Keesler Medical Center’s Dedication To Excellence

Keesler Medical Center
Located in Biloxi, Mississippi, Keesler Medical Center is one of the largest medical facilities in the United States Air Force. It provides outstanding and affordable health care to approximately 7,500 active duty members in addition to 20,000 other enrollees.

General highlights
Keesler Medical Center has 60 beds, of which 10 are in the Intensive Care Unit (ICU). This hospital serves active duty personnel, their families, retired service members, and Veteran Affairs (VA) centres. Facilities include seven recently renovated surgery suites, a newly built inpatient building, and a Radiation Oncology Center. The state of the art Family Birthing Center is another main feature of this center.

There are about 60 services and education programs available. Furthermore, Keesler Medical Center is partnered with the University of Mississippi Medical Center, Gulfport Memorial Hospital, and the VA Gulf Coast Veterans Health Care System Medical Center. It is also affiliated with 35 institutions that are involved in training resident physicians and other medical professionals. The centre also focuses on medical readiness preparation in accordance to the Department of Defence guidelines.

Cardiology and other services
At the heart of a new drug trial, Keesler Medical Center hosts the busiest cardiology service in the Air Force. It performs more than 1,000 cardiac catheterizations yearly, of which a majority of the patients are stable and will likely benefit from a stent placement. Emergent cases account for the remaining number of catheterizations. Due to the high number of patients overall, the cardiology department can enroll sufficient numbers of participants in the tocilizumab study. This drug may benefit heart attack patients by decreasing their risk of developing severe and fatal complications that may occur afterward.

There are other specialties available at this Air Force Hospital such as general surgery, gastroenterology, endocrinology, pulmonary and critical care, infectious disease, nephrology, orthopaedic surgery, obstetrics and gynaecology, rheumatology, and plenty of others as well.

Training future doctors
Keesler Medical Center provides physician training in the hospital, which includes training programs for medical residents in inpatient, ambulatory, and preventative medicine. Residents also train at other hospitals along the Gulf Coast to ensure a well-rounded and robust education. Furthermore, the program offers didactic lectures to develop and enhance critical reasoning skills in the residents and students. After graduation, the physicians are eligible for continued subspecialty training.

Other training programs include the general surgery residency, dental, and physician assistant assistance as well. In addition to junior doctors, this facility educates medical students during their school rotations.

Research opportunities
Keesler Medical Center is a research site with established programs designed to promote clinical investigations associated with clinical medicine, graduate medical education, and Department of Defence. The hospital currently has 88 research protocols, including the tocilizumab drug trial. Medical investigators, including training clinicians, are actively publishing research, presenting at conferences, and seeking new and exciting collaborations.

Why Keesler?
In conclusion, Keesler Medical Center offers comprehensive medical care, top-notch facilities, superior training and education, as well as cutting edge research.

A PROMISING TREATMENT FOR HEART ATTACK
Tocilizumab, a drug used in the treatment of Rheumatoid Arthritis, is currently being studied for its potentially beneficial effects on lowering complications after a heart attack. It does this by targeting a key player in the process.

The role of interleukin 6 in a heart attack
An acute myocardial infarction (MI), or heart attack, occurs when oxygen-rich blood cannot flow to blocked areas of the heart. The resultant process involves inflammation and injury to the cardiac tissue. A cytokine called interleukin 6 (IL-6) plays a significant role in activating and recruiting many immune cells. The level of IL-6 is elevated in a heart attack and other stressful events. In fact, the amount of IL-6 remains persistently high even after a heart attack and has been linked heart damage during this time. Based on this information, a drug that blocks the IL-6 receptor is believed to produce significant improvement during and after myocardial infarction. The selected medication is tocilizumab.

The research trial
Keesler Medical Center in the Air Force Medical Service is investigating the effects of tocilizumab on reducing major adverse events after myocardial infarction. These serious complications include a repeat episode of MI, abnormal heart rhythms, swelling of the heart, fluid build-up around the heart, a tear in the coronary artery, or even death itself. This research study is designed to treat individuals who suffered a heart attack with tocilizumab within 24 hours of admission. Of course, the patients will still be treated with the routine medications and procedures. The investigators are hypothesizing that tocilizumab reduces the occurrence of these adverse events.

In addition to these potentially catastrophic effects, the trial analyses numerous secondary outcomes as well. It assesses whether the drug decreases the length of hospital stay, which is typically 24 to 96 hours. The study also evaluates readmission rates as this has implications regarding hospital costs and patient health.

Furthermore, the investigation administers a thorough phone questionnaire 30 days after treatment, in which it determines the subject’s symptoms and quality of life. Since tocilizumab has known side effects such as infection, reactivation of tuberculosis, and gastrointestinal perforation, the survey ascertains if the patient is experiencing these.

Drug safety
The selected drugs are considered safe for those who have undergone myocardial infarction. This is based on what investigators know about Rheumatoid Arthritis. Individuals with this disease have a higher risk of coronary heart disease and heart attack compared to the general population. In fact, they are at the same risk as those with diabetes mellitus.

Subjects enrolled in this above study are carefully monitored in the hospital and pose no more risk than patients with Rheumatoid Arthritis, who self-inject this drug in the outpatient setting.

The participants
Due to the high number of patients with myocardial infarction and cardiac catheterization at this hospital, there are sufficient candidates for the study. Statistical analysis suggests that the trial should have at least 125 participants to yield significant data.

Patient information used in the overall evaluation includes age, gender, race, and body mass index (BMI). The two groups under investigation are subjects receiving a placebo and those receiving a tocilizumab injection. As with most trials, there are distinct criteria that the participants fulfill before being enrolled. Specifically, the participants are above 18 years old and are diagnosed with heart attack through comprehensive testing. Conversely, some factors will exclude patients from participating. These are individuals with infections such tuberculosis, HIV, or Hepatitis B or C. Additionally, those who have allergies to the drug, or are pregnant or breastfeeding are excluded.

Goals of the trial
While designing the trial, investigators did not know the actual impact of tocilizumab, but they are hopeful that prompt drug therapy will result in early blockade of IL-6, which in turn helps injured heart cells heal faster. Thus, a more rapid recovery is followed by relief of symptoms, a shorter hospital stay, and more importantly - prevention of another heart attack or other life-threatening medical conditions.
Meet the researchers

**LtCol (Dr) Thomas A. Shaak, BSC, PhD**  
**Director, Keesler Clinical Research Laboratory**

Dr Thomas Shaak directs the operation of the Keesler Medical Center Research Laboratory. Operations are centred on Full Spectrum of Medical Skills Training, Graduate Medical Education for Medical Residency Programs, Medical Research in support of Faculty, Air Force and Department of Defence Programs and Air Force Medical Service related R&D.

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**Dr Yolanda Moulds-Love, PharmD, MPH**

Dr Yolanda Moulds-Love is an honour graduate whose educational background includes a Bachelor of Science in Chemistry and a Master of Public Health obtained from the University of Southern Mississippi. Upon ranking top of her class with honours, she obtained her Doctorate of Pharmacy from Xavier University. Her extensive pharmacy practice background, coupled with her academic superiority, seasoned leadership, and managerial skills, exemplifies her spirit of excellence.

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**Captain (Dr) Christopher D. Smith**

Dr Christopher D. Smith is a graduate of Albany Medical College in Albany, New York. He has been a member of the Keesler Medical Center Internal Medicine residency program since June of 2014. He is the winner of both 2014 and 2015 USAF ACP chapter abstract competitions, as well as the 2015 USAF Arthur Grollman award for excellence in clinical research.

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**Captain (Dr) Charles F. Haller**

Dr Charles Haller currently serves as an Internal Medicine resident in the Air Force GME program at Keesler Medical Center. He was a distinguished graduate from the United States Air Force Academy, and later earned his Medical Doctorate from the Uniformed Services University of Health Sciences School of Medicine.

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**Major (Dr) Bryan C. Ramsey**

Dr Bryan C. Ramsey is the Flight Commander and Medical Director for Internal Medicine (IM) at Keesler Medical Center. He is also an Assistant Professor of Medicine, Uniformed Services University School of Medicine, Key Clinical Teaching staff at 2nd largest IM residency program in the USAF, and core faculty for the IM residency.

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**Colonel (Dr) Matthew B. Carroll, FACP, FACR**  
**Designated Institutional Official**

Dr Matthew B. Carroll is a practicing Rheumatologist and Internist who also serves as the Designated Institutional Official of Keesler Medical Center, Keesler Air Force Base, Mississippi. He has served as the Institutional Review Board Chairperson since 2011. He has authored or co-authored 20 peer-reviewed articles and has articles awaiting publication.

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