

## Increasing Access to Kaiser Permanente's High-Quality Affordable Health Care

By Ryan M. Fuller, BSN, RN, Nurse Residency and Fellowship Program director



40%  
of New  
Consults



6,000  
Consults



9,000  
Visits

The Greater Sacramento Head and Neck Surgery (HNS) physician group is leveraging the skills, knowledge, and experience of six Nurse Practitioners (NP) in both their inpatient and outpatient practice. Last year, these NPs provided more than 6,000 consultations and 9,000 visits for Kaiser Permanente patients and members in the Greater Sacramento area.

Terry McGarvey-Tanenbaum, RN, NP III, began working in the Kaiser Permanente Sacramento/Roseville HNS practice in January 2002.

Hired from the Diablo Service Area, she previously worked in Orthopedics supporting both the Walnut Creek and Antioch medical centers. She joined Sacramento/Roseville's HNS practice at a time when the physician group was hoping to increase access to appointments within the department. When she came on board, she started seeing patients and freeing up valuable time for the physicians. This was just the beginning.

### Practice Continues to Grow

In 2005, a second NP was added to the group and worked in tandem with McGarvey-Tanenbaum. Together, they covered inpatient and outpatient practice for Roseville and Sacramento medical centers. Today, the group includes six NPs. Stephanie Bianchi, RN, NP, is primarily assigned to the HNS Oncologists. McGarvey-Tanenbaum and Bianchi also first assist in the operating room with the HNS surgeons.

In addition, three NPs work between general and specialty practices. Two NPs do general Ear Nose and Throat (ENT) across a wide range of health concerns. Individually and collectively, they play an important role in the life of our patients and members – they help increase access to care.

### Improving Access to Care

Dennis Palmquist, RN, NP, is one of the NPs who was hired last year. "This is a fantastic opportunity to offer efficient high-quality health care to our patients," he said, adding that the NPs are able to "take our time to answer questions, listen to the patient, and formulate a plan that works for them."

## NEW KNOWLEDGE, INNOVATIONS, & IMPROVEMENTS

Kaiser Permanente empowers nurses to think creatively and exercise their clinical expertise when developing strategies that enhance care delivery. We value the contribution of interdisciplinary team members across the continuum, and together we work to optimize care in Northern California.

Jodi B. Galli, MSN, RN

Chief Nurse Executive, Kaiser Permanente Redwood City





Terry McGarvey-Tanenbaum, RN, NP, stands with medical assistant Pam Sellers as they prepare to start seeing today's patients.

However, it is not just the patients who benefit. Palmquist noted, "Providers can delegate the lower-acuity patients to the NPs, freeing their time for higher-acuity patients." His colleague Eunice Wong, RN, NP, agrees. "Our physicians see us as important members of the team," Wong said. Together, this team is helping reduce the workload of the physicians they support.

### From Runny Nose to Rhinoscopy

Five of the NPs round in the hospital and see patients who are under the care of one of the HNS physicians. One solely cares for cancer cases, and the other four care for pediatric and/or adult HNS patients.

The NPs manage medications, perform wound care, order lab tests or imaging, facilitate trach care, remove drains, assist with transfers, and even discharge patients home.

"Our doctors rely on us not just for routine care, but also to identify and escalate subtle signs of more concerning problems," said McGarvey-Tanenbaum. She's seen that NPs help by "bringing the doctor's attention to a patient who needs to be seen, whether it's their inpatient in the hospital or an outpatient in the clinic." Collaboratively, the NPs help the doctors manage their practice so they can see patients who needs them the most.

### Managing Care Needs

In the clinic, NPs see approximately 40 percent of new patient consults and 14 key diagnoses. In fact, in the last 12 months they've collectively seen more than 6,000 patients. In an average day, that looks like 15 patients a day. NPs may clean an ear, pass a nasopharyngeal scope, excise an oral lesion, incise and drain an abscess, and manage many other problems that may come up.

They'll even ascertain if patients are appropriate for a variety of head and neck surgeries, and then complete case requests for surgery, order imaging, labs, and a variety of testing from other specialties. They can get the patients ready for the care they need from the surgeon, without having to wait to see the surgeon.

The HNS physicians are happy about this, and it's no wonder. The NPs help them free up time to see more complicated HNS patients, and it also helps the physicians be more available for surgery.

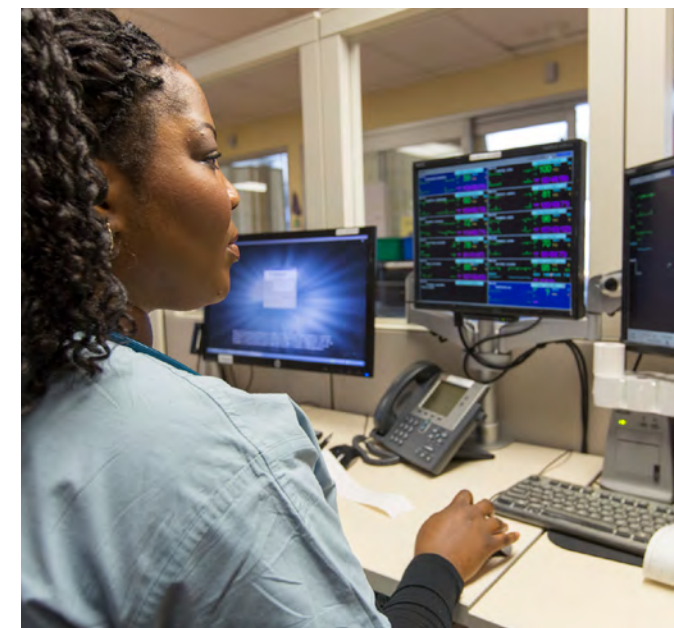
Alisa Dieterich, RN, NP, said she "really enjoys working in the clinic," and is able to "forge relationships with patients and incorporate their needs into a personalized plan of care."

## Predictive Analytics in KP HealthConnect Transforming Care Outcomes

By Shirley S. Paulson, DNP, RN, regional director Clinical Adult Services

Predicting today who will be in the ICU tomorrow is the premise of the Advance Alert Monitor (AAM) program. AAM is a cutting-edge predictive model that gives caregivers a 12-hour lead time in identifying patients at risk for clinical deterioration.

Developed by the Kaiser Permanente Northern California Division of Research under the leadership of Gabriel Escobar, MD, Advance Alert Monitor (AAM) is now implemented at Kaiser Permanente medical centers in South San Francisco, Sacramento, Walnut Creek, Santa Clara, San Leandro, and Roseville. Initial evaluation has shown statistically significant reductions in inpatient mortality, 30-day mortality, hospital length of stay and ICU length of stay for patients with AAM in Walnut Creek vs. patients without AAM.



with Advance Alert Monitor

46%  
↓ less

Adjusted odds of inpatient death

32%  
↓ less

Adjusted odds of 30-day mortality

Mean reduction in hospital LOS

35.5  
hours

Mean reduction in ICU LOS

19.1  
hours

### How Does AAM Work?

AAM enhances patient safety and outcomes by proactively identifying patients at risk for clinical deterioration. Using algorithms developed by Kaiser Permanente's Division of Research, AAM pulls data from KP HealthConnect, the electronic medical record system.

This data is sent to a secure external website staffed by experienced eHospital Kaiser Permanente Registered Nurses. These eHospital nurses are highly trained master's level or higher critical care RNs who scan the patient's chart on an hourly basis for alerts that identify those patients at risk for deteriorating within 12 hours.

The eHospital nurse directly calls the local Rapid Response Team RN and communicates the alert and any pertinent clinical information.



The Rapid Response Team RN then works with the primary RN to assess the patient, obtain a new set of vital signs, and call the physician for needed orders to stabilize the patient. Because these interventions anticipate deterioration, rather than react to it, full Rapid Response and Code Blue calls may be avoided, and patient mortality is improved. Data has also shown that if an ICU transfer is needed, the overall ICU length of stay is shorter.

### Key Roles of the eHospital RN and Rapid Response Team RN

“The most important component of the eHospital nurse is the clinical background and analytical inquiry attribute that they bring to the position,” said Elizabeth (Lizzie) A. Scruth, PhD, RN, one of the eHospital nurses and a member of the Regional Clinical Effectiveness team.

“The nurse’s ability to navigate the chart and see through the lens of the bedside nurse, Rapid Response Team nurse, and the provider makes the collaboration a success.” Great communication skills are an absolute must as well, Scruth added.

Another eHospital nurse, Theresa Villorente, MSN, RN, said, “The eHospital nurse closely reviews the alerts and prioritizes actionable interventions, so any collaboration with the front-line hospital staff is meaningful. We have the technological resources and the clinical nursing experience to recognize those subtle differences in vital signs and laboratory values, and so the Rapid Response Team RNs are able to deliver care that is personalized and efficient.”

The Rapid Response Team RN is a critical element of the success of the Advance Alert Monitor program. Using standardized and tested AAM response workflows and rounding proactively on specific patients at risk, the Rapid Response Team RN’s clinical expertise, communication, and collaboration skills saves lives.

Jocelyn Rosa, RN, on the Rapid Response Team at Kaiser Permanente Walnut Creek, said, “The collaboration between RRT and e-Hospital is fantastic. It gives us another set of eyes on our patients, which gives us a greater opportunity to save lives.”

Her Rapid Response Team colleague from Walnut Creek, Linda Obi, RN, agrees with the value of the Advance Alert Monitor program, saying, “With the help of Advance Alert Monitor, Rapid Response Team RNs, physicians, and E-hospital, our ability to prevent a patient from decompensating has increased. We can get to the patient before that happens. We’ve seen it.”

### Advance Alert Monitor as an Extra Tool

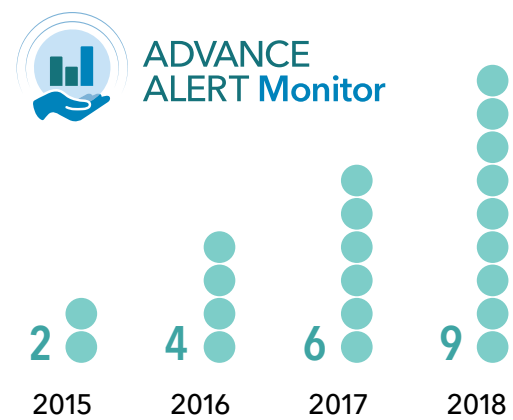
“Advance Alert Monitor has become an extra tool in the Rapid Response Team toolbox to help identify patients to follow up and check on, that may not have been identified otherwise,” said Julie Suarez, BSN, RN, assistant nurse manager, Kaiser Permanente Roseville ICU.

She feels, “It’s one more way that the Rapid Response Team can catch patient deterioration early and intervene for better patient outcomes, before it’s too late.”

### Next Steps

There continues to be excitement about the value that the AAM program brings to patient care. The region is expanding the program to South Sacramento, Vacaville, and Vallejo.

As an organization committed to continuous learning, Kaiser Permanente will be working closely with these medical centers, analyzing their success with implementing the AAM program, and eventually look to implement the program in all Northern California medical centers.



AAM Expansion Through 21 Medical Centers

## REDUCING PERINATAL SEPSIS

### Researching Routine Screening Criteria for Sepsis in the Obstetric Population

By Holly Champagne, MSN, RN, Roseville Medical Center clinical nurse specialist and Lori Olvera, DNP, RN, South Sacramento Medical Center nurse educator

Two hospitals in Northern California have implemented a nurse-led sepsis screening process for hospitalized pregnant and women who have just delivered. This pilot project aims to provide data that can help reduce the risk of maternal sepsis across the country.

### Screening for Sepsis

The arrival of a pregnant woman into the hospital is usually followed by an exit full of happiness, her arms filled with her newborn child. Unfortunately, some women develop a severe infection, called sepsis, which may lengthen their hospital stay and require treatment with antibiotics. A more severe form of sepsis, called septic shock, may require admission to the intensive care unit (ICU). According to Centers for Disease Control and Prevention statistics from 2011–2013, infection and sepsis are the third-leading cause of maternal death in the United States.

The new obstetric sepsis screening process helps RNs monitor for the presence of systemic inflammatory response syndrome (SIRS) criteria. SIRS criteria include specific vital signs, white blood cell count values, and altered mental status. The presence of SIRS criteria and a known potential source of infection, such as the uterus, indicates the body is reacting as a whole to an infection. This reaction can lead to complications, including a profound drop in blood pressure and shock.

Using the newly developed screening process, nurses evaluate for the presence of two or more SIRS values at the beginning of each shift, upon the



Matthew Garabedian, MD, Stephanie Beigh, RN, and Abies Aibuedefe, RN, discuss sepsis management in labor and delivery.

admission of the patient to the hospital, at the time of transfer between units, and at any time the nurses develop concern about the patient’s well-being.

### Obstetric-Adjusted SIRS Criteria

What makes this process innovative is the use of obstetric-adjusted SIRS criteria. Pregnancy results in physiologic changes to the women’s vital signs, including a higher resting heart rate, respiratory rate, and white blood cell count. Also, the unborn child may develop fetal heart rate tachycardia as a result of maternal infection.

This project uses obstetric-adjusted SIRS criteria, including fetal heart rate tachycardia, as the values that trigger a nurse to investigate for the potential for a maternal infection. These adjusted values represent an advance in sepsis screening in the maternal population that currently do not exist.

## Nurse and Physician Collaboration

Lori Olvera, DNP, RN, Kaiser Permanente South Sacramento, is a clinical educator who spearheaded a similar project at Sutter Health and published her findings in *Nursing for Women's Health*. Olvera and Holly Champagne, MSN, RN, CNS, Kaiser Permanente Roseville, collaborated with Thomas Russell, MD, the region's sepsis lead, and Matthew Garabedian, MD, Maternal-Fetal Medicine specialist, to champion this initiative at Kaiser Permanente pilot sites in Roseville and South Sacramento.

Dr. Garabedian, a perinatologist, is proud of what the team has accomplished. "The obstetric screening project epitomized interdisciplinary care," he said. "Obstetric sepsis is an under-recognized problem, and with this program nurses and physicians are better enabled to provide efficient, high-quality care."

## Spreading Enthusiasm

The nurses at Kaiser Permanente Roseville received two hours of education on the topic of sepsis, including how to use the new maternal sepsis screening pathway. Use of a visual job aid, such as the maternal sepsis pathway, allows the clinical staff to quickly determine if the patient meets SIRS criteria, and the next steps to take should the patient meet the criteria for sepsis. The nurses recognized the importance of screening for sepsis, and their significant role in early recognition of this potentially deadly condition.

"There is no doubt the nurses have positively impacted the care of our patients," Champagne said.

Cristi Lanta, RN, Mother/Baby staff nurse at Kaiser Permanente Roseville, created a stand-up display that illustrated the key points in the sepsis screening pathway. "We are much more aware of the signs of sepsis since this project began," said Roseville Mother/Baby Assistant Nurse Manager Kelly Dryer, RN.



Holly Champagne, RN, discusses sepsis prevention strategies with Christi Lanta, RN, during clinical rounds.

VARIABLE	ADULT, NON-OBSTETRIC POPULATION*	ADJUSTED FOR OBSTETRIC POPULATION
ALTERED MENTAL STATUS	Present	Same
TEMPERATURE LOW HIGH	> 100.4° F (38° C) < 96.8° F (36° C)	Same Same
HEART RATE	> 90 bpm	<b>&gt; 110 bpm</b>
RESPIRATORY RATE	> 20 per minute	<b>&gt; 24 per minute</b>
WHITE BLOOD CELL COUNT LOW HIGH BANDS	< 4,000 > 12,000 > 10% bands	Same <b>&gt; 15,000</b> Same
FETAL HEART RATE	Not included	<b>&gt; 160 bpm for 10 minutes</b>

Systemic Inflammatory Response Syndrome (SIRS) Criteria

## Researching Outcomes

Champagne and Olvera are collecting and analyzing data related to this process-improvement initiative at the pilot sites, and will report on their findings in early 2018 to the Kaiser Permanente Northern California Perinatal Patient Safety Committee.

Champagne recently received the region's institutional review board approval to research the outcomes of the mothers and their newborns who developed sepsis with Dr. Russell and Dr. Garabedian as co-investigators in this project.

"My goal is to advance our knowledge about this potentially deadly condition and to share that information with other clinicians in the United States," said Champagne. "Ideally, we will be able to reduce maternal mortality through early identification and treatment."

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RNs Trained on  
OB Sepsis Prevention

3,500+

KP ROSEVILLE  
Women screened during  
their inpatient stay