How does a person get bacteremia?

“If it’s unclear,” Lesse acknowledges. “About 40 percent of patients will not have a defined focus and those patients have a very high risk of infection of the heart valves. Unfortunately, just having *S. aureus* in the bloodstream carries a very high mortality risk.”

“If there is infection in a heart valve, mortality approaches 40 to 50 percent,” he continues. “It’s a highly lethal complication. There’s significant morbidity associated with it too, because patients with these infections end up with prolonged hospitalizations and prolonged antibiotic administration.”

Over the three years of the study, the researchers will collect SAB samples from an anticipated 900 patients, who will be classified as low, moderate or high risk for developing complications based on their clinical status.

Patients classified as low risk will be those who have a removable focus of infection, such as a catheter; a drainable superficial abscess; a superficial, nonremovable focus, such as cellulitis; no evidence of endocarditis or deep infection; no known valvular heart disease; a negative echocardiogram; and clearance of cations than others.”

The genomic analysis is the most critical aspect of the research. “While a few recent studies have shown a possible association of *S. aureus* strains with the development of complications,” says Lesse, “it is not known whether specific strains of *S. aureus* are more likely to cause complications than others.”

Gill will classify the SAB strains into clusters based on the DNA sequence of seven key genes found in all strains, using a technique called multi-locus sequence typing (MLST). UB researchers will be able to compare local isolates with strains from all over the world, based on this electronic database of isolates, according to Lesse.

The second stage of the analysis will use gene arrays, where more than 7,000 genes and intergenic regions known to be present in different strains of *S. aureus* will be “arrayed” or spotted on a tiny chip. The genetic content from the strains in the study can then be applied to the array and a gene-by-gene comparison can be made, creating a genomic map of the infecting bacteria.

A particularly critical hurdle to overcome in genetic research on *S. aureus* is its ability to mutate over time. It is a much different pathogen than it was even in the late 1990s, Lesse notes. The researchers are confident they can avoid this problem by collecting samples from patients in the three hospitals simultaneously and conducting quick but intense genetic investigations. “We hope to get a ‘snapshot,’ so the organisms aren’t changing over that period of time,” he says. A statistical comparison of strains known to cause complications and those without complications will identify genes that may be associated with a more serious outcome during infection.

“The results will provide the basis for establishing model guidelines to design studies to predict whether a patient diagnosed with a particular strain of *S. aureus* will develop complications,” says Lesse. “This data then can be used in future studies to determine whether the predictions are correct and whether patients at low risk of complications can be treated with shorter versus longer therapy [2 weeks or 4 to 6 weeks].”

“Such guidelines will spare patients unnecessary medications, identify patients requiring appropriate longer treatment courses and may help slow the progress of the organism’s antibiotic resistance.”

For more details about these events, contact Jennifer Lobaugh at (716) 829-2773 or jlobaugh@buffalo.edu.
**Arts in Healthcare Program**

Enhancing the healing environment for patients and caregivers

*By David Wedekind*

The Center for the Arts at UB has been awarded a $287,582 grant by the John R. Oishei Foundation to establish a program that will bring performing arts and artists into health-care settings to enhance the healing environment for patients and caregivers in Western New York.

The center’s innovative Arts in Healthcare initiative is being established in collaboration with Women and Children’s Hospital of Buffalo, a Kaleida Health facility.

The first program of its kind in Western New York, it will be modeled after a highly successful program at the University of Florida. Plans call for Arts in Healthcare to expand to additional health-care facilities in the region.

“Through many of our community-based grants, we have seen the remarkable influence of the arts in conveying information and helping to change behaviors,” said Robert D. Gioia, president of the Oishei Foundation, at the time the grant was announced in December. “We are particularly interested in seeing the results of a formal, institutionally based program with the resources behind it brought by UB and the Kaleida System.”

UB president John B. Simpson notes, “The arts contribute in vital ways to UB’s impact on the world around us. The arts in Healthcare program is a vivid example of the power of the public research university, working in tandem with our partner institutions across the region, to make a meaningful and lasting difference in the communities we serve.”

Thomas Burrows, executive director of the Center for the Arts, says he was inspired by the University of Florida program.

“When I was shown what the involvement and deep commitment of the very best professional artists working together with dedicated, enlightened professional caregivers could accomplish through their combined efforts to benefit patients, their families and hospital staff, I knew that the Center for the Arts could and should create a comprehensive program within this great research university for and with the larger community.”

“We have been so fortunate to find such a willing and far-sighted partner in Women and Children’s Hospital,” he adds. “This program has been designed to grow, evolve and to meet changing needs as they become apparent.”

Cheryl Klass, president of Women and Children’s Hospital of Buffalo, notes: “This innovative program will continue to enhance the healing environment we provide for women and children in our hospital. We are so pleased to partner with UB and bring this innovative program to life in Western New York.”

Arts in Healthcare has been in the planning stages for the past year; the Center for the Arts has worked closely on its development with Women and Children’s Hospital of Buffalo and Jill Sonke-Henderson, cofounder and codirector of the University of Florida’s Center for the Arts in Healthcare Research and Education (CAHRE).

Arts in Healthcare has become a far-sighted partner in Women and Children’s Hospital, “he explains. “It will help to increase the national and international visibility of UB and Women and Children’s Hospital of Buffalo.”

The arts have existed in health-care systems since the beginning of recorded history. Early in the 20th century, however, they were dropped from Western health care with the intention of making health-care facilities appear sleek, sanitary and more focused on technology. In the second half of the century, there was a resurgence of interest in bringing art back into health-care environments.

Burrows says studies have shown that integrating the arts into these settings helps to cultivate a healing environment, support the mental and emotional recovery of patients, communicate health and recovery information, and foster positive working conditions for caregivers to improve satisfaction and retention.

He explains that visual, literary and performing arts are flourishing in hospitals, outpatient programs, hospices and nursing and retirement facilities throughout the world. The most comprehensive and well-integrated program is the one in Florida where Shands Hospital created an “artist-in-residence” program in 1991 for its pediatric oncology clinic. The program spread rapidly to other units and by 1997 there were 14 visual, literary and performance artists in the facility. The University of Florida Performing Arts (UFPA) and Shands Arts in Medicine formed a partnership to bring performing artists from UFPA’s season into the health-care setting.

CAHRE provides a framework for interdisciplinary collaboration among University of Florida faculty and students, health-care providers, clinical artists, and the local and global communities. The program has been so successful that another initiative, AIM Together Florida, is being funded by the Florida Division of Cultural Affairs to expand the program into five additional Florida partnerships.

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Robert Bluestone and the Hudson Vagabond Puppets (see photo, opposite). He says that this summer the Center for the Arts will host an intensive training program facilitated by the University of Florida’s CAHRE program, where local invited visual artists, musicians, poets, dancers and storytellers will be trained to work with patients, families and staff in health-care settings as integral members of the health-care team.

Burrows explains that Arts in Healthcare is aligned with the strategic strengths in “Artistic Expression and Performing Arts” and “Health and Wellness Across the Life Span” that have been identified in the UB 2020 strategic plan being implemented by UB with the goal of rising among the ranks of the nation’s public research universities.

“The program will offer the benefits of multidisciplinary research and scholarship for the benefit of our community, while allowing the center to broaden its artistic and cultural reach in the region,” he explains. “It will help to increase the national and international visibility of UB and Women and Children’s Hospital of Buffalo.”

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