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exchange

the Center for Health *and* Community

at The University of California, San Francisco



From the Director

Happily, most U.S. children are relatively healthy. This is a welcome fact, but at the CHC we remain acutely aware of two other, harder-to-accept facts.

First, too many children find good health elusive; a disproportionate number of whom live in disadvantaged conditions. They wrestle with the full range of health challenges from obesity, asthma, and diabetes through depression, anxiety, and other forms of mental illness.

And, second, during childhood we are set on health trajectories that reverberate throughout life. While a healthy childhood sows the seeds of health and longevity in adulthood, unfortunately, the converse also is true.

Yet focusing our attention on childhood is not enough, since other worrisome risks appear during adolescence and young adulthood. Mental illness, especially depression, may afflict as many as a third of teens and young adults. Even more common are risk-taking behaviors including substance abuse, unprotected sex, and dangerous driving which increase the chances of illness throughout life – and of early death.



This issue presents the work CHC members are doing to address these hard facts. Elissa Epel, Barbara Laraia and I, along with other CHC researchers are testing an intervention to reduce stress and obesity. Sandra Weiss is looking at the first two years of life to gauge what factors predict mental illness or produce resilience that helps people maintain their emotional well being.

In school-age years, my colleagues in the Peers and Wellness study are unearthing new insights about how temperament and environment interact to affect children's health. Numerous CHC researchers, including Michele Mietus-Snyder, June Tester, Irene Yen, and Jeanne Tschann are attacking the growing obesity problem among children.

In adolescence and young adulthood, Charles Irwin and Elizabeth Ozer are testing interventions to help clinicians, families, and adolescents work together to prevent and address mental illness and risk-taking behaviors. Their work benefits from that of people like Bonnie Halpern-Felsher and

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Pritzker Devoted to Children’s Health and Collaboration

As an undergraduate at the University of Wisconsin, Lisa Stone Pritzker found herself working in a hospital with emotionally challenged children and teenagers. “I knew then,” she says, “that children’s health would be part of my life’s work forever.”

After moving to San Francisco in the early 1980s, Pritzker pursued this work by volunteering for a family crisis help line. She also served on a subcommittee for the First Five Commission and along with a team at San Francisco General Hospital helped pass legislation that made it easier for victims of crime in California to get funding for health services. She also serves on the Advisory Board of the Osher Center of Integrative Medicine.

In 2005, Pritzker and her husband John established the John and Lisa Pritzker Family Fund with the goal of using philanthropy to support services for vulnerable children and their families, an issue that they both view as deeply important. The foundation focuses on a few different areas, including maternal health, reducing parent and child stress in school-aged populations, and the unique clinical needs of families exposed to trauma.

This year the foundation provided two substantial grants to the CHC. “Research provides the information

we need to better help the populations we focus on,” says Pritzker. She was especially drawn to the way the CHC coordinates research spanning psychological, social, and biological influences on health – and to the leadership of CHC director Nancy Adler.



Lisa and John Pritzker with Nancy Adler (center)

“Through my work with the First Five strategic planning committee, I learned about the importance of psychological and social factors in children’s development, and the problems caused by disadvantage,” says Pritzker. “John and I like the way Dr. Adler emphasizes this human side of healthcare: who the patient is, rather than just the disease.”

The foundation’s first grant to the CHC supports a mindfulness-based intervention aimed at reducing maternal stress during pregnancy. “The theory is that reducing an expectant mother’s stress level leads to less risk of depression and weight gain during pregnancy, a

more secure connection after, and better feeding practices during the newborn stage,” says Pritzker.

The second grant creates an endowed chair for the director of the CHC. “We were drawn to the CHC because of Dr. Adler’s leadership in the

field of health disparities, which is undisputed and recognized with the very highest honors, including this year’s highly prestigious award by the APA for Distinguished Scientific Applications of Psychology. We hope by endowing this chair we can ensure the vitality and viability of this program...and empower it to test new strategies that

promote health, prevent disease, and facilitate recovery,” she says.

Pritzker believes that a collaborative, multidisciplinary approach is the best way to achieve those goals – and that Adler’s proven ability to bring together diverse faculty makes the CHC an excellent partner in helping her fulfill her vision. ■

Early Development

Throughout life, health is determined not only by the conditions at the time and earlier in life, but by your mothers' health during and beyond pregnancy. Center for Health and Community (CHC) researchers:

- Develop interventions to reduce stress and assess weight gain in pregnant women
- Discover how social disadvantages contribute to infants' and toddlers' psychosocial development.

Elissa Epel, Barbara Laraia and Nancy Adler

Psychologist Elissa Epel and public health nutrition expert Barbara Laraia co-direct the CHC's Center for Obesity and Assessment, Study, and Treatment (COAST). In conjunction with Nancy Adler they recently obtained a five-year grant to establish a new, multi-campus center on the influence of socioeconomic status and stress on obesity. The team also has received funding from the Pritzker Family Fund to develop an intervention to reduce stress and obesity in pregnant women, enable them to quickly return to their pre-pregnancy weight, and positively affect the health of their infants.

"Obesity during pregnancy is associated with negative outcomes for both the mother and her child," says Laraia. Yet approximately 60 percent of pregnant women gain more than 15 pounds during pregnancy, which exceeds the latest Institute of Medicine guidelines. Overweight and obese women are the most likely to exceed the guidelines.

The planned intervention joins mindful eating and stress reduction with standard weight loss strategies, including physical activity and a healthy diet. "The women focus on their bodily sensations, thoughts, and emotions...so they will make

more mindful choices about what and how much to eat," says Epel. The program also helps women self-monitor stressful thoughts to reduce the physiological stress response that Epel's work has shown contributes to overeating and excess visceral fat.

"Reducing stress and weight gain should lead to healthier birth weights and improved mental and cognitive health outcomes for the newborns, since studies indicate a pregnant mother's stress affects a child's temperament and physiology," says Epel.

Sandra Weiss

In one aspect of her research, psychologist Sandra Weiss examines how economically driven family stress affects children's development and mental health. She is following approximately 200 children from a variety of socioeconomic and ethnic groups who were born prematurely and had low birth weight.

"Children with the same biological risk factors may have very different developmental outcomes depending on their initial environmental experience and their unique temperament," says Weiss.

To better understand those factors, Weiss measured the children's neuropsychological development, emotional/behavioral problems, and adaptive behavior at ages one and two. While few deficits appeared at age one, by age two economically disadvantaged children began to show important areas of risk. Cognitively, they were significantly below the norm in language understanding and expression. Moreover, children whose families experienced more economic strain showed a significant lag in communication skills and socialization and were more likely to develop symptoms of autism, anxiety and especially depression.

Certain temperaments, however, appeared to increase children's resilience in the face of disadvantage. "Disadvantaged infants who were more outgoing and expressive – less likely to withdraw and accept situations that they didn't like – had better emotional and behavioral health outcomes," says Weiss. She is now examining the specific effects of temperament through measurement of certain genotypes, as well as hormonal and other physiologic response patterns that may predict how infants react to and manage stress.

Because the study found that the effects of economic disadvantage become more potent over time, "We believe our results have implications for early intervention in the first year of the infant's life," says Weiss. It's really a mandate to help parents and infants cope more effectively with the stressors they face before the effects of economic strain fully take their toll." ■

The Childhood Years

As toddlers enter the school-age years, they confront a larger and more diverse environment with which their native temperaments interact. CHC researchers:

- Uncover new insights about how stress reactivity, social environments, and social hierarchies affect children's mental and physical health
- Test interventions to reduce obesity and encourage healthier eating
- Open new windows of understanding on the effects of the "built environment" on obesity
- Explore how cultural mores and parental relationships affect eating behaviors

The PAWS Study: Nancy Adler, Nicki Bush, Kaja LeWinn



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The Peers and Wellness study (PAWS), funded by the NIMH, has followed over 300 children from kindergarten through fifth grade. The study, led by pediatrician Tom Boyce, now at the University of British Columbia, and CHC Director Nancy Adler, is yielding insights in two areas that affect mental and physical health: stress reactivity—or how individuals respond to stressful situations—and perceived social status.

The PAWS researchers administered a series of social, cognitive, sensory, and emotional tests designed to measure a child’s stress reactivity through physiological measures, such as heart rate and cortisol.

“The richness of the tests and data enabled us to...demonstrate that high reactivity is not always a negative,” says Nicki Bush, PhD, a Robert Wood Johnson Health Foundation (RWJF) Health and Society scholar at UCSF. “Children with high stress reactivity in the context of a low adversity environment actually do better than lower-reactivity peers in terms of school and mental health outcomes. However, those with high reactivity in a high adversity environments do worse than their peers.” Such findings may inform more targeted interventions at school and at home.

The PAWS team also is sifting through a multitude of observational data to place each child in the classroom social hierarchy. One emerging finding is that the children’s perceived place in the hierarchy and parental

SES affect children’s stress reactivity, which in turn can have an impact on both mental and physical health.

Finally, Kaja LeWinn, also an RWJF Health and Society Scholar, is expanding PAWS in a pilot study that uses functional magnetic resonance imaging (fMRI) to examine how the brains of children from different social environments process emotional stimuli and appraise events in their environment.

“This is a first stab at trying to figure out the brain’s role,” says LeWinn. “So far it appears as though more disadvantaged children seem to interpret ambiguous social situations as more threatening.... We are looking to see whether higher activity in the area of the brain involved in fear and vigilance (the amygdala) underlies this relationship. It seems that higher activity in the amygdala implies higher risk of anxiety disorders. It’s possible that by identifying predictors of this heightened response in early life, we might be able to intervene during a critical window of development.”

**Children and Obesity:
Michele Mietus-Snyder,
June Tester, Irene Yen,
Jeanne Tschann**

Obesity is among the most pressing childhood health problems, not least because it is associated with many chronic diseases that shorten lifespan and impinge on quality of life.

Michele Mietus-Snyder is a preventive pediatric cardiologist who is conducting an interventional

study with inner city, predominantly minority children (ages 8-12), referred for weight management. Her study – housed at the CHC’s COAST and funded by the American Heart Association – evaluates the role of stress in these children’s disproportionate burden of both obesity and its comorbidities.

During an initial evaluation, each of the 64 children evaluated presented with prevalent cardiovascular risk factors (insulin resistance, dyslipidemia, and inflammation), as well as low quality of life and psychosocial health, high perceived stress, and extremely poor diets. These children and their families were invited to engage in an intensive two month lifestyle intervention, with weekly meetings that included either mindfulness-based therapy or supervised exercise for stress reduction, in addition to nutrition and activity counseling.

Initial indications are that in both groups the children’s weight stabilizes and their quality-of-life and anxiety scores improve. In the mindfulness group, there is also evidence of reduced inflammation and improved eating behaviors. Nevertheless, nutritional quality remains quite poor, and there has been no improvement in insulin resistance.

“We believe the connection between psychosocial stress and obesity is underestimated in children,” says Mietus-Snyder. “While addressing this may begin to bridge the extremely wide chasm between knowledge and behavioral change,



barriers to optimal nutrition and metabolic health still loom large.” She continues to follow these children and is exploring future studies to evaluate the potential benefits of adding nutritional supplements to mindfulness-based lifestyle therapy.

Pediatrician June Tester’s research addresses the paucity of nutritious options for many inner city children. After her fellowship as an RWJF Health and Society Scholar at UCSF, Tester conducted a pilot study that explored using the mobile food vendors popular in low-income neighborhoods to increase children’s access to healthy food. Her current RWJF grant, involving CHC faculty members Laraia and Irene Yen, builds on this work.

“We want to use the attraction of mobile vendors to give kids healthier food options,” says Tester, who is at the Healthy Hearts clinic at Children’s Hospital in Oakland, a clinic for pediatric weight management.

She studied sales when an ice-cream truck vendor near an elementary school added healthy snacks to his menu. Children bought the healthy items, which included low-fat cheese sticks, water, and low-fat, low-sugar yogurt. A follow-up study will expand this intervention to three trucks in order to look at the effect of price manipulation for healthy items.

Working with a public health lawyer, Tester also is looking at options for healthy vending policies. “We are looking for ways that cities can create incentives for vendors to do the right thing,” she says.

Social epidemiologist, Irene Yen’s collaboration with the Kaiser Permanente Division of Research complements the work she and Tester are doing with vendors. The Kaiser study follows 444 girls (who began the study at age 7) in four California counties, to determine the role of the environment on breast development and breast cancer later in life.

We know that overweight and obese women are at higher risk for certain types of breast cancer,” says Yen. “And if girls are overweight or obese when they’re young, they’re more likely to be overweight or obese when they’re older and more likely to experience early puberty, another risk factor.”

Yen’s study, funded by the California Breast Cancer Research Program looks at the effect of “the built environment” on diet, physical activity, and body mass index (or growth). “Where are the food stores?” she asks. “The fast food joints in relation to schools and recreational facilities? What’s accessible?”

Using a geographic information system enriched with additional data, Yen has assessed, among other things, the ratio of “bad” food (fast food, convenience food) to “good” food (nearby supermarkets). Initial findings indicate the built environment had a small effect on the girls’ eating behaviors, though not as strong as one might suspect.

“But it makes a big difference what your geographic analysis is,” says Yen, who is considering a myriad of variables, including the many different ways to designate “neighborhood.”

“We’re still refining this—trying to validate a methodology that links neighborhoods with caloric intake—because we believe this is an important public health challenge,” says Yen.

Social psychologist Jeanne Tschann is also examining ways to prevent obesity in children, in her case by looking at how parent-child relationships around eating behaviors affects obesity in Latino children. She and her research team are gathering data for a longitudinal study, which follows a group of 8-10 year-olds and their parents for two years. The study builds on a body of work that has delved deeply into how parental and family relationships

affect health behaviors, particularly among Latinos.

“There is very little research on Latino families,” says Tschann. “But what we’ve seen generally from samples of European-American mothers and children is that controlling access to food tends to backfire. Some investigators have speculated that giving children a choice of healthy foods and then allowing them to eat what they want might promote healthier eating habits, but this possibility hasn’t been examined yet.” In her study, Tschann is measuring how a range of authoritarian and authoritative feeding practices affects the eating behaviors of the children. ■

Adolescence

As children enter adolescence, decisions about health behaviors can occur in high-pressure social environments and have both short and long-term health consequences. CHC researchers:

- Increase the self-efficacy of physicians, teens, and families for addressing risk-taking behaviors
- Discover how teens think about risk to shape more effective prevention measures
- Explore how interpersonal relationships and culture affect risk-taking

Charles Irwin and Elizabeth Ozer

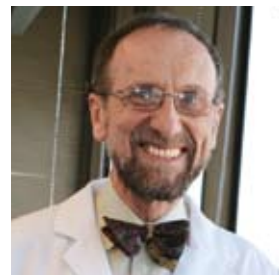
Pediatrician Charles Irwin and psychologist Elizabeth Ozer from the Division of Adolescent Medicine have devised ways for primary care providers to more frequently and effectively screen teens about risk-taking behaviors, because far too few physicians conduct these screenings – and the screenings make a difference.

Irwin and Ozer followed physician interactions with 1,000 teens, ages

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Jeanne Tschann



Charles Irwin



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14-16, over a two-year period. “We developed algorithms for what physicians should ask, and conducted in-services to help them deliver the screenings,” says Irwin. “We also developed forms that patients can use in waiting rooms and online.” When teens fit a certain risk profile, the physicians sent them for a brief visit with a health educator.

The intervention increased the screening rate from 40-45% at baseline to well above 90%. It also increased physicians’ confidence – or self-efficacy – in their ability to provide screenings. In turn, the increased screening and education gave teens more self-efficacy about everything from using a condom to putting on a seat belt.

“In our intervention group, preliminary follow-up data found increased helmet and seat belt use, and delayed onset of sexual activity among younger teens,” says Ozer. “There were also positive effects on teen use of substances. It’s a promising start.”

And because mental health is often directly linked to teen risk-taking, Ozer – in her role as director of research for the Young Adult and Family Center in Child and Adolescent Psychology – is working with family therapy clinicians to evaluate how the center’s family therapy program increases the self-efficacy of families, so they can work together to improve adolescent behavioral health.

Unfortunately, in many other settings, teen mental health tends to be under-recognized. Ozer and

colleagues from the Young Adult and Family Center found 25% of California teens reported “emotional distress” over the last three months, but only a third report being screened for this problem by their providers. “This means a lot of kids are being missed,” says Ozer.

Bonnie Halpern-Felsher

Developmental psychologist Bonnie Halpern-Felsher’s research reveals how adolescents’ perceptions of risk and benefit influence their decisions to engage in smoking and risky sexual behavior. Many of her findings have emerged from two large studies – funded by California’s Tobacco-Related Disease Program and NIH/NICHHD – that followed teens from ninth grade through young adulthood. The studies have important implications for how to frame prevention messages.

For example, smoking prevention messages have traditionally focused on long-term concerns like the connection between smoking and cancer. “Yet we found perceptions of short-term risk (e.g., getting in trouble or smelling bad) are as significant to teens as long-term risk,” says Halpern-Felsher.

Perceptions of short-term benefits like looking cool, looking older, and reducing stress also strongly influence teen smoking. Halpern-Felsher notes that the failure of prevention programs to acknowledge the benefits of smoking sacrifice opportunities to counter those perceptions.

She similarly determined how risk perceptions predict the onset of

sexual activity – and whether those perceptions change after initial sexual experiences.

“If teens have sex and don’t get pregnant or an STD, they tend to perceive lower chance of these risks and possibly higher benefits associated with sex,” says Halpern-Felsher. “That’s why we should discuss more than just the health outcomes associated with sex. The short-term negatives also are social: sex can complicate relationships and cause guilt, so we should be talking about these outcomes as well.”

Jeanne Tschann

Social psychologist Jeanne Tschann approaches adolescent health decision-making from yet another angle: how do interpersonal relationships and cultural mores, particularly among Latino populations, affect individual health behaviors?

In studies funded by the Maternal and Child Health Bureau, Tschann followed large cohorts of Latino teens. One study found that parental conflict appears to be closely linked with adolescent dating violence.

“We measured several aspects of parental conflict and found that more frequent, more intense and especially less resolved conflict were important,” says Tschann. When parental conflict went unresolved, it appeared to leave teens without the skills to resolve their own conflicts, which may be why they were involved in more violence, both as victims and perpetrators.

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Policy

Research informs policies that increase access to care, lead to public education efforts, and, ultimately improve the health of children and adolescents. CHC researchers:

- Evaluate the efficacy of government-sponsored health insurance programs
- Develop new models to understand the causes of oral health problems
- Research solutions to improve the health of special needs children
- Devise multi-level solutions to attack the complex roots of health problems

Dana Hughes

Public health expert Dana Hughes is often called on to assess the efficacy of health coverage programs, including California's Healthy Kids and Healthy Families. Hughes has found the programs do their jobs effectively, yet both programs have seen their budgets slashed recently as the state tries to close its massive budget gap. Consequently, even as the federal government creates opportunities to expand eligibility thresholds, California is reducing coverage for children.

"California gets between one and two federal dollars for every state dollar it spends, so we are leaving a huge number of federal dollars on table," says Hughes. "When we don't take advantage of every opportunity to draw down federal dollars, children lose and the state loses."

She argues that such an approach is painfully shortsighted, because healthcare needs don't go away; nor do costs, they just get hidden in a kind of elaborate shell game. "The data show that taxpayers either pay for it up front, where it's less expensive, or pay for it later on," says Hughes. She notes that the budget cuts have been particularly devastating for dental care, an area that experts increasingly believe is an important piece of the healthcare picture.

Paul Newacheck

Paul Newacheck shares Hughes' concerns about dental care. Newacheck's

work focuses on health care access and delivery for vulnerable children, and the epidemiology of childhood illness.

In an NIH-funded project with colleagues including CHC member Jane Weintraub from the UCSF School of Dentistry, Newacheck helped create the first model to explain the broad-based determinants of children's oral health. The study results recently appeared in *Pediatrics*.

We examined characteristics of children, their families, their neighborhoods, and state level variables like fluoridation policies to discern their influences on oral health outcomes," he says.

Newacheck also has been working for over a decade with the Maternal and Child Health Bureau to create national surveys that monitor children's health status and provide information and data that government and advocacy groups need to improve services for children.

"Used effectively, information can empower advocates to strengthen the safety net for vulnerable populations," says Newacheck.

Claire Brindis

Claire Brindis, who directs the Philip R. Lee Institute for Health Policy Studies, believes that a crucial key to translating research into effective health care policy is to recognize that research silos and narrow solutions rarely get at the complex roots of most health problems.

Brindis's work reflects this belief. For example, in an effort to prevent mental health problems and associated risk-taking in adolescence, Brindis has helped identify successful early intervention models used across the country. "Mental health issues are the turnkey for many adolescent risk behaviors, which is why we need early intervention," says Brindis. "We looked at a kaleidoscope of

clinical interventions, as well as how to pay for and sustain them."

Early intervention, however, is only one consideration. Brindis has demonstrated that a variety of approaches, which span childhood and adolescence, enable health-related policies to reach more people. She points to the public health success of seat belt use as an example. "We reduced dying in car accidents through environmental policies that were multi-directed (laws, education campaigns, changing insurer practices), and the policies existed because we used social and behavioral sciences to create effective tools," says Brindis.

She is now bringing that approach to campaigns to reduce teen pregnancies. The campaigns range from "Hot Spot" reports identifying areas with higher-than-average teen births to a program that engages pregnant teens in conducting community research aimed at developing teen-friendly strategies aimed at reducing the high rates of teenage pregnancy. Her work with Paula Braveman and other colleagues led to the making of an award-winning film aimed at at-risk Latina teens.

Yet Brindis points out that even award-winning films are meaningless unless they achieve the end goal. "There's a big difference between dissemination and diffusion and we are beginning to develop a lot more expertise in the science of implementation," she says. "How do we use evidence to drive programs and policy or convince practitioners to change their behaviors? Social, behavioral, and policy scientists must take an active partnership role with clinicians and other researchers to help close those gaps." ■



Claire Brindis



Paul Newacheck

From the Director continued from page 1

Jeanne Tschann, whose insights into how teens think help shape more effective prevention messages.

Of course, as social scientists we understand that the larger society, particularly policymakers, have an enormous impact on health. CHC members like Dana Hughes, Paul Newacheck, and Claire Brindis are playing an instrumental role at the local, state, and federal levels, using their research skills to inform a host of policy efforts that affect child and adolescent health.

Finally, this is an unusual newsletter in that we also highlight the important contribution of a couple whose generosity enables us to expand our work in this area. John and Lisa Pritzker understand the importance of assuring healthy childhoods and have focused their philanthropy

in this area. The profile of Lisa Pritzker shows how her own interest and work intersect with the vision and work of the CHC.

Together — as researchers, advocates, policy analysts, and philanthropists — we can improve the health and well being of children and sow the seeds for long and healthier lives. ■

Nancy Adler

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In another recent study, this one funded by NIH/NIAID, Tschann looked at how relative personal resources (e.g., emotional investment in the relationship), and culturally held values affected condom use among nearly 1,000 adolescent teens in sexual relationships.

“As we explored these questions, we identified the strategies Latino adolescents employ to use or avoid using condoms, and found that direct verbal and nonverbal communication about condom use results in teens using condoms more frequently,” says Tschann. The results of this research can help refine STD/HIV interventions that teach safer sex negotiation skills, and tailor culturally appropriate interventions for Latino youth. ■

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