabilities considerably. On the other hand, there is the possibility CDC for example can call people in for emergencies like this, so the government has responded,” he said. “Although probably it could have responded more strongly without the shutdown, I think the miracle is that it was able to do it.”

Dr. Morse also gave an interview to Discover Magazine about his efforts to expand the US Agency for International Development’s worldwide PREDICT project, which identifies emerging pandemic threats, to new countries.

http://wny.cc/1bAvfWx http://bit.ly/1dYL63f

Marijuana and other drugs increase driver's fatal crash risk

Use of marijuana and other drugs significantly increases a driver’s risk of being involved in a fatal crash, finds a case-control study published in Accident Analysis & Prevention by Dr. Guohua Li, Finster Professor of Epidemiology and Anesthesiology and director of the Center for Injury Epidemiology, with PhD candidate Ms. Joanne Brady that was covered in several media outlets. The study assessed fatal crash risks associated with different types of drugs detected in drivers, finding that drivers using depressants, such as prescription opioids, were nearly five times as likely as other drivers to be involved in such collisions. Stimulants, narcotics, and marijuana are also associated with significantly increased risks. Drivers who tested positive for both alcohol and drugs were 23 times as likely as those using neither alcohol nor drugs to be involved in fatal crashes.

“While alcohol-impaired driving remains the greatest threat to traffic safety, these findings about drugged driving are particularly salient in light of the increases in the availability of prescription stimulants and opioids over the past decade,” said Dr. Li.


Regular teeth brushing may reduce risk of heart disease, stroke

People who brush their teeth at least two minutes twice a day are less likely to develop heart disease or suffer a stroke, according to a study by Dr. Moïse Desvarieux, associate professor of epidemiology, with Dr. Ryan Demmer and colleagues that was published in the Journal of the American Heart Association and covered in the media.

The researchers found that atherosclerosis—when the arteries narrow through the build-up of calcium and fatty material—progressed in patients at the same time as clinical periodontal disease and bacterial build-up in the gums.

“This is the most direct evidence yet that modifying the periodontal bacterial profile could play a role in preventing or slowing both [periodontal disease and atherosclerosis],” said Dr. Desvarieux.

http://dailym.ai/17PH9yY http://cbsloc.al/1cfZXEv

Intestine damage raises lymphoma risk in celiac patients, study

Intestinal damage makes it more likely that a person with celiac disease will develop lymphoma, according to a study co-authored by Dr. Benjamin Lebwohl that was reported on in the LA Times.

While it has been known that celiac disease puts one at higher risk of lymphoma, a cancer that begins in the immune system, this is the first study to find that intestinal healing reduces the risk, said Dr. Lebwohl. He said it was unclear why some people’s intestines heal while others do not.

http://lat.ms/1hAfpm3
A tale of two cities

Ashland, Oregon and Houston, Texas, have both struggled to immunize their children against vaccines. That’s where the similarities end.

When in 1955 the polio vaccine was introduced to the public, it was in such high demand that there was an immediate shortage. At the time a polio epidemic was gripping the US.

Considered the biggest public health problem in the nation, the viral illness affected 30,000 to 50,000 children per year in the early 1950s, spreading to towns with little warning and sometimes rendering an infected child paralyzed for life. In a show of mass solidarity that mirrored the war effort, millions of Americans contributed money to the effort to find a vaccine. Just a few years after the vaccine became available, rates of polio had declined by 50 percent. By 1994, the virus was eradicated from the Western Hemisphere.

To understand just how much the culture around vaccines has changed in certain parts of the country, one might visit Ashland, Oregon, a picturesque mountain town with a well-educated population of around 20,000, an annual Shakespeare Festival, a slew of vegetarian restaurants, and well-preserved historical structures. Ashland also has earned the title of “least vaccinated city in the US,” for the sizable number of parents who refuse to vaccinate their children against diseases such as polio, measles, mumps, rubella, rotavirus, Hepatitis A and B, and influenza.

Ashland’s vaccine “refusers” have drawn national attention, including a visit from the Centers for Disease Control and Prevention (CDC) in 2008 and a prominent role in a 2010 Frontline documentary called “the Vaccine War.”

Ashland is not an anomaly. In the US today, there are many places like it: middle and upper-middle class suburban enclaves with a large number of parents who refuse vaccines for their children. In fact,
families who refuse to vaccinate are more likely to live in well-educated, higher income areas than those who do not, according to research.

“Its constituents are part of what you might call the suburban counterculture—parenthood and affluence mixed with creative aspirations, a crunchy-chewy lifestyle, and an inclination to question authority,” says journalist Nina Shapiro in a 2011 article in the Seattle Weekly.

A contrasting story has taken place in Houston, where in the early 1990s, the vaccination coverage rate was an abysmal 10 percent. In 1997, even as Houston started to improve, its coverage rates for children ages 19-35 months for the polio and the measles, mumps, rubella vaccine lagged well behind the rest of the country and two other major cities, Chicago and New York, according to an analysis by Columbia Mailman School’s Global Research Analytics for Population Health (GRAPH) project using CDC data. By 2012, Houston had shot well ahead.

Today, Houston’s vaccine coverage is not drastically better than Ashland’s. From 2009 to 2011 in Houston 68 percent of children ages 19 to 35 months had received all of the recommended vaccinations, while during the same period in Ashland 59 percent did.

But Houston’s exemption rate is very low: for kindergartners in the 2012-13 school year it was 0.9 percent, according to the CDC. In Ashland, 28 percent of the town’s youth population has been exempted from at least some vaccines, according to the Oregon State Department of Health. Half of those children have not received a single vaccination, according to Rebekah Sherman, the coordinator and spokesperson for the Ashland Immunization Team.

In the US, all children entering elementary school in the US are required to have a standard vaccination schedule. Parents who do not want their children vaccinated for some or all of the diseases can request a “personal belief exemption” from their school citing religious or philosophical reasons. Some states are more lenient about allowing personal belief exemptions than others.

Parents who refuse immunization for their children often argue that vaccines are full of toxins that pose health risks. One of the most predominant fears among this group is that the MMR vaccination causes autism, a theory that was put forward by British researcher Andrew Wakefield in the late 1990s and early 2000s in two studies that scientists later discovered were flawed and could not be replicated, as well as fraudulent.

Wakefield was barred from practicing medicine in Britain in 2010, yet an active anti-MMR vaccine movement has survived his infamy, in part because vaccine refusers are skeptical of the established science.


9 Editorial. Wakefield’s article linking MMR vaccine and autism was fraudulent. BMJ 2011;342 doi: http://dx.doi.org/10.1136/bmj.c7452 Epub 6 January 2011. http://www.bmj.com/content/342/bmj.c7452

PHOTO: JENNIFER P.
They often subscribe to a natural health lifestyle, believing that exposure to certain illnesses like the measles and chicken pox is better for their children than a vaccine. In Ashland, many parents take their children to naturopaths who do not recommend vaccinations for children under two, the age which kids are most vulnerable to preventable infectious disease, according to Sherman.

"Some of these normal viruses are part of the natural maturation of the immune system," herbalist and family physician Dr. Howard W. Morningstar told Ashland’s local paper, expressing a common view among vaccine refusers. "I wonder if it is wise to try to stop every mild childhood disease."

Sherman is not aware of any disease outbreak as a result of Ashland’s high exemption rate, but she adds that the naturopaths in town do not always report if their patients have come down with a disease for which there is a vaccine.

Two thousand miles away, in Houston, the picture is very different. In the fifth largest city in the US, medical professionals do not struggle with the unvaccinated—children in places like Ashland whose parents refuse vaccines. They struggle with the undervaccinated—economically disadvantaged minorities who do not get all their recommended vaccinations because of barriers like cost or a low-resourced health system.

Amidst a national measles outbreak, a 1992 CDC report11 showed that the proportion of Houston’s children who were up-to-date on the recommended vaccine doses by their second birthday was a paltry 10 percent.

"It was really hurting Houston’s reputation to have such low rates," says Anna Dragsbaek, president and CEO of Immunization services, an organization dedicated to raising vaccine awareness. "Texas has always been horrible, and Houston was the worst in Texas," says Kathy Barton, the chief of public affairs at Houston’s Department of Health & Human Services. "When you’re at the bottom of the barrel, you look at what’s going on."

A proud city, various Houston hospital systems, nonprofits, schools, clinics, and the department of health coordinated in order to raise the numbers, with funding from the federal government through the CDC’s Vaccine for Children program.

"Houston is a pretty good community for coming together. We’ve demonstrated it in lots of different ways. This is one of those episodes where it happened. We all love our hometown," says Draegsbak.

Barton, Dragsbaek and other people involved in the immunization effort say there were many changes. The department of health and Texas Children’s Hospital started a vaccination registry to consolidate information. "It was really hurting Houston’s reputation to have such low rates," says Anna Dragsbaek, president and CEO of Immunization services, an organization dedicated to raising vaccine awareness. "Texas has always been horrible, and Houston was the worst in Texas," says Kathy Barton, the chief of public affairs at Houston’s Department of Health & Human Services. "When you’re at the bottom of the barrel, you look at what’s going on."

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Barton, Dragsbaek and other people involved in the immunization effort say there were many changes. The department of health and Texas Children’s Hospital started a vaccination registry to consolidate and track every child’s immunization status. Organizations focused on boosting immunization services in clinics serving low-income families. Two of the city’s large hospital corporations, Texas Children’s and Baylor Medicine began a large education effort. Organizations like Dragsbaek’s came into local clinics to help them with a “reminder-recall program” that would contact families to tell them they needed to bring their children in for immunizations.

Unlike Ashland, Houston did not have to struggle against a large and vocal population of vaccine refusers.

If one child gets sick, an outbreak is preventable if most children nearby are vaccinated, because the disease is not likely to spread. This idea is known as herd immunity. Talking about vaccinations. They don’t want to publicly grab information. Two weeks ago at a school open house with the school nurse we had vaccination and head lice stuff out. Everyone came out and grabbed the head lice information but nobody wants the vaccine information, says Sherman.

Sherman’s organization recently lost funding for a vaccine education site they were working on.

She worries that Ashland’s days are numbered, that one of its residents could bring back a virus like the unvaccinated preteen children who went to Kenya last summer when that nation was gripped by a polio outbreak or the school football team which visited Japan while there was a rubella outbreak.

If one child gets sick, an outbreak is preventable if most children nearby are vaccinated, because the disease is not likely to spread. This idea is known as herd immunity. However, when a critical number of people are not vaccinated against the illness, herd immunity goes down, and populations are much more vulnerable to an epidemic.

Outbreaks have occurred in parts of the country with high concentrations of “intentionally undervaccinated children,” including a 2008 measles outbreak and a 2010 whooping cough outbreak in San Diego; a measles outbreak this year in a town near Fort Worth, Texas;14 linked to an evangelical church; and another measles outbreak in their states. The CDC’s Vaccine for Children program.


outbreak, this one in an Orthodox Jewish\textsuperscript{15} community in Brooklyn, New York.

The principle behind mass vaccination mirrors liberal ideals about government: that individuals should sacrifice for the greater good, that we have a responsibility not just to ourselves and our immediate families but to our communities.

Ironically, the liberal parents of Ashland and similar communities can sound like conservatives and libertarians when defending themselves.

"It’s my responsibility as a parent to keep my child safe, I think, and I don’t think it’s your responsibility to take a vaccine because I might be at the same party with you and you might cough on her. Honestly, I think your job is to protect your own health," says Jennifer Margulis, an Ashland parent featured in the "Vaccine Wars."\textsuperscript{16}

Sherman acknowledges the irony: "These are educated people. If you were to question any of these people about the science behind climate change, they would look at you like you were crazy."

They think "because we wash our hands, because we eat organic foods, because all our friends’ children are happy, because they go to these Waldorf schools that are really environmentally conscious; that they’re protected. They have the sense that ‘I can control every encounter my child has.’ They don’t think about the fact that kids are leaving Ashland, going to places with outbreaks, and coming back," says Sherman.

Ironically, the success of campaigns against polio and other nearly-eradicated diseases may have created a complacency out of which sprung up the anti-vaccine movement of today. People in the movement will often mention that the vaccines they are refusing for their kids are for diseases that we no longer have to worry about anyway—though this is only the case so long as enough of the population is vaccinated.

"The period of time during which disease prevalence remains low enough to escape public notice corresponds to a spike of vaccine refusal as vaccine-preventable diseases fall out of public notice and post-vaccine adverse events gain more attention," says an article\textsuperscript{17} from June in the journal \textit{Biological Sciences} by Drs. Diane Saint-Victor and Saad B. Omer at the Rollins School of Public Health at Emory University.

In Ashland, Sherman says that the people she knows who get their children fully vaccinated “all know somebody that had polio or meningitis or pertussis and had some life-altering event because of those diseases.”

This is true for Lorie Anderson, a mother in Ashland who has vaccinated her own children and who runs a blog called Thinking it Out,\textsuperscript{18} which covers the immunization controversy in her town from a pro-vaccination perspective.

Says Anderson: “I guess if you go back into my personal history, I did have a grandmother who died early because of her polio injuries. And I remember seeing images of iron lungs and just being terrified, and I remember being terrified of getting my first shot and meeting people in school who were refusing the first shot. But I also remember thinking ‘I’m a pioneer doing this.’”


\textsuperscript{18} http://applyingcriticalanalysis.wordpress.com/immunize-ashland
From paradise
to public health emergency

Ms. Stephanie Lucas is doing a three-month practicum in Manila with the International Organization for Migration (IOM), one of the groups involved in the current relief efforts in response to Typhoon Haiyan. This is an excerpt of an article she wrote for the 2x2 project about her experience before, during, and after the typhoon.

The weekend before the typhoon hit, I was in Coron, a city in the province of Palawan, which people like to call the “last frontier of the Philippines.” I had spent the first two months of my global practicum living in Palawan, so it was natural for me to trade the fast-paced life in my current residence, Manila, for a weekend in paradise. On a boat ride there, a friend and I toured numerous limestone islands, hiked trails to swim in the famous Lake Kayangan, and climbed up Mt. Tapyas to view the large cross and gush at the view of Coron Town during sunset. It was magical. All of these sites would be severely devastated a mere four days after I left.

...I heard reports of the typhoon hitting Samar and Leyte early Friday morning, but that was about the extent of the news. The storm was ravaging through the Philippines, and it was set to be closer to metro Manila by nightfall. The dark and ominous sky, however, looked scarier than it actually was. We only had about an hour of light rain and some winds here. We were lucky: the typhoon nearly missed us entirely.

That weekend, reports slowly started to surface about the

Read the full article at http://the2x2project.org/typhoon-haiyan

MPH ’14 trainee Stephanie Lucas offers a view from the Philippines post-Haiyan
I was living in the Philippines. I was in Manila. People were still going to work and carrying on with their lives. I sympathized, but I did not fully get it.

damages: the Eastern Visayas region where the storm initially made landfall was particularly hard hit. Other areas like Central Visayas, Southern Luzon, and Northern Palawan were also said to be affected. Luckily there were also places that were spared: friends I knew in central Palawan said that they experienced heavy rains and wind, but that all in all, the informal communities that they worked in were okay.

On Monday, stories started to circulate in the office. People with family and friends in affected regions had much difficulty contacting them. A surgeon from Samar sent word that his town was not okay. He appealed to my coworker for help, telling how many people were injured or missing and how many houses were flattened.

But at that point, it was still difficult for me to fully comprehend the situation. What I saw on the news and the stories I heard impacted me, but it wasn’t real yet. I was living in the Philippines. I was in Manila. People were still going to work and carrying on with their lives. I sympathized, but I did not fully get it.

Then I received word from a friend I made in Coron. She reported that many trees had fallen causing places like Lake Kayangan—where I had been the weekend before—to be inaccessible. The large cross on Mt. Tapyas fell. More than 50 boats were destroyed. Many people were dead or missing.

The devastation started to hit home.

On Tuesday, I participated in a series of health cluster meetings at the Philippine Department of Health, and the details of the storm and its destruction became even more concrete. I never thought about what actually goes on behind the scenes of a humanitarian response until that moment. It helped me look beyond mere sympathy and realize that we, in being there, had the responsibility to do something.

We discussed how to assess the situation, brought up current and potential challenges, and aimed to organize, prioritize, and coordinate response efforts.

As someone who has no prior experience with disaster relief, I see now how difficult it can be for the people leading a response to weigh questions of necessity, efficiency, timeliness, and accuracy. With my epidemiology background, I am struck by the tension between collecting and analyzing data in a timely manner and simply acting with the information that you have. It takes collaboration with others, patience, and composure to make tough calls that will save lives and restore structure to a seemingly hopeless situation. It takes negotiating the differing priorities of individuals and groups in order to come up with a solid plan of action. It takes the ability to recognize and utilize the human rights framework in a situation that stripped individuals of that dignity. To put it simply, it takes finding creative short and long-term solutions to both minor and major challenges.

...The effects of catastrophes such as Typhoon Haiyan stretch way beyond the short-term relief needs. What will happen when the news coverage ends? Will funding and aid still continue? How do we rebuild whole cities and re-establish infrastructure once the rubble has been cleared? How do we ensure the continuity of care and access to care for the massive amounts of displaced people?

I received a text today from my friend in Coron. While she is physically well, she has many other issues to deal with. Currently she is homeless. Her house was completely destroyed in the storm. She doesn’t have any money or a means of making any. As an island guide, the storm has halted all tourism almost completely, leaving Coron’s major industry to rapidly deteriorate. And all of this stress may unconsciously start to affect her mental health.

This is just one person in one town affected by Typhoon Haiyan. There are millions of others.

...Typhoon Haiyan is not going to be the last disaster or crisis; we need to continue thinking about these issues before the next one comes.

I want to keep encouraging people to donate (http://redcross.org.ph) or at the very least, keep the Philippines in your thoughts. While there is still so much to do, Filipinos will get past this crisis—especially with all the help and support they are currently receiving.

PHOTO: CORON MAYOR’S OFFICE

...
Putting childhood disability on the map

Epidemiology and UNICEF join for symposium on historically challenging public health issue

As global officials gathered in New York City for the United Nations’ annual General Assembly meeting, the department teamed up with the United Nations Children’s Fund, or UNICEF, to host the first Columbia University Epidemiology Scientific Symposium (CUESS) of the fall 2013 school year, titled “Putting childhood disability on the map.”

The symposium comes at a time of heightened attention to and new partnerships in this area. The UN General Assembly and the World Assembly have passed resolutions calling for greater recognition and collaboration around developmental disabilities, and UNICEF’s “State of the World’s Children” report, published this year, made child disability a global priority. Heads of state met during the General Assembly to decide whether disability will be included in a post-2015 global development agenda.

At the CUESS, national and international research, policy, and government leaders addressed such topics as how to improve inclusion of disabled children, challenges of collecting data in low and middle-income countries, and disability rights.

The event was hosted by Dr. Leslie Davidson, professor of epidemiology, who specializes in maternal and child health, and Dr. Claudia Cappa, a statistics and monitoring specialist in the division of policy and practice at UNICEF.

The underlying causes of developmental disabilities are myriad and can include genetic factors, nutritional deficiencies, infections, trauma, toxic exposures, perinatal health, and poverty, said Dr. Maureen Durkin, professor of population health sciences and pediatrics at the University of Wisconsin-Madison. Yet, the majority of disabilities are a result of unknown causes.

Progress in this area looks different than in many others, said Dr. Durkin. Disability diagnoses have risen not because health is getting worse but because there have been global reductions in infant and child mortality over the last 25 years.

“Typically our goal in public health is to eradicate the diseases we’re trying to study,” said Dr. Durkin. “What I’ve learned in developmental disabilities is that the more that’s our goal, the more we’ll be disappointed.”

Low and middle-income countries are in the midst of an “epidemiologic transition” where reduced child mortality will lead to increases in chronic conditions.

“We need to think beyond just survival,” said Dr. Durkin.

One key way to do that is to improve the way data about children with disabilities is collected. Participants in a UNICEF-organized collaboration spoke about the importance of setting statistical and methodological standards at an international level in order to compare different countries.

“We need to make sure that children with disability are visible in research and statistics so that their needs can be met,” said Dr. Cappa.

Yet there are many significant challenges. Countries use different definitions between them, the quality of statistical data varies widely, in many places there is too little research, and some disabilities simply are not recognized at all.

Take depression: despite being the leading cause of disability globally and the leading cause of suicide, it is often ignored or belittled, said Dr. Cappa. Yet suicide—which often results from depression—is increasingly a cause of death for youth, according to Dr. Christina Hoven, professor of epidemiology (in psychiatry) at Columbia, who investigates possible interventions that could be used to reduce suicide in schools.

Despite a supposed commitment his home country of India had made to address childhood disabilities, Mr. Javad Abidi, founder of the National Disability Network, said that data is not being collected and it feels like people with disabilities “are invisible.” Ninety-eight percent of children with disabilities in India are not able to access any form of education, according to Mr. Abidi.

Today, the vast majority of research—more than 90 percent—occurs in high-income countries, even though more children probably live in low and middle-income countries. This can be seen in autism, where there is a global disparity in the number of epidemiologically confirmed cases between high and low income countries, said Dr. Durkin.
Many of the data sources high-income countries use to estimate prevalence of disability are not available in low and middle income countries, including administrative records from schools and clinics, registries, birth cohort studies, household censuses, and surveys.

The “deprivations stem from and are perpetuated by children’s exclusion from statistics,” said Mr. Abid Aslama editor of UNICEF’s The State of the World’s Children. “We need data to expel ignorance about causes of disability.”

But new efforts for data collection are underway, said UNICEF representatives.

Dr. Michael Boivin, associate professor of neurology at Michigan State University, who conducts assessments of children with neuropsychological diseases in low-income countries in Africa said that the revolution in mobile network technology would usher in improved measurement tools.

With Dr. Davidson, and several other organizations present at the CUESS, UNICEF is working to provide guidelines to low and middle-income countries in their capacity to gather sound and relevant data, discuss conceptual and theoretical issues, and review methods that have been previously used to collect data, with particular attention to methods in low-resource settings.

“All countries in the world have collected data on disability,” said Dr. Cappa. “It’s not the lack of data: it’s the lack of quality data that is the real problem.”

Although the challenges are admittedly great, participants expressed optimism over the growing attention to child disability.

“There is a sort of a feeling of change, of excitement, that after the many years people have been working in this area, there are some shifts,” said Dr. Davidson. “The shifts are kind of cataclysmic.”

— Additional reporting by Chris Tait, MPH ’14

Communication in Health and Epidemiology Fellow for the 2x2 project
Mental health as a global issue

According to recent estimates, mental disorders and substance abuse add up to almost a quarter of the global disease burden—more than any other cause. Yet, compared to other diseases, few resources are devoted to treating and preventing conditions like depression, anxiety, bipolar disorder, autism, drug addiction, and schizophrenia.

In many, if not most cultures, the stigma surrounding mental illness deters people from seeking help. Often when they do, they run up against difficulty finding good treatments.

“From within public health there has been a commitment to a global understanding of health for decades, but mental health has largely been in the shadows,” says Dr. Kathleen Pike, clinical professor of psychology and education (in Psychiatry and Epidemiology). “Mental and behavioral disorders are the leading cause of disability globally, and mental health is the strongest predictor of well-being worldwide. Mental illness is common, serious, and global—it can’t be left behind and it can’t be addressed later, after we deal with everything else given that it impacts virtually everything else.”

Dr. Pike is executive director and scientific co-director of the Global Mental Health Program, or GMHP, a collaborative effort led by a partnership of investigators in the Departments of Epidemiology and Psychiatry. GMHP supports faculty and prepares trainees to advance the field of global mental health by building research ties and establishing educational and training opportunities in low and middle-income countries to raise awareness and build capacity for prevention and treatment of mental illnesses.

Dr. Pike and her fellow scientific co-directors Dr. Sandro Galea; Dr. Harold Pincus, professor of psychiatry and vice-chair for strategic initiatives in the Department of Psychiatry; and Dr. Ezra Susser, professor of epidemiology and psychiatry, all have a history of working on mental health projects abroad. Several other Epidemiology faculty are involved including Drs. Lawrence Yang, Myrna Weissman, Francine Cournos, Christina Hoven, Magdalena Cerdá, Silvia Martins, and Richard Neugebauer.

GMHP’s work takes place at a time of increased global attention to mental health. This year, the World Health Organization (WHO) released its first global mental health action plan, a historic commitment to improving mental health services and reducing suicide rates in nearly 200 member states. Dr. Pike attended its launch at WHO in Geneva.

According to WHO, 75 to 85 percent of individuals with mental illness in low and middle income countries never receive treatment. Because most research on mental health and mental disorders comes from high-income countries, the need to build both research and clinical capacity in low-income communities is significant. To achieve this, GMHP is working with WHO to develop a global network of clinicians and clinical sites committed to research and training in mental health.

At Columbia, GMHP offers many resources for Epidemiology faculty, including connecting them to a network of other researchers, highlighting their research, and helping to recruit research assistants for studies.

Students can do a global mental health-themed practicum working with GMHP and Dr. Anne Paxton, associate professor of epidemiology, and head of the school-wide Global Health Certificate. This year GMHP placed two MPH students at WHO (see below).

GMHP also hosts regular symposia and other events, such as the seminars held last spring that focused on the development of the International Classification of Diseases-11, and the NYC Forum on Global Mental Health, and a monthly Columbia University Seminar on Global Mental Health. The 2013-2014 program was launched with a talk by Robin Hammond, an award-winning photojournalist who spoke about his work documenting the plight of individuals with mental illness in low-resourced communities in Sub-Saharan Africa.

With funding from the inaugural round of President Lee Bollinger’s Global Innovation Initiative, GMHP will also organize a series of meetings to address mental health priorities in various parts of the world. The first will take place in Amman, Jordan in 2014.

Students interested in learning more about global mental health are encouraged to register for the course Priorities in Global Mental Health, which will be offered for the first time during the spring 2014 semester.

For more information, visit http://columbiagmhp.org or email Dr. Pike at kmp2@columbia.edu.
Two Epidemiology students did their practica through GMHP this year. Here they describe their experiences:

Leona Zahlan, MPH '14
WHO ICD-10 Revision, GMHP/AUB-MC Intern (Beirut, Lebanon)

My interest in global public health originated while growing up in Ghana, where I was able to observe the drastic effects of HIV/AIDS and the impact of stigmatization on the mental health of HIV positive women. While studying biological determinants of health at the University of Miami, I was surprised to observe similar issues of health disparities in the US as in Ghana. My interest in mental health was reinforced while volunteering with AIDS Project Los Angeles. After that, I became involved in research on the spiritual coping mechanisms of HIV positive individuals in South Florida. I decided to pursue a degree in public health at Mailman because of its excellent reputation and numerous opportunities to grow.

Through Dr. Pike and GMHP, I was given the opportunity to work on field studies that will inform WHO ICD-11 for my practicum. My placement in Beirut, with trips to Mexico City and Geneva, focused on sexual health in the Arab Region, providing support to help those countries reduce their disease burden.

While attending WHO Final Project Protocol Meeting in Mexico City in early July, I was fascinated to observe the number of stakeholders involved in the process, including forensic psychiatrists, psychologists, reproductive health experts, sexologists, lawyers, and judges, and the amount of work and dedication required to modify, create, and test the sexual health and sexual disorders proposals.

Working with Dr. Brigitte Khoury at the American University of Beirut (AUB), I have been able to observe the importance of cultural differences. Since there are few epidemiologists or public health experts working with me on this project, it has been rewarding to be able to provide an epidemiologic perspective and to apply some of the skills I learned through my coursework at Mailman.

I am currently working on the preparations of WHO Stakeholder Meeting hosted by the Arab Regional Center in Beirut in late October to initiate the field studies process. In early October, I will be traveling to WHO in Geneva to attend and assist with the Global Mental Health Forum, which is a World Mental Health Day event.

After I earn my MPH at Mailman, I plan to work in the field of global mental health and reproductive and sexual health before continuing towards a PhD.

For more information on the ICD Revision: http://www.who.int/classifications/icd/revision/en

Mala Dorrai, MPH '14
WHO (Geneva, Switzerland)

This summer I had the honor of working with a team of three experts on developing the monitoring and evaluation aspects of the WHO’s comprehensive mental health action plan (CMHAP) 2013-2020, a commitment of all 194 WHO member states to bolster their national mental health systems and reduce the global burden of mental disorders by updating policies and laws, providing more community-based mental health care, and strengthening mental health information systems. Six global targets have been established in the CMHAP addressing key action areas of the plan including a 20 percent increase in service coverage for severe mental disorders and a 10 percent reduction in suicide rate by the year 2020.

Our primary goal was to develop a list of indicators that would capture the global targets of CMHAP that member states would report in an accurate and timely manner. We were also responsible for developing a global monitoring framework document to provide guidance, training and technical assistance to member states on capturing data using these indicators. I also helped outline the monitoring framework document, consisting of a section that provides an overview of current data collection techniques and a section that provides data collection sources and strategies at the population, policy, facility, and individual level.

We established screening criteria and created a scoring template for the indicator review process. My supervisor and I facilitated four meetings with a WHO mental health expert panel, and three rounds of email consultations with mental health experts around the world, where the preliminary indicator list was reviewed, scored, and refined.

I learned a great deal about the processes involved in the monitoring and evaluation of a large-scale action plan and program. I also gained the skills needed to develop contextual framework, conduct extensive literature reviews, and facilitate deliberations with world health leaders. This experience showed me the value of the work of international non-governmental organizations such as WHO to prevent disease and to protect and promote the health of individuals. I eagerly await the impact that the CMHAP makes on the global burden of mental disorders over the next eight years.
Conference addresses dearth of autism research in Latin America

Like many conferences, Latin America’s first-ever regional conference on autism spectrum disorders brought together scientists and clinicians to share knowledge. But what surprised Dr. Daniel Pilowsky, assistant professor at CUMC of epidemiology and psychiatry, and chair of the event, was the number of non-practitioners from the region in attendance, including government representatives of Argentina, Brazil, and Chile, and a large group of families with autistic children.

“It suggests that parents are very active in demanding services in these countries,” said Dr. Pilowsky.

While rates of autism diagnoses are believed to be rising in Latin America, little data is available in the region, and many families dealing with autism have trouble finding treatment. Most autism research takes place in high-income countries in North America and Western Europe.

The purpose of the Conferencia Latino-Americana del Espectro Autista, held September 10-11 in Santiago, Chile, at the Universidad de Chile, was to encourage more research into autism in the region by creating partnerships with investigators in North America and Europe, and to discuss strategies to further understanding of autism and improve delivery of services to people with the disorder. The Department of Epidemiology co-sponsored the event with Autism Speaks, an advocacy organization, and RedeAmericas, a National Institute of Mental Health (NIMH)-sponsored network for mental health research in Latin America whose principal investigators include Dr. Ezra Susser, professor of epidemiology and psychiatry, and Dr. Sandro Galea, and Dr. Pilowsky as a co-investigator. Representatives from NIMH and UNICEF also attended the event.

Dr. Susser, Mr. Michael Rosanoff, a DrPH candidate and associate director of public health research at Autism Speaks, and their colleagues also met with Chilean presidential candidate and former president Dr. Michelle Bachelet at her campaign headquarters to discuss the state of autism in Chile and strategies to implement new United Nations General Assembly and World Health Assembly resolutions on autism.

“Latin America is poised to be a leader in the global autism movement,” said Mr. Rosanoff after the meeting and conference.

“The activities happening on the ground in Argentina, Brazil, and Chile—from services capacity building to awareness and legislation—will provide a framework for action in other countries in the region and around the world.”

For Dr. Pilowsky, the most memorable moment of the conference was a 25-minute drama presentation by autistic children and their parents showing common challenges that these families must deal with. One presentation showed an autistic child having a severe temper tantrum at a store and a parent struggling to figure out what to do.

“I was struck by the level of interest among parents and clinicians in all three countries and especially by the fact that most of what has been accomplished there is because parents have been pushing hard. It’s the pressure coming from below,” said Dr. Pilowsky.

He says the next step is to establish a joint effort between Columbia, Autism Speaks, and academic centers in the participating Latin American countries, which he hopes will lead to more advanced training of clinicians and collaborative research.


For more on the meeting with Dr. Bachelet, visit http://autismspeaks.org/science/science-news/autism-speaks-receives-audience-michelle-bachelet
From power lines to cell phones: 25 years of research on nonionizing radiation and cancer

Non-ionizing radiation from power lines, microwaves, and cell phones is unlike many chemical exposures in that it has never posed a known public health threat. But interest groups, politicians, and individuals have long worried that technology that produces this kind of radiation increases the risk of developing cancer.

At the first Columbia University Epidemiology Grand Rounds (CUEGR) of the academic year, Dr. David Savitz, a professor of epidemiology and obstetrics and gynecology at Brown University, spoke about how epidemiologic investigation has informed policy debates around radiation, where, like many new technologies, public concern has been high despite much uncertainty about health effects.

At least 25 years of research has gone into this area, including Dr. Savitz’s own work. He described two long-running areas of investigation: magnetic fields emitted from power lines and radiation from cell phones and cell towers.

Public concern in the 1980s and 1990s about power lines came out of increased awareness about environmental issues, particularly because the effect of radiation emission from power lines was not well understood.

The first epidemiologic study in this area, which looked into whether children with brain tumors and leukemia were more likely to live near power lines, was widely criticized for its unconventional methods and high potential for biased results.

Over the next two decades, research using new methods produced very little evidence to confirm fears that children exposed to high levels of radiation from power lines were at increased risk.

“We moved rapidly from ignorance to sufficient clarity,” said Dr. Savitz, “We reduced uncertainty, and the evidence stabilized to allow people to get on with their lives without concern.”

Just as worries about the potential health effects from power lines began to subside, some believed the emergence of cellular phone technology posed a new possible threat.

Studies in the 1990s began to look into self-reported history of cell phone use and its association with brain tumors.

Dr. Savitz reviewed the landmark Interphone Study, an international collaborative investigation into the potential effects of cell phone use on the risk of brain tumors. Surprisingly, results suggested that cell phone users were at decreased risk of brain tumors compared to non-users. Further research failed to find a link between cell phone use and brain tumors, making it an increasingly doubtful hypothesis.

Although researchers spent years failing to find evidence of cancer risk from non-ionizing radiation, Dr. Savitz said there is still value to this work.

“Practicing epidemiology to make sure we haven’t missed something that’s unlikely to be there can be informative in addressing a policy concern where we just don’t want to make a mistake,” he said.

He also stressed the importance of communicating scientific information clearly to policymakers so they are equipped to address the uncertainty. And he advised epidemiologists to be receptive to engaging with other disciplines where epidemiology alone may not be enough to understand the whole story.

He closed by encouraging trainees to learn enough about areas outside of their immediate focus: “I think students should pick a territory that’s broad enough to be interesting, but to be open-minded and recognize that as you get into more depth you are going to need collaborators.”

—Chris Tait
While working as a physician assistant in emergency medicine at Elmhurst Hospital in Queens, NY, Dr. Charles DiMaggio, now an associate professor of epidemiology, observed that many of the most terrible injuries he had to treat were also the most preventable.

“There was a time when in the summer months in New York City, we would routinely have cases where children fell out of apartment windows. It was simply awful,” he says. “Through the work of folks like Dr. Barbara Barlow at Harlem Hospital and Columbia, there was a push to mandate window guards in apartments with children. After that, we gradually stopped seeing many of those kinds of injuries. I felt an epidemiological perspective and public health approach could help prevent some of that trauma.”

Although Dr. DiMaggio “caught the epi bug early” while learning about John Snow in an undergraduate course in public health at St. John’s University, he spent his first 20 years after college as a physician assistant before coming to the Department of Epidemiology for his graduate work.

Child pedestrian injuries, such as getting hit by a car, were “among the most objectionable, and preventable, kinds of trauma we routinely saw” in the emergency room. When he began his graduate work, he decided he would research the epidemiology of such injuries in New York City, supported by the New York City Department of Transportation.

More recently, funded by the National Institutes of Health and the Centers for Disease Control and Prevention, he and Dr. Guohua Li, a frequent collaborator and current head of the injury cluster and the Center for Injury Epidemiology and Prevention, released a study that found Safe Routes to School, a federal program that funds “traffic-calming measures” around schools, dramatically reduced injuries in New York City. He and Dr. Li are currently looking at whether the success has occurred in other cities and states around the nation.

In other research, he has found that children who are put under anesthesia are at greater risk of developmental and behavioral disorders, although it is not clear if the relationship is causal.

He has also looked at the emergency response to terrorist attacks as well as mental health treatment after such disasters and how those data can contribute to surveillance programs that can monitor the behavioral health effects of the disasters like the September 11, 2001, attacks in New York City.

As injury epidemiology has become an important research focus in the department, Dr. DiMaggio has played a significant role, serving as the research director at the Center for Injury Epidemiology and Prevention, where he administers the center’s pilot grant program and coordinates the efforts of co-investigators. He also meets frequently with students who are interested in the field of injury epidemiology.

“I give thought to the kinds of issues facing injury epidemiology. Two that occur to me are: first how we can inspire and most appropriately prepare the next generation of injury researchers and practitioners, and second how we can best harness the potential of new, large, and ubiquitous data sources to inform the evidence base to prevent and control injuries,” he says.

Dr. DiMaggio has taught epidemiologic research methods to the epidemiology master’s students for over 10 years and currently teaches statistical computing in R to doctoral students.

Apart from his academic interests, he likes traveling with family and playing the guitar.

He plans to continue his focus on pediatric injury, saying that a common misconception about prevention efforts is that they prevent “kids from being kids.”

“It’s not an either or choice. There are public health interventions that ensure that. A lot of parents think, ‘well I want to protect my child so probably best if they stay very close to home,’ and a lot of kids do stay home and then they have other issues, like obesity or they don’t interact with other kids,” he says. “Kids really can be allowed to be kids and can be allowed to be active and can be allowed to run around and play and still be safe.”

— Co-authored by Richa Singh, MPH ’15
Dr. Sandra Echeverria, PhD ’06, an assistant professor of epidemiology at the Rutgers School of Public Health, is a social epidemiologist who studies the social determinants of cardiovascular health, focusing on health and physical activity in Latino communities.

In her research, Dr. Echeverria uses large-scale data or cohort studies to examine how people’s level of physical activity and BMI are associated with whether they are native or foreign-born, their neighborhood “built environment,” and their socioeconomic position.

She is currently looking at racial and ethnic disparities in physical activity of participants recruited at Columbia University and at the longitudinal relationship between various modes of physical activity and BMI.

Dr. Echeverria uses traditional epidemiologic study designs for what she refers to as her “nontraditional” epidemiologic work in communities. Over the past few years, she has dedicated a significant amount of time to working with community groups in New Brunswick and Newark, NJ, on preventive health initiatives for marginalized Latino and African-American populations.

Her purpose is not only to use the data generated from these projects academically but also to create “tangible community results” that provoke conversations and efforts toward sustainable changes. She is currently examining how neighborhood residents perceive the role of parks in promoting health, using their perspectives to launch programs that increase park use. After finding that parents in an impoverished and crime-ridden area were concerned about taking their children to parks because of safety issues, she worked with community partners to develop and evaluate the delivery of physical activity programs where the local police force would provide more active patrol during sessions.

To ensure that the project would have long-term policy implications, she designed an assessment for local community groups and the mayor’s office in New Brunswick. The city is now considering adopting park programming and working on an approach to addressing physical activity for the city’s youth.

Dr. Echeverria’s work is a testament to the diverse academic experience she had at Mailman School. With an MPH in sociomedical sciences, she developed a strong foundation in racial and ethnic health disparities and the role of social determinants in shaping the health of populations. After completing her MPH, Dr. Echeverria spent several years working on international public health at the International Planned Parenthood Federation in the Western Hemisphere region. She traveled extensively to countries including Bolivia, Argentina, Mexico, Guatemala, Jamaica, St. Lucia, and Guyana. As a woman raised in an inner city in the US, she found that travel allowed her “to see my humanity in a different perspective” and identify “our common humanity” across the globe. Yet, as she moved forward in her career, she no longer wanted to be “shuttled in and out of places,” working with communities at a snapshot moment.

Returning to the US, she decided to pursue an epidemiology degree in order to build a strong methodological foundation, focus on refining her skills in study design, and on crafting rigorous quantitative investigations. She recalls the encouraging and passionate research and mentorship of her PhD advisor, Dr. Ana Diez-Roux, and dissertation chair, Dr. Bruce Link.

“I was exposed to people at the cutting edge of their field who remain a part of my network and have been instrumental in shaping my academic, professional and personal growth.” Among her fond memories while studying at Mailman was going to El Presidente, her favorite spot to eat in Washington Heights, with fellow classmates and professors. Today Dr. Echeverria lives in New Jersey with her husband and two children, Camila and Adrian.

— Amina Foda, MPH ’15
As senior cluster administrator (SCA) for the chronic disease epidemiology cluster, Bijal Shah is used to switching between the numerous and widely varied demands of her position.

“Getting acclimated to our department’s fast-paced environment is never easy for an SCA, but Bijal came to work for us at a particularly busy time—right in the middle of the January NIH cycle,” says department administrator Christina McCarthy, who manages the SCAs. “I was so impressed with how quickly she was able to start working with the faculty and staff and how committed she was, and is, to understanding everything that is happening across every project in the cluster. She has become such an integral part of the chronic team and I think that the entire cluster is functioning more efficiently because of her efforts.”

Bijal was born in India but spent most of her life in California, studying history and digital arts at University of California-Irvine. She tried out journalism as an intern at KPCC, an NPR affiliate in Los Angeles, on the show “Airtalk with Larry Mantle” which covers current events, politics, and news. She worked on a pilot show during the 2004 elections that included a memorable interview where she got to speak with the actor Paul Newman.

“I had to ask him to speak up because he was speaking too softly,” she says. “He was nice when I asked him about it.”

After NPR, she gained financial management experience as a project specialist at Kaiser Permanente, working with architects on financing for facilities and capital projects like building a new hospital or renovating a space. While at Kaiser, she became interested in working in education and took a position at the Southern California Institute of Architecture as executive assistant to the director of the school.

Bijal eventually decided she wanted a change and made the cross-country move to New York City.

“I had reached a point where I was like, it’s now or never.” After two months, she was hired to work at the Research Foundation for Mental Hygiene at the New York State Psychiatric Institute in Dr. Deborah Hasin’s research group.

She came to the SCA job nearly one year ago. It is rare that any two days in this job are alike, she says, but a typical one might involve submitting a grant application, working on a progress report, reviewing projects to keep track of the budget, and answering questions from trainees and faculty.

“It is a pleasure working with Bijal. She is extremely smart, hard-working, and professional. It is incredibly impressive to see how much she juggles. Our cluster is so lucky to work with her,” says Dr. Mary Beth Terry, the director of the chronic disease epidemiology cluster and a professor of epidemiology.

Bijal recently moved to Harlem from the Upper East Side. She takes advantage of many of New York City’s cultural offerings, including seeing her friends play jazz; going to events at Summer Stage, Lincoln Center, and the New York Philharmonic; visiting the city’s art museums; and going to plays—she recently saw Betrayal with Daniel Craig and Rachel Weisz.

“It’s great working here. Everyone’s really nice. It makes it easier when things get stressful” she says.

**APPOINTMENTS**

**STAFF**

**Jamil Alexis** was appointed as a technician A in the infectious disease epidemiology cluster.

**Melanie Caban** was appointed as a variable hours officer in the injury epidemiology cluster.

**Sabrina Hermosilla** was appointed as a data analyst in the psych-neuro epidemiology cluster.

**Stephanie Kujawski** was appointed as a data analyst in the psych-neuro epidemiology cluster.

**Valerie McArdle** was appointed as associate director for special programs.

**Styl Perez** was appointed as a research worker in the infectious disease epidemiology cluster.

**Charissa Pratt** was appointed as a project coordinator I in the lifecourse epidemiology cluster.

**Seth Prins** was appointed as a data specialist in the psych-neuro epidemiology cluster.

**Catherine Richards** was appointed as a program manager in the psych-neuro epidemiology cluster.

**Andrew Ratanatharathorn** was appointed as a data analyst in the psych-neuro epidemiology cluster.

**Janine Rose** was appointed as a project coordinator I in the lifecourse epidemiology cluster.

**Jennifer Sumner** was appointed as a project manager in the psych-neuro epidemiology cluster.

**Alejandro Vanegas** was appointed as a project coordinator in the chronic disease epidemiology cluster.
Master’s Student Day
Trainee research highlighted in presentations and poster session

Are natural detoxifications safe and effective? How can surveillance of food-borne illnesses be improved? Is there a connection between how teenage girls go through puberty and their risk of breast cancer later in life? Are kids eating healthier after McDonald’s menu changes? Is there an association between video games and children’s thoughts of death and suicide?

This research and much more was on display at the third annual Epidemiology Master’s Student Day in October, where second year master’s students prepared a presentation or poster about their practicum work. The event was created to give master’s students an experience similar to a professional conference and an opportunity to share their practicum work with faculty and other students in the department. Dr. Joyce Pressley, associate professor of epidemiology and health policy and management at CUMC and director of the department’s practicum-thesis program, is the central coordinator of the event.

Prizes were awarded for best student abstracts and best poster in each cluster. The students who won for best abstract gave presentations, which are summarized below:

**FIRST PRIZE**
Psychiatric hospitalizations among children and youth in New York City

Raquel Duchen (Adviser: Dr. Cynthia Driver)
Practicum site: New York City Department of Health and Mental Hygiene (Epi Scholar)

Ms. Duchen was concerned with whether hospitalization of young people for mental or behavioral disorders could have been prevented if the patient had earlier and better access to health services. To investigate this, she looked at the connection between neighborhood poverty and hospitalization for individuals in New York City under age 24 over the years 2000 to 2010.

According to her research, one in 12 children in New York City were hospitalized for psychiatric conditions, and young people living in lower income neighborhoods who ostensibly had less access to mental health services were more likely to have been hospitalized than their counterparts in more well-to-do neighborhoods. This suggests that many young people who were hospitalized did indeed lack access to other mental health services.

**SECOND PRIZE**
Prenatal maternal stress and risk of autism spectrum disorder (ASD)

Amrita R. Vavilikolanu (Adviser: Dr. Mady Horning)
Practicum site: Center for Infection and Immunity at the Mailman School of Public Health

As rates of autism spectrum disorders (ASD) have increased, there is growing interest in whether pre-birth conditions can predispose a child to one of the disorders. The idea is that prenatal exposure to environmental stressors could be linked to adverse neurodevelopment. Ms. Vavilikolanu looked at the effects of a mother’s stress response on the risk for an ASD.

The study used the Autism Birth Cohort Study, in which mothers were surveyed about stressors during pregnancy such as physical or sexual abuse, emotional loss, physical problems, or work and financial stress. Mothers who dealt with any one of those stressors were significantly more likely to have a child with an ASD—but only a male child. Ms. Vavilikolanu concluded that ASD is related to maternal anxiety and depression; however, the biological mechanism that could explain this is not known.
THIRD PRIZE
The impact of changing kids’ meal default items at fast-food restaurants

Lindsey Wahlstrom (Adviser: Dr. Y. Claire Wang)
Practicum site: Yale Rudd Center for Food Policy and Obesity (New Haven, Conn.)

Reacting to pressure from parents and members of the health and medical community, McDonalds in 2011 began offering healthy side items in its kids Happy Meals to replace or supplement French fries. Ms. Wahlstrom chose to investigate whether this move got parents and kids to change their eating habits.

Remarking that “as Americans we feel we have the right to do whatever we want or die trying,” Ms. Wahlstrom pointed out that McDonald’s strategy represents a “libertarian paternalism.” While the change came from above, parents could still opt to get their child a meal that did have fries in addition to or instead of apple slices. What she found is that most parents chose to get their kids the “default” option, which serves apples slices with fries. She concluded that a restaurant’s decision to change its menu items can positively shape food choices.

POSTER PRIZE WINNERS

Chronic disease epidemiology: Ms. Sara Gelb for “Gender differences in the association between depression, anxiety and type 2 diabetes mellitus” (Department of Epidemiology, Dr. Ryan Demmer)

Infectious disease epidemiology: Mr. Patrick Warren for “In vivo efficacy of artemether-lumefantrine, artesunate-lumefantrine + primaime, and artesunate for the treatment of P. vivax malaria: A randomized open-label trial in Central Ethiopia” (Earth Institute, Columbia University)

Injury epidemiology: Ms. Hajere Gatollari for “The impact of backseat seatbelt laws and driver characteristics on restraint status in rear-seated teens involved in fatal motor vehicle crashes” (Departments of Epidemiology and Health Policy and Management, Dr. Joyce Pressley)

Psychiatric/neuro epidemiology: Ms. Janice Okeke for “Genetic testing preferences among individuals with epilepsy and unaffected family members: Impact of penetrance and clinical utility” (Sergievsky Center and the Department of Epidemiology, Dr. Ruth Ottman)

Social epidemiology: Mr. John Pamplin for “Perceived stress and hypertension among Hispanics in Northern Manhattan” (Mount Sinai School of Medicine)

Lifecourse Epidemiology: Mr. Thomas Vo for “Racial and ethnic differences in substance use across the life course: A national study” (Department of Epidemiology, Dr. Katherine Keyes)
Launch of new journal

Injury Epidemiology

Dr. Guohua Li, Finster Professor of Epidemiology and Anesthesiology and director of the Center for Injury Epidemiology, is editor-in-chief of a new, open-access journal called Injury Epidemiology, which is published by Springer in partnership with Columbia University. The mission of Injury Epidemiology is to advance the science and practice of injury prevention and control through timely publication and dissemination of peer-reviewed research. Other faculty from the department and the Injury Center are involved, including Dr. Barbara Barlow, special lecturer of epidemiology and director of the Injury Free Coalition for Kids, as honorary editor, and Dr. Charles Dimaggio, associate professor at CUMC of epidemiology, as associate editor. Drs. Magdalena Cerdá, Katherine Keyes, Thelma Mielenz, and Joyce Pressley serve on the editorial board, which includes over 40 accomplished injury epidemiologists across the world.

For more information, visit the journal’s website:

Faculty release new textbook on a lifecourse approach to mental disorders

Drs. Karestan Koenen, Sasha Rudenstine (a post-doctoral fellow in the department), Ezra Susser, and Sandro Galea are authors of the textbook A Life Course Approach to Mental Disorders, published by Oxford University Press in October. The book reviews the methods and synthesizes the existing knowledge about the life course epidemiology of mental disorders, suggests a comprehensive overview about future directions for both the policy and practice in mental health, and brings together researchers across the disparate disciplines of epidemiology, developmental psychopathology, psychiatric genetics, and basic neuroscience.

Exec MS trainee re-releases textbook

Dr. David S. Younger, a trainee in the executive MS in epidemiology program, a 1981 graduate of the College of Physicians and Surgeons, and an alumnus of the Neurological Institute, was honored at a gathering of the Alumni Organization of Columbia University in November, where he distributed copies of the third edition of his textbook called Motor Disorders, to medical students in the Class of 2017. Dr. Younger is currently at New York University as a practicing neurologist and a trainee in the masters in public health in community and international health program.
Dr. Lovasi awarded Calderone prize
Dr. Gina Lovasi, assistant professor of epidemiology, has been awarded the Frank A. Calderone Junior Faculty Prize, which gives $25,000 to support her research efforts on the project “Neighborhood commercial resources and sudden cardiac arrest.” The prize was established by the Calderone family in 1986 to honor Dr. Calderone’s distinguished career and life-long commitment to the health of the public.

Dr. El-Sadr appointed to NIH advisory board
Dr. Wafaa El-Sadr, professor of epidemiology and director of ICAP, was appointed by Secretary of Health and Human Services Kathleen Sebelius to the Fogarty International Center, the international arm of the NIH. The Fogarty Center supports and facilitates global health research conducted by US and international investigators and builds partnerships between health research institutions in the US and abroad. Fogarty’s advisory board is comprised of researchers, policymakers, and others involved in global health.

Dr. Lovasi recognized by Public Health Association of New York City
The Public Health Association of New York City, one of the largest affiliates of the American Public Health Association, honored Dr. Mary Bassett, associate clinical professor of epidemiology, at its 2013 annual awards ceremony for making outstanding contributions to improving the health of New Yorkers. Dr. Bassett is program director of the African Health Initiative at the Doris Duke Charitable Foundation, an effort that focuses on strengthening health systems in projects underway in Ghana, Mozambique, Rwanda, Tanzania, and Zambia.

Doctoral alumna wins American College of Epidemiology prize
Dr. Bianca Malcolm, MPH ’13, was awarded first prize by the American College of Epidemiology (ACE) in its student prize paper competition for her manuscript “The spatiotemporal characteristics of seasonal influenza in the United States, 1968-2008.” Dr. Stephen Morse, recommended Dr. Malcolm for the award, which was presented at ACE’s annual meeting in Louisville, Kentucky. Dr. Malcolm is currently doing a postdoctoral fellowship at the National Center for Health Statistics, a branch of the CDC, in Hyattsville, Md.

Dr. Martins receives award from President’s Global Innovation Fund
Dr. Silvia Martins, associate professor of epidemiology, was awarded a Columbia President’s Global Innovation Fund Research Award to conduct research into further understanding the relationship between exposure to trauma and urban violence and adolescent comorbid psychopathology in Brazil and Chile. Together with other Mailman faculty, Dr. Martins will establish and solidify collaboration between the department and university departments of psychiatry and preventive medicine in São Paulo, Rio de Janeiro, and Chile.

Dr. Lipkin appointed to NIH committee
Dr. W. Ian Lipkin, John Snow Professor of Epidemiology and director of the Center for Infection and Immunity, has been appointed to the advisory committee to the director of the NIH which makes recommendations concerning program development, resource allocation, NIH administrative regulation and policy, and other aspects of NIH policy.

MPH alumnus wins infectious disease surveillance award
Mr. Don Olson, MPH ’05, has been honored with the International Society for Disease Surveillance’s (ISDS) 2013 first annual Rick Heffernan Award for Public Health Practice. The award was established to honor Dr. Rick Heffernan, an early leader in the field of biosurveillance and founding member and supporter of ISDS who passed away in February 2013. According to ISDS the award is “in recognition of [Don’s] outstanding contributions to the knowledge and practice of biosurveillance. His leadership on the DISTRICT project solidified the ISD ‘community of practice,’ and helped establish the value of a surveillance system that spans jurisdictions.” Mr. Olson said that Dr. Heffernan was an important influence on his own work.

Dr. Cerdá receives Provost award
Dr. Magdalena Cerdá, assistant professor of epidemiology, received funding from the Provost’s Grant Program for Junior Faculty Who Contribute to the Diversity Goals of the University, which provides awards of up to $25,000 each to support new or ongoing research and scholarship. The award will go toward Dr. Cerdá’s research into “Neighborhood interventions to reduce racial/ethnic disparities in alcohol-related homicide.”

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Dr. Koenen releases report on Peace Corps progress in dealing with sexual harassment

Dr. Karestan Koenen is part of a group called First Response Action (FRA), which released a report about the Peace Corps’ progress in implementing a law that is supposed to improve support for volunteers who report sexual assault. Giving the agency a C on a letter grade scale, FRA said that although the Corps has made progress, there are still major gaps and that there has been an increase in victims who reported sexual assault in recent years.


Dr. Morabia speaks at epidemiology symposium

Dr. Alfredo Morabia, professor of epidemiology, was the keynote speaker at the First Cutter Symposium “Celebrating 100 years of epidemiology at the Harvard School of Public Health.” His talk was called “100 years (and more) of epidemiology at Harvard: A methodological beacon for an adventurous discipline,” which offered “a lively historical overview” of epidemiology at Harvard. For the talk, Dr. Morabia pored through library archives and interviewed more than 20 faculty members, former chairs, and others connected to Harvard’s epidemiology department.

For more on the talk, visit: http://hvrd.me/1auyT4V

Dr. Cerdá gives birth to baby girl

Lucía Isabel, daughter of Dr. Magdalena Cerdá and her husband Johnathan Jenkins, was born on September 8, 2013.

Dr. Abrams plays key role on WHO HIV treatment report

Dr. Elaine Abrams, professor of epidemiology and senior research director at ICAP, played a key role in the development of the World Health Organization’s 2013 Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection. The guidelines focus on the continuum of HIV care – including existing recommendations and new developments in research and technology – and highlight the importance of a public health strategy in providing comprehensive and consistent HIV services.
Update for trainees who want to contribute to Epidemiology communications

The skill of communicating science to a broad public is increasingly central to the modern practice of epidemiology. The department has established a communication structure for this purpose and encourages our trainees to get involved.

Two by Two
The department encourages trainees to develop their communication skills by getting involved with Two by Two, our quarterly publication. Two by Two covers news from the department in a journalistic style. Articles students write for Two by Two include features about faculty, alumni, or students in the department; chronicles of department-sponsored events such as a CUESS or a CUEGR; features on collaborations or special initiatives between the department and other groups; or a subject of your choosing, such as your own research or a professional experience. Writing for Two by Two is a great opportunity to sharpen your public health communications skills and get experience with the journalistic form, particularly if you are interested in applying to be a fellow on the 2x2 project.

Responding to popular interest, the department is requesting that any student who would like to write for Two by Two send either a writing sample or a draft of a proposed submission to Ms. Elaine Meyer, associate director of communications (em2642@columbia.edu). The piece should convey your ability to write about a subject for a lay audience; if it is already written, it need not be about public health. If you wish to write for the next Two by Two, please send the sample by January 5.

The 2x2 project
Providing “health beyond the headlines,” the 2x2 project is a department-sponsored site that delivers public health news, analysis, and commentary, and trains future science communicators. The site disseminates epidemiologic and public health science insights to the greater public and engages readers in the health conversation.

If you are interested in writing for the 2x2 project, please visit the site to get familiar with its content, and read the submission guidelines at http://the2x2project.org/submit. Applications for the 2x2 project’s Communication in Health and Epidemiology Fellowship or “CHEF” fellowship will be solicited this winter. Learn more at the2x2project.org/fellowships.

Share your achievements
Many trainees are engaged in important and exciting research that can be shared in Two by Two. If you have news such as publication of a paper, an award, or a talk that you would like to share, please send to Ms. Meyer at em2642@columbia.edu.

Social media
Follow the department on Twitter and Facebook for frequent updates on news, events, and other opportunities, and join LinkedIn to keep in touch with classmates and alumni. You can participate in social media by posting your news on our Facebook wall or joining in live tweeting at department CUESS and CUEGR events using #CUESS and #CUEGR.

Twitter
twitter.com/cuepidemiology

Facebook
facebook.com/cuepidemiology

LinkedIn
linkedin.com/company/cuepidemiology

Follow us and stay up to date with what the department is up to #CUepidemiology

@cuepidemiology
The associate director for human resources and faculty affairs has primary responsibility for all human resources functions. However, particularly when we bring new people into the department as employees or visitors, other members of the chair’s office team play critical roles. SCAs must always confirm funding for any new hire or salary increase. The operations manager must be notified to assign office space and phone number, and the IT support specialist must ensure that a computer is set up, encrypted, and has internet access. In almost all cases, it is wise to contact your SCA as a first step in undertaking HR actions.

1. **Principal investigator/supervisor** checks in with the **department chair** to confirm the availability of space for new hire. **Department chair** alerts **operations manager** to plan for space.

2. **Principal investigator/supervisor** meets with **SCA** and completes Hiring Form (Appendix E), providing information about proposed job title, position type, salary, space, and funding.

3. **SCA** signs off to confirm funding, enters grant and project numbers, appends ARC statement and forwards Hiring Form to **associate director of HR**.

4. **Associate director of HR** iterates with PI/SCA to develop job description and enters it in JAC. **Associate director of HR** prepares hiring documentation for **department administrator (DA)** signature and MSPH HR and Salary Review approval.

5. **Associate director of HR** provides guest access to JAC system to allow **PI/supervisor** and **SCA** to review applicants.

6. **PI/supervisor** reviews applicants, arranges and documents interviews, identifies selectee, and notifies **SCA** and **associate director of HR**.

7. **SCA** works with **IT support** to specify hardware and software purchases as needed.

8. **Associate director of HR** collects interview documentation and selectee information, reconfirms salary and start date, and submits selectee to MSPH HR for approval.

9. Once the selectee is approved, **Associate director of HR** sends formal offer letter and arranges with selectee to complete HR paperwork and schedule orientation.

10. **Associate director of HR** emails **operations manager** and **IT support** to alert them of imminent hire. **Operations manager** and **IT support** finalize arrangements for office space, telephone, domain and Exchange accounts, and hardware/software.
Guimarães MD, McKinnon K, Courous F, Machado CJ, Melo AP, Campos LN, Wainberg ML. Correlates of HIV infection among patients with mental illness in Brazil. AIDS Care. 2013 Sep 2. [Epub ahead of print]


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If you have a study, news story, award, or other milestone you’d like to share in Two by Two, please email Elaine Meyer at em2642@columbia.edu with your submission.