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## **UCSF FRESNO FIRST TO IMPLEMENT NEW FETAL MONITOR AIMED AT REDUCING BRAIN DAMAGE**

FRESNO - The University of California, San Francisco Fresno Medical Education Program and Community Regional Medical Center have collaborated to be the first in the nation to offer patients a new, advanced type of fetal heart rate monitor geared to reducing brain injury in newborns.

Conrad Chao, MD, chief of obstetrics and gynecology for UCSF Fresno, championed the effort to bring the monitor to the labor and delivery unit at Community, which has one of the highest patient volumes in the state with almost 7,000 births per year. Developed by Neoventa Medical Inc., of Sweden, the device is called the STAN Monitor.

“Obstetricians have struggled for more than 30 years with monitoring technology that has never lived up to its initial promise of reducing the rate of fetal brain damage. Our high-volume, high-risk pregnancy center--combined with our academic program--is an ideal setting to pioneer implementation of this promising technology in the United States,” said Chao, who has conducted research on the fetal brain and the mechanisms of fetal brain injury.

According to Chao, the new monitor provides data that is more sophisticated than current monitoring equipment. Through a combination of modern signal processing and computer technology, it is able to automatically analyze the fetal electrocardiogram similar to the way a cardiologist detects a lack of oxygen in the adult heart during a treadmill test.

The monitor records detailed data on the baby’s heart rate and oxygen supply and generates an alert flag when there is a risk of oxygen deficiency to the baby that could result in brain damage. The mother’s labor is then managed according to clinical guidelines and specifically tailored information provided by the monitor. The data makes it possible for the health care team to make an “educated decision” on whether the delivery can proceed at a normal pace or whether the baby must be delivered immediately because of oxygen deprivation, according to Chao.

More than 350 centers throughout Europe use the monitor. The Cochrane Library, a widely respected authority on the effectiveness of clinical interventions, has reported that use of the STAN Monitor has decreased the rate of brain injury at birth by two-thirds compared to conventional monitors. Clinical studies also showed that the new monitor decreases the need for additional procedures by 10 percent.

Chao was appointed chief of obstetrics and gynecology at UCSF Fresno in 2005. Since then, he has worked to expand the perinatology program by developing a "Regional Center of Excellence" for high-risk pregnancies. The center provides comprehensive services for women with complications of pregnancy, ranging from maternal problems such as pre-term labor, diabetes and high blood pressure to fetal disorders, including birth

defects and genetic diseases. UCSF Fresno maintains a close working relationship with Community Regional Medical Center.

*UCSF Fresno Medical Education Program plays a substantial role in providing health care services to residents of California's San Joaquin Valley and training medical professionals in the region. UCSF Fresno has trained approximately one-third of Valley physicians currently practicing in one of the seven specialties in which it provides training. Since its inception more than 30 years ago, UCSF Fresno has graduated more than 2,000 resident physicians. UCSF Fresno faculty and medical residents care for the overwhelming majority of the area's underserved populations. UCSF Fresno currently trains about 200 medical residents, nearly 200 medical students and a number of fellows in critical care, cardiology and pulmonary medicine each year. UCSF Fresno also provides academic preparation programs for middle- and high-school students interested in the health professions through the Doctors Academy and Junior Doctors Academy.*

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