

Young and Transgender

As a child, Noah Wilson thought gender meant boy or girl, the end. But when they were both 14, Noah's best friend, Rory, came out as nonbinary, a person who feels neither squarely male nor female.

Noah—who had always assumed he was female, since that's what it says on his birth certificate—went home and Googled “nonbinary.” (Noah and Rory are identified by pseudonyms in this story.) He was just trying to be a supportive friend but soon realized that something else was going on. The idea that people could question their gender resonated. A lot.

Maybe I'm not a girl, he remembers thinking. Worried about what his parents would think, he kept quiet and spent months wrestling internally with his gender identity.

“I was imagining scenarios where you guys kicked me out,” Noah tells his mom and dad as they sit together on their living room sofas. “It has happened to other trans kids with worse parents.”

Noah, who graduated from high school in June, has been out to his parents—who have been very supportive—for almost two years. Their support puts Noah in a novel group: For the first time, a cohort of several thousand youths across the country are transitioning from male to female or female to male with the

SEE TRANSGENDER ON PAGE 4

CARING FOR KIDS
MAKING
THE TRANSITION

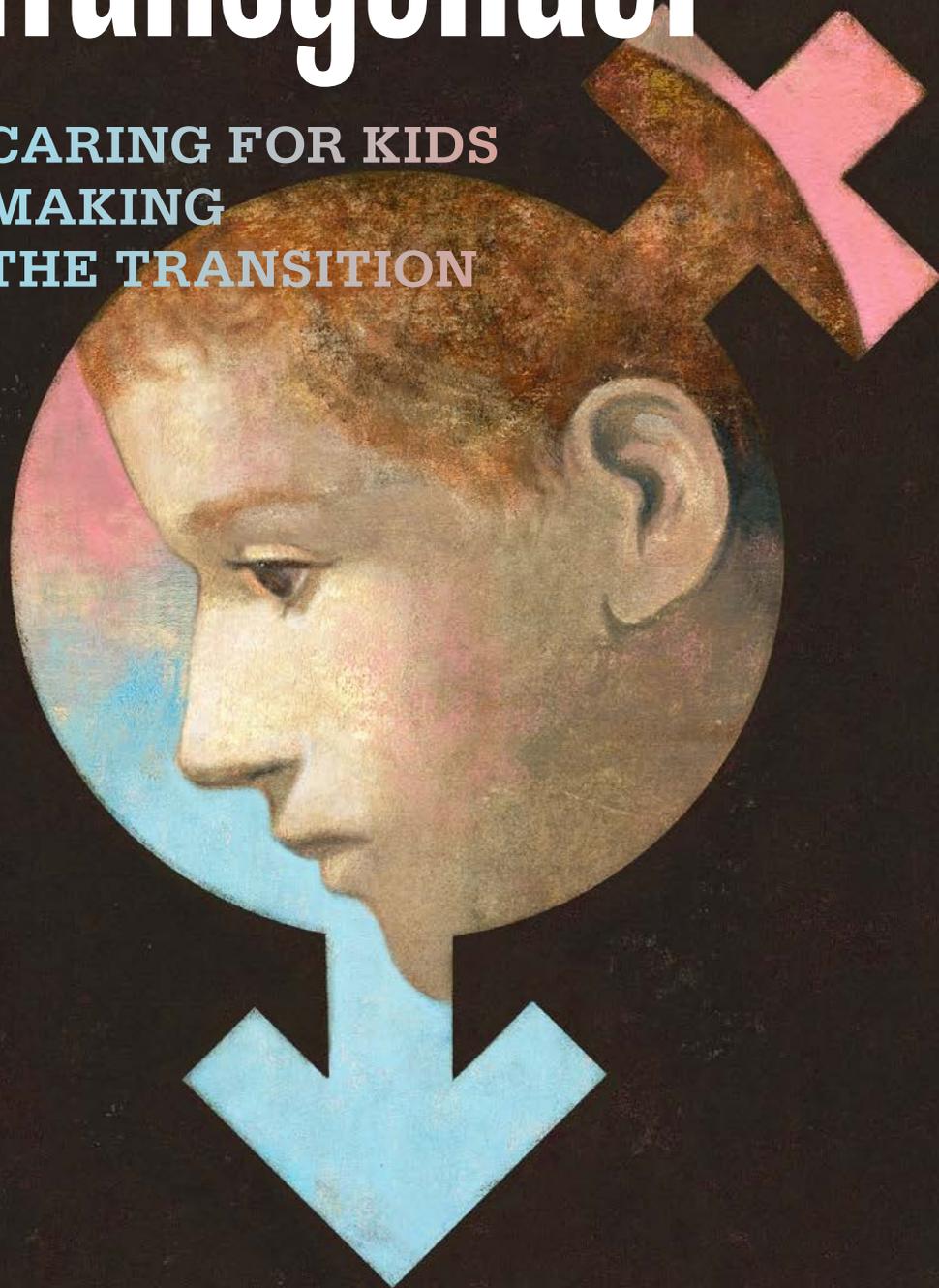


ILLUSTRATION: GERARD DUBOIS

COMMUNITY MATTERS

The mental health of our youth has become an issue of growing national concern, with many calling for new approaches to address the unmet needs of teens. In our own community, families, school officials and health care providers have made the mental health of our youth a top priority and are committed to making substantive changes in both prevention and care. Stanford Medicine is leading the effort, working to improve mental health care for young people by filling in gaps along the spectrum from community interventions to hospitalization.

Our approach

With leadership from the Department of Psychiatry and Behavioral Sciences and Lucile Packard Children's Hospital Stanford, we've developed a multifaceted approach to meet

this challenge in ways that we believe we are uniquely positioned, qualified and obligated to do. Our goals are to offer appropriate intervention at the right time, to prevent hospitalization whenever possible and to ensure that

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Christopher Dawes
President and CEO,
Lucile Packard
Children's Hospital
Stanford

Lloyd Minor, MD
Dean, Stanford
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David Entwistle
President and CEO,
Stanford
Health Care

1 STANFORD MEDICINE NEWS

▶ HealthDay

“One of the challenges in this country is that we have not adequately appreciated the full social impact of dementia. It’s not just the patient who is diagnosed with dementia—it’s the family.”

—NICK BOTT, postdoctoral research fellow in medicine, regarding his study that found that wives and daughters shoulder the burden of care for family members with Alzheimer’s. *May 9*

▶ The Washington Post

“Sending kids to school at 7 a.m. is the equivalent of sending an adult to work at 4 in the morning.”

—WILLIAM DEMENT, MD, PhD, professor of psychiatry and behavioral sciences, on the challenges of being a teen, including sleep deprivation. *May 15*

▶ NBC NEWS

“The error depends on the type of activity you’re tracking. For activities like walking and sitting, the results are more accurate than for more intense pursuits, like spinning and running. The point is, you’re not burning as much as you think you are.”

—ANNA SHCHERBINA, lead author of a new study that found fitness trackers aren’t always accurate in counting calories. *May 24*

▶ STATNEWS

“No one says, ‘Why can’t we just live together?’”

—DAVID SCHNEIDER, PhD, professor of microbiology and immunology, on learning to adapt to microbes and to fight infections without the use of antibiotics. *May 18*

▶ abc7 NEWS

“Something bad is happening, and I may be able to help. Yeah, there is some intimidation in that, but if you can overcome that fear and jump in and help, you may be able to save someone’s life.”

—Trauma surgeon DAVID SPAIN, MD, at a recent mass casualty training by Stanford Medicine experts for students at Sequoia High School in Redwood City. *May 25*

A 3D Look Inside the Brain

New software shows a patient’s own anatomy

Having undergone two aneurysm surgeries, Sandi Rodoni thought she understood everything about the procedure. But when it came time for her third surgery, the Watsonville resident was treated to a virtual reality trip inside her own brain.

Stanford Medicine is using a new software system that combines imaging from MRIs, CTs and angiograms to create a three-dimensional model that physicians and patients can see and manipulate—just like a virtual reality (VR) game.

After donning a headset connected to the VR system, Rodoni could see the ballooning blood vessel, as well as the spot where her neurosurgeon, Gary Steinberg, MD, PhD, would place a clip to repair it. “I thought I knew it all until I saw this,” she said. “I felt better knowing it was so clear to the doctor.”

Created by Colorado startup Surgical Theater, the VR system is helping train residents, assist surgeons in planning upcoming operations, and educate patients. It also helps surgeons in the operating room, guiding them in a three-dimensional space.

For the residents, class is held in a room in the hospital basement. Under low lighting and surrounded by three massive screens, the residents settle into reclining chairs complete with drink holders—all promising a comfortable ride inside the human skull.

Once they don headsets, an instructor—who shows up as an avatar in a white coat—can lead them inside the brain of a patient. The system allows instructors to highlight different components of the brain, such as arteries to show an aneurysm, bones to show skull deformities or tissue to show a tumor. Instructors can also progress, as avatars, through the steps for removing a tumor or fixing an aneurysm, starting outside the skull.

Planning for surgery

Surgeons also make their way down to the Neurosurgical Simulation Lab, to practice an upcoming operation. Because they’re practicing on images from the actual patient, rather than a generic brain, they can map out the surgery ahead of time. “It’s a window into the brain—and a window into the brain of the particular patient we’re going to operate on,” said Anand Veeravagu, MD, an assistant professor of neurosurgery and the head of the Stanford Neurosurgical Simulation Lab.

The three-dimensional aspect of the imagery eases surgeons’ planning and improves the accuracy of the surgery, with the aim of producing safer procedures. “We can plan out how we can approach a tumor and avoid critical areas like the motor cortex

or the sensory areas,” said Steinberg, professor and chair of neurosurgery. “Before, we didn’t have the ability to reconstruct it in three dimensions; we’d have to do it in our minds. This way it’s a three-dimensional rendering.”

Steinberg noted that in Rodoni’s case, an artery was attached to the top of the aneurysm. “You couldn’t see it on conventional imaging,” he said. “Had I not known about it, it could have been a real disaster.”

To show patients what’s going on inside their skulls, Malie Collins, MS, senior program lead for the VR program, rolls a mobile unit, complete with headset, into an examination or hospital room. Seeing the problem in three dimensions is reassuring, she said, especially for young patients or those who don’t understand English well. She can also download the imagery onto a thumb drive and give it to the patient as a souvenir.

An accurate image

“Traditionally, doctors can show their patient a standard physical model of the brain or of the spine and say, ‘On this model, imagine your tumor is located here,’” she said. “But with VR, we are able to immerse patients in their own anatomy, so they can very clearly get a sense of what’s going on.”

Stanford Medicine doctors are using the VR technology currently for the brain and spinal cord because these organs are stable and lend themselves to imagery—unlike other body parts, which move with blood flow and breathing. Collins said that the technology may soon be available for the rest of the body.

Surgeons typically use video feeds while they are operating, but the new VR technology adds a three-dimensional view, which they can superimpose on the real-time video. “It has much, much more detail,” Steinberg said. For Rodoni’s surgery, “I had the 3-D rendering of her anatomy and could match that up with the surgical microscopic view, something I can’t do with any other technology.”

Veeravagu said some patients have chosen Stanford over other nearby hospitals solely because of the VR technology. “This software really helps them understand what it is they are about to undergo,” he said. “Seeing it on the screen, in 3-D, really helps put a patient’s mind at ease.”

It certainly did for Rodoni. Knowing where her aneurysm lay, and how Steinberg would repair it, helped calm her as she faced her third brain surgery. “I knew that Dr. Steinberg would be able to see the same thing I saw and he wasn’t going to run into any surprises,” she said. Rodoni’s surgery went smoothly, and she was discharged from the hospital within two days, her aneurysm gone. [SMU](#)

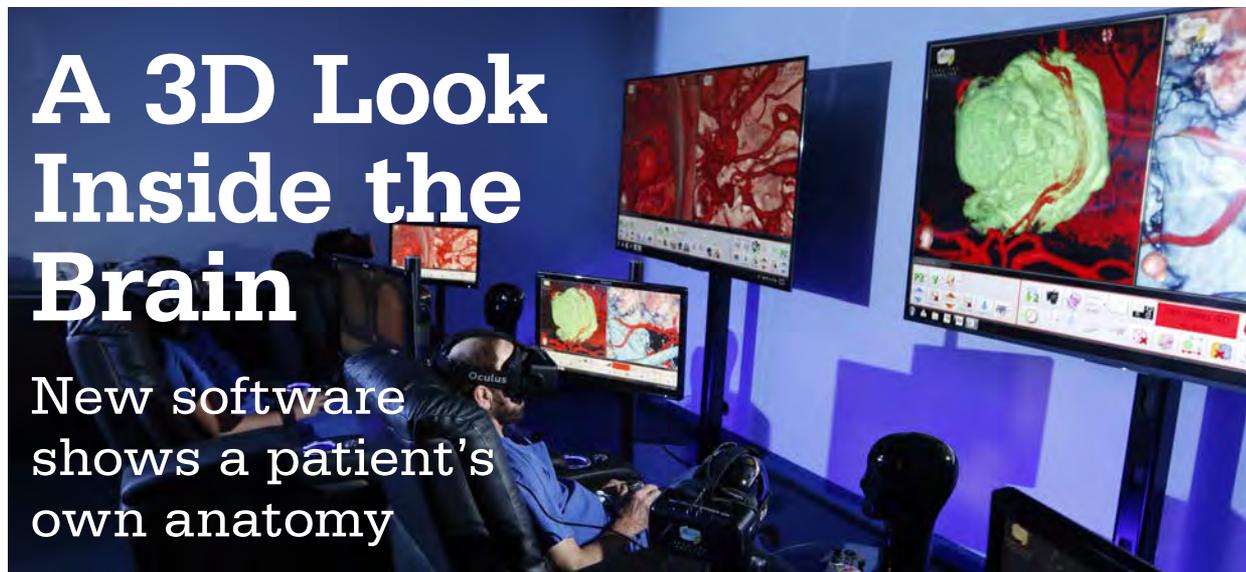


PHOTO: PAUL SAKUMA



Expanded Emergency Department

New ED will offer privacy, access to nature

No one wants to go to the emergency department, but when patients end up at Stanford Hospital's new ED, they'll find a comforting atmosphere, with plenty of space, access to nature, and room for supportive family and friends.

The new Laura and Marc Andreessen Emergency Department will be "private, spacious and quieter," said Sam Shen, MD, clinical associate professor of emergency medicine. "It'll be a more pleasant environment for patients and caregivers, which means better care and more relaxed patients."

With emergency department visits at Stanford Medicine growing by 5 to 8 percent a year, the team designing the new ED knew it'd have to be much larger. But the nurses, physicians, hospital administrators and architects on the design team also took the opportunity to create an efficient layout, along with an emotionally supportive environment.

Streamlined care

The new layout will have separate zones for patients with different need levels, and these zones are organized according to the way patients move through the department.

"We have an intentional, thoughtful layout with regard to activity and flow," said Alison Kerr, RN, MSN, vice president of neuroscience, psychiatry and the emergency department. She likened the new department's design to that of a well-organized marathon, in which the runners are grouped together according to their speed.

As soon as patients walk in the front door, adjacent to the new hospital's main entrance on Pasteur Drive, a nurse will evaluate them, then send them to the appropriate space. Patients with less serious problems will remain close to the entrance, in the fast-track area or the vertical zone, where they can sit in chairs.

Fast-track patients may require a splint for a broken finger or antibiotics for an infection, for example. The goal is to have them out of the emergency department in 90 minutes or less—opening up space for other patients.

"There are people who are appropriate to be treated in a recliner," Shen said. "We felt that it didn't make sense to have a patient sit in a chair waiting in the lobby when they could be in a recliner receiving their care in the vertical area if they do not need a traditional ED bed."

Any patient who comes in the front door with a more serious problem—a heart attack or a head injury, say—will be sent to a bed in the back of the department. Patients who arrive via ambulance will enter through the back entrance, off Welch Road, straight into the trauma zone. And patients who fly in on Stanford Life Flight will land on the roof, directly above the trauma center, and take a quick elevator ride down.

Kid zones

Pediatric patients will be treated in their own area, which will be decorated with interactive art in child-oriented themes. "The space is designed for children, with age-appropriate distractions to make the situation less scary," Shen said. Pediatric trauma patients will receive care in a separate area inside the trauma center.

The new emergency department will also include a pharmacy so that patients can receive medication without having to leave the area. The hospital's imaging labs, for X-ray and CT scans, will be located adjacent to the ED so that emer-

gency patients can access them quickly.

The attention to patients' emotional health starts in the waiting areas. The new ED will have separate rooms for children and adults, both of which will look out onto a garden. "It's going to be a really beautiful space, with natural light and access to nature," said Jennifer Romer, RN, BSN, senior project manager of medical planning.

Patients who require beds will have private rooms, with extra seats and entertainment systems. "They're all spacious, private rooms, with accommodations for family members who come with the patients," Romer said.

Nature fix

For staff, there will be a conference room, more locker space and bathrooms with showers. And the grove of trees outside the ED, the Peery Family Garden, will allow clinicians to take a break in nature. "In an emergency room, you can't close the front door," Kerr said. "This will be a space where our medical staff can get out and clear their heads."

As the only Level I trauma center between San Francisco and San Jose, the new ED is also designed to accommodate a surge of patients in case of a large-scale disaster.

The current emergency department was designed to treat 40,000 patients a year; Stanford Medicine is now seeing nearly 80,000. That number continues to grow as Stanford Medicine expands, and the population of the Bay Area grows and ages.

The new hospital, which will include 368 additional beds, will be a "green" building, using 35 percent less energy than the current hospital and a reclaimed water system. It will also feature more than four acres of garden space for patients and visitors. Construction is scheduled to be completed in 2018. [SMU](#)

backing of their parents. This is probably good for their mental health, but even the most welcoming families face big challenges as they navigate life in the vanguard of transgender childhood. That's why a growing group of physicians, social workers, family therapists, schoolteachers and scientists are learning how to help.

"These kids really feel they've been born into the wrong body, and it causes a lot of distress," said pediatric endocrinologist Tandy Aye, MD, who founded the Pediatric and Adolescent Gender Clinic at Stanford Children's Health in 2015. "They've been thinking about this for so long and trying to voice it, and often, people have been dismissive."

Aye, an associate professor of pediatrics at the School of Medicine, first worked with transgender teens as part of her research on the effect of sex hormones on brain development. Families of her research subjects asked if she could provide medical care for their kids, so Aye began seeing patients and established the new clinic. Now one of more than 30 such programs across the country, it helps with the medical and social aspects of gender transition and connects transgender children and their families to community resources, including well-informed primary care physicians.

Weighing treatment

As drastic as a gender transition may seem, for children who are sure they're in the wrong-gender body the consequences of doing nothing are worse, Aye said.

"If a child has been gender-nonconforming for a long time and is not allowed to transition, going through the wrong puberty can be psychologically devastating," she said. Helping transgender adolescents go through the medical aspects of transition carries a different meaning for Aye than treating kids with medical illnesses. "As you treat transgender teens with hormones, you're affirming who they are," she said.

But early in the process, ambivalence is common, said Amy Valentine, the social worker at the Stanford Children's Health gender clinic. She's part of a team of about 15 clinicians who are currently serving about 50 patients.

"We want Stanford Children's Health to be a safe haven for patients and families who are working through gender-identity issues," said Dennis Lund, MD, chief medical officer of Lucile Packard Children's Hospital and Stanford Children's Health. "It's our job to take care of patients in need."

Before families visit the clinic, Valentine gets a comprehensive history by phone. For instance, she asks if the child has socially transitioned, which is the first step in living as their identified gender by using a gender-congruent name, switching pro-

nouns, and changing their hair and clothing. Therapists look for three characteristics to distinguish transgender youth: They are insistent, persistent and consistent in their gender-identity expression.

Valentine wants to know how the parents interpret what's happening, too.

"Kids really want to be understood by their parents," she said. "They want to feel loved and accepted for who they are, and they need help from their parents to move forward. And parents come in a lot of times in disbelief, saying, 'How did this happen all of a sudden?'"

Facing limited resources, discrimination

Today, medical support for transgender children is uneven across the country. While most urban areas now have well-established clinics, parents and children in rural locations may face long trips to access medical care and endure more prejudice in their communities.

At a minimum, all doctors should know how to have a respectful and

productive initial conversation with patients who are questioning their gender identity, Aye said. For pediatricians, that means asking children what they're feeling, what gender they identify as, and whether they have a preferred name and pronoun, she said. "Allow that conversation to begin and don't be dismissive. Let the child express it and listen in a welcoming way."

Transgender individuals also are likely to face discrimination. *Injustice at Every Turn*, the 2011 report on the findings of the National Transgender Discrimination Survey, found that of the 6,450 U.S. transgender adults who responded, 63 percent had experienced at least one serious act of discrimination.

Making the journey

Noah has been fortunate. Not only has he received good family and medical support, but his teachers and friends have also been accepting. In the



PHOTO: MARK HANLON

Dani, 16, started his transition by cutting his hair and wearing masculine clothing. He later legally changed his name and began testosterone treatment. With each step, his parents say, he grows happier and more sure of himself. See his story at <https://youtu.be/80s0-2bVn2U>.

fall, he will attend a college known to welcome transgender students, where he expects to be able to be open about his identity, a far cry from what earlier generations of transgender college students experienced.

After his full consultation at Stanford, he began receiving a puberty blocker, Lupron, which prevented him from going through further maturation as a female.

"If they identify really young as transgender, kids can receive a pubertal blocker as soon as any signs of puberty start," said Aye. "If they suppress puberty and later change their minds, they can stop taking Lupron and continue to develop their own biological puberty."

For those who transition, avoiding the wrong puberty means they will look more like members of their identified gender as adults. With the medication, trans boys won't develop breasts, for example, and trans girls won't grow as tall or develop deep voices or facial hair.

Around age 16, transgender teens can begin receiving estrogen (for those transitioning to female) or testosterone (if they're transitioning to male). "They get cross-sex hormones so that they're going through one puberty and it's appropriate," Aye said. The patient's levels of psychological readiness and family support are always important considerations in starting cross-sex hormones, she added.

Noah started taking testosterone in November 2016. His voice has already become deeper, which he likes. With continued use, he'll grow a beard and develop more malelike body composition.

Support from family

Looking back on the past three years, Noah's family has some advice for others in their shoes.

"For parents, you need to educate yourself as quickly as possible, and you need to process your own feelings away from your kid," his mother said. Your child needs your support, no matter what worries you have along the way, she added.

"If you know that your parents are probably going to be accepting, come out sooner," Noah said. He also found talking to a therapist to be helpful. "I felt like I had to get everything exactly figured out. And yet I definitely felt relief once everyone started calling me Noah; it was a lot better." [▶▶](#)

"We want Stanford Children's Health to be a safe haven for patients and families who are working through gender-identity issues."

CDC on Youth Suicide

Psychiatrist discusses report on Santa Clara County



Earlier this year, the federal Centers for Disease Control and Prevention released a report on risk factors for suicide among youth in Santa Clara County. The report, which was requested by members of the Palo Alto community in response to youth suicide clusters in 2009 and 2014, reviewed suicidal behaviors in young people in the county, as well as the community response. Steven Adelsheim, MD, clinical professor of psychiatry and behavioral sciences at the School of Medicine and a child and adolescent psychiatrist at Lucile Packard Children's Hospital Stanford, has been involved in efforts to improve mental health care for local youth.



Steven Adelsheim, MD

PHOTO: STEVE FISCH

What did the report say about suicide rates and precipitating circumstances behind youth suicides in Santa Clara County?

The report found that youth suicide rates for residents of Santa Clara County have remained really stable, with no significant difference over time since 2003. When you look across the board at the county's 10- to 24-year-olds, the annual suicide rate is 5.4 per 100,000 people, which is very similar to the California rate of 5.3 per 100,000. The national suicide rate among this age group is higher than rates for our county and state, at about 8 per 100,000.

In the county, two-thirds of suicides occurred among young people aged 20 to 24, and three-fourths were male. Their ethnicity distribution was close to that of the county as a whole. The cities of Palo Alto and Morgan Hill did have higher rates than the county as a whole: 14.1 suicide deaths per 100,000 among Palo Alto residents and 12.7 per 100,000 among Morgan Hill residents.

A key finding of the report was that many people who died by suicide had faced a recent crisis or mental health issue. About a third were currently being treated for mental illness, and 48 percent had current mental health problems, including depression, substance abuse and alcohol dependence. Fifty-two percent had had a recent life crisis, such as a breakup with a boyfriend or girlfriend, problems at school or a significant argument.

To what extent do you think the findings support or refute assumptions people may have made about youth suicides in

Santa Clara County?

Locally, before the report came out, there was a sense that losses of young people in the Palo Alto area were much larger compared with the county as a whole. It's true that the rate of youth suicides within Palo Alto was found to be higher than for young people elsewhere in the county, and there may be some ongoing stressors among Palo Alto youth, such as academic stress, that the community is working hard to address. But the findings also make clear that no single factor explains suicide-related deaths.

The report reflects well on efforts the Palo Alto community has been making to improve all aspects of mental health among young people. Strong partnerships have been formed between the school district, the city, parents, teens and mental health care providers, including our team at Stanford. All these partners deserve credit because their efforts are making a difference.

One area of focus for the CDC report was the quality of news reporting about Santa Clara County's youth suicides. What does the media need to improve?

Responsible news reporting is an important element of reducing suicide contagion among youth, but the CDC report shows that local and national coverage of youth suicides was fairly uneven in quality. The CDC documented problems of sensationalistic terms and headlines, as well as photos or language depicting the means by which people had died. Those should be avoided in news coverage of suicides.

Also, there are several things media stories can include to make coverage more responsible, which the report found were sometimes missing. For instance, it helps to talk about suicide as a public health issue that is multifactorial and can have important mental health aspects. It's useful to talk about hope and tell stories of people who were struggling but then did better. And it's very important to say that treatment for mental health problems works, to say there are treatment options, and to provide contact information for crisis services and say, "If you're concerned that you may harm yourself, here is the place to go."

SEE YOUTH SUICIDE ON PAGE 7

ABOUT YOUR HEALTH

EVENTS ARE FREE UNLESS OTHERWISE NOTED. SPACE MAY BE LIMITED, SO PLEASE CALL TO REGISTER IN ADVANCE.



PHOTO: LINDA KRAKOW EAMAN

A young visitor at Stanford Medicine's May 20 Health Matters event surveys a mock-up of the new Stanford Hospital, scheduled to open in 2018.

Polycystic Ovarian Syndrome

A seminar with Sophia Yen, MD, an adolescent medicine physician at Stanford Children's Health. Learn about symptoms and treatment options for young women with PCOS.

DATE: Monday, July 10, 7 to 8:30 p.m.

LOCATION: Sunnyvale Clinic Conference Rooms, 1195 West Fremont Ave., Sunnyvale.

Seating is limited. RSVP at www.classes.stanfordchildrens.org.

Infant CPR

Learn CPR using infant manikins. This class is based on the American Heart Association's Family & Friends guidelines and is recommended for new parents, grandparents and other caregivers of newborns through 1 year.

DATE: Monday, July 31, 4 to 5:30 p.m.

LOCATION: 4100 Bohannon Drive, Menlo Park.

Fee: \$50. Register online at www.classes.stanfordchildrens.org.

Grandparents Seminar

Designed for new and expectant grandparents, this class examines changes in labor and delivery practices, the latest recommendations for infant care, and the unique role of 21st-century grandparents.

DATE: Monday, August 7, 6 to 8:30 p.m.

Location: 4100 Bohannon Drive, Menlo Park.

Fee: \$60. Register online at www.classes.stanfordchildrens.org.

Stanford Medicine in Emeryville

Stanford Health Care is now readily accessible to patients who work or live in the East Bay. A new outpatient facility, based in Emeryville, opened in March and now provides access to Stanford Medicine physicians and services in one convenient location.

The 90,000-square-foot multispecialty health center "brings many of the high-quality services of Stanford Health Care closer to where patients live and work in the East Bay, reducing the need to travel to Palo Alto for great care," said Catherine Krna, vice president of ambulatory care.

Stanford Health Care, Emeryville is the only building in the East Bay SHC network where patients can get everything done conveniently, in a single visit. At the facility, patients can see a primary care physician or a specialist, have imaging or lab work completed, and undergo outpatient procedures.

"We are excited to welcome Stanford Health Care to Emeryville," said Scott Donahue, mayor of Emeryville. "We value the care Stanford brings to our community and are proud to be home to this incredible hub of health care services for the East Bay."

Stanford Health Care, Emeryville was designed with patient access and convenience in mind. Patients receive complimentary valet parking and can use one centralized check-in for all services. An electronic patient pass system lets patients move through their day more easily: They scan the pass at arrival stations to let clinicians know they are ready.

The building is also something of an art studio: Stanford Health Care partnered with the Emeryville Art in

Public Places Program to showcase work from East Bay artists on all four levels of the facility.

The facility is designed around team-based patient care. Primary care physicians share clinic space with specialty practices, and specialists with complementary patient populations are grouped together in clinic pods—cardiology with pulmonology, and internal medicine with dermatology and ear, nose and throat, for example. In addition, through Stanford Health Care's growing University HealthCare Alliance Network, Stanford Medicine doctors can work with local physicians.

"This wonderful new facility brings together multidisciplinary teams of Stanford clinicians and allows us to serve patients in one convenient location," said David Entwistle, president and CEO of Stanford Health Care. "It also reflects our commitment to partner with community physicians in new ways and extend access to Stanford quality care and resources."

Besides primary care, Stanford Health Care, Emeryville offers specialty care in cardiology, dermatology, gastroenterology, neurology, pain management, pulmonology, urology and vascular care. Patients can complete tests for neurology, cardiovascular and pulmonary function, and urodynamics, as well as imaging through nuclear medicine, three-dimensional mammography, ultrasound, CT, MR and X-ray.

For more information about the new Stanford Health Care, Emeryville facility, visit: StanfordHealthCare.org/Emeryville.

COMMUNITY MATTERS FROM PAGE 1

Stanford Medicine beds are available when hospitalization is needed. This is in keeping with our precision health vision to predict, prevent and cure—precisely (see related Q&A, page 5).

Young people in distress often struggle for as long as two years before receiving professional mental health treatment. To make high-quality support and care more widely available, we established the **Stanford Center for Youth Mental Health and Wellbeing** in 2016. The center provides early mental health support and clinical care, educational and community partnerships, and a mental health and technology program. The center is leading implementation of a pilot program called **headspace**, based on a successful Australian program, which provides outpatient counseling and other early-intervention services to youth.

For the most acute cases, Lucile Packard Children's Hospital Stanford is staffing adolescent inpatient psychiatry beds at Mills-Peninsula Medical Center in Burlingame. Early in 2017 we also established a mental health crisis team to offer immediate evaluation for teens with suicidal behaviors and provide education about self-destructive behaviors. Later this year we will launch an intensive outpatient after-school program for at-risk youth who do not require hospitalization.

Success in collaboration

We are working with many community partners, including government agencies, schools and care providers, to ensure an integrated and innovative approach. Through our close partnerships with **Project Safety Net** in Palo Alto and the **HEARD Alliance**, for instance, we are working to increase the support available

for young people and to provide community-wide education.

We are also addressing the stigma of mental illness. In August 2016, we hosted our first **Adolescent Mental Wellness Conference** to encourage open conversation on the issue. The conference aimed to break down stigma associated with mental health; increase communication among policymakers, educators, clinicians, teens and their families; and identify ways to increase access to care. We will sponsor the conference again in April 2018.

We stand united with many caring individuals and organizations devoting their expertise to this pressing issue. We will continue to provide compassionate support, advocate for accessible care and work to shift perceptions of mental illness so that no young person feels reluctant to ask for help. SMU

Possible Alternative to Knee Replacement

Study looks at using a patient's own stem cells



Jason Dragoo, MD, is conducting a study to see if using a patient's own stem cells to treat osteoarthritis can avoid knee replacement surgery.

PHOTO: ERIC KAYNE

Millions of people worldwide suffer from knee pain due to osteoarthritis, and 62-year-old Al Perez is one of them. He did not want to undergo a knee replacement, as he likes to stay active, and a knee replacement could keep him from participating in sports.

"I started doing some research and learned that Stanford was investigating a cutting-edge approach to treating knee injuries using stem cells," Perez said. He continued to ask around for an alternative to knee replacement, and "that's when I heard about Dr. Dragoo."

Jason L. Dragoo, MD, associate professor of orthopaedic surgery at Stanford Medicine, is treating patients in a study that aims to reestablish cartilage, decrease chronic inflammation caused by knee osteoarthritis or both. "After 15 years of laboratory research, we have optimized our ability to harvest stem cells from the body and can unleash their potential to improve patients with conditions such as osteoarthritis. After all of this time in the laboratory, we are finally ready for human clinical trials to begin," Dragoo said with a smile.

The treatment is truly groundbreaking: It uses the patient's own stem cells harvested from the osteoarthritic knee at the time of surgery. The cells are processed in the operating room

and injected back into the knee after the joint is prepared, allowing for repair of the damaged tissue. "We believe this technique will yield more positive results than standard arthroscopy because we are using cell therapy to help the body heal itself," Dragoo said. "We hope this may save many patients from having to undergo knee replacement."

Perez signed up for the clinical trial, and in December 2016 he underwent a 90-minute outpatient surgery. Dragoo first removed some fat from the knee using minimally invasive arthroscopic surgery, then performed standard removal of debris from the knee, and finally processed the fat in the operating room to concentrate the stem cells. The cells were injected back into the patient's knee, and the patient was sent home, able to move the joint immediately. He started physical therapy the next day.

Perez is one of 100 patients who are expected to undergo the procedure. The trial surgeries started at Stanford in the summer of 2016 and

are being performed at other national medical centers such as Harvard University, Rush University in Chicago and Ohio State University. After 100 patients have completed the procedure, the researchers will start evaluating whether those who received the stem cell treatments are better off than those who received the standard treatments. "Although extensive laboratory research shows the procedure works, human clinical trials must prove its efficacy," Dragoo said.

The results of the study are expected to become available in late 2018, and Dragoo is optimistic that stem cell procedures will be routinely used by 2020.

Perez said he was happy with the result. "My knee is feeling great," he said. "I'm water skiing and playing 18 holes of golf. So far, so good." Dragoo added, "Overall, patients have been doing really well and appear to be progressing back to a higher level of exercise with less pain." [SMU](#)

The trial is open to people ages 35 to 70 who have osteoarthritis and have experienced knee pain for less than six months. For more information, contact study coordinator Michelle Backer at mbacker@stanford.edu. Additional information on Dragoo's stem cell trials is available at clinicaltrials.gov.

YOUTH SUICIDE FROM PAGE 5

How have Stanford Children's Health and Lucile Packard Children's Hospital Stanford responded to the need for better mental health services for our community's youth?

We're doing a lot of work with schools in Santa Clara and San Mateo counties, where we've been providing direct care, prevention efforts, early intervention, and training and support for school staff around suicide prevention. We're working with groups like Project Safety Net in Palo Alto and the HEARD Alliance to increase the range of support available for young people, as well as providing community education. In 2015 we established the INSPIRE clinic, a program focused on early detection and intervention for young people with psychosis, because we know that early detection leads to vastly improved outcomes in school, work and life in general.

In addition, we've partnered with Mills-Peninsula Medical Center to have a Stanford child and adolescent psychiatrist staff several pediatric

inpatient mental health beds. Having hospital beds available for youth in crisis is important, but only one piece of the puzzle. We also want to help young people much earlier. To that end, we've been developing a local version of the headspace program, based on a successful Australian program of the same name, for providing outpatient counseling and other early-intervention services to youth.

We want to have capacity that stretches from prevention to early intervention to acute-care services, and we're really proud to partner with so many community groups to work toward this worthy goal. [SMU](#)

Individuals in crisis can receive help from the Santa Clara County Suicide & Crisis Hotline at 1-855-278-4204. Help is also available from anywhere in the United States via Crisis Text Line (text HOME to 741741) or the National Suicide Prevention Lifeline at 1-800-273-8255. All three services are free, confidential and available 24 hours a day, seven days a week.



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40 Years of Making Sock Monkeys

Volunteer group sews toys for young patients

Forty years ago, fliers appeared around town calling on volunteers to join in some “monkey business” to benefit young patients at Children’s Hospital at Stanford, as Lucile Packard Children’s Hospital Stanford was then known.

The advertisement read:

The Los Altos Senior Citizens Drop-in Center is forming a new group to sew “Monkey Toys” to be given to the children at Children’s Hospital at Stanford.

Prewashed old hose, bits of yarn and scraps of material will be used for stuffing. If you have some to contribute, please drop off at the Center any Monday, Wednesday or Friday from 10:00 a.m. to 3:00 p.m. or bring it with you on Monday, April 25th, 1977.

Won't you please come and help us out on this project?

Volunteers arrived at the Los Altos Senior Center that day with sewing and embroidery thread, needles, and scissors, and have been coming back ever since to create sock monkeys for the patients at Packard Children’s.

Monday gatherings

Every Monday morning, volunteers gather to create the toys, which are made from red-heeled work socks, nylon hose, yarn and red ribbons. The volunteers add individual characteristics to each doll as they put on the finishing touches, including unique faces, ribbons and pom-pom decorations.



Patients at Packard Children’s are happy to receive sock monkey toys. Volunteers get together once a week at the Los Altos Senior Center to make them for children staying in the hospital.

Over the past four decades, volunteers have created about 12,000 sock monkey toys, which have become widely recognized and loved by Packard Children’s patients and their families. The toys have never been sold—they are given to young patients who need a little extra TLC while staying at the hospital.

Marge Filson, a 95-year-old volunteer, has been a self-proclaimed “monkey toy lady” for the past 28 years. For her, hearing families tell about the joy their toy monkeys bring them is what it’s all about. “You see these kids receive monkeys, and they are so excited,” she said. “Anyone who has received a monkey has been very, very happy. I love seeing the response.”

Filson had a special moment while shopping for monkey toy supplies about 15 years ago. After explaining to the woman behind the counter that the socks she was buying would be turned into monkey toys, she was met with great enthusiasm. “She told me she had always wanted to talk to a monkey toy lady,” Filson said. “She had spent much of her childhood as a patient at Packard Children’s, where she received her own sock monkey toy, and she had always wanted to meet someone who made them to say thank you.”

‘A sense of comfort’

Every month, the sock monkeys are picked up at the Los Altos Senior Center and distributed to patients at Packard Children’s by Joe Manfrey, a 90-year-old volunteer who has dedicated more than 25 years to the hospital.

“After four decades, the handmade sock monkeys continue to bring a sense of comfort to our patients as they go through a difficult time in their lives,” said Maryellen Brady, the hospital’s director of volunteer services. “We are fortunate to have built a long-lasting relationship with the volunteers of the Los Altos Senior Center, and we are grateful for their dedication to the families who receive these special gifts.”

“Here I am almost 100 years old, and I’ve been at it for over 25 years. It’s very much a joy for me to be involved,” Filson said. “It’s such a wonderful program. I’ve put all my life into it.”

The Los Altos Senior Center Sock Monkey Group was honored recently with the Lucile Packard Children’s Hospital Community Service Award for its 40 years of dedication to the hospital’s patients and families. [www.stanford.edu](#)