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ALACHUA COUNTY MEDICAL SOCIETY

House Calls

WINTER 2018

Scott Medley, MD with Mike Lukowski, MD - Owner and Organ Transport Pilot of University Air Center

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The We Care Physician Referral Network is a community-based initiative that coordinates volunteer physicians, dentists, hospitals, and ancillary providers to meet the medical and dental needs of uninsured, low income Alachua County residents. It is a partnership of public and private institutions, agencies, and individuals that responds to the health care needs of the community's under-served population. A health care board provides guidance to the program in response to community health issues and evaluates the efficacy of the agency's programs. The initiative started over twenty-five years ago in response to an overwhelming need for medical services in these areas.

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We Care

Physicians Referral Network

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Featured Articles

CONTRIBUTING AUTHORS

Scott Medley, MD

Retired Family Physician

Dr. Scott Medley practiced family Medicine for 20 years before becoming the Chief Medical Officer at NFRMC. He served as President of the ACMS and of the Florida Academy of Family Physicians, and as Chair of the Gainesville Area Chamber of Commerce. He received the Gainesville Sun Community Service Award in 1987 and was chosen Florida Family Physician of the Year in 1992. He currently is retired and Volunteers at Haven Hospice. Dr. Medley has served as Executive Editor of *House Calls* for the past 19 years, and has authored over 80 editorials and articles for this publication.

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The Cardiac & Vascular Institute

Matheen A. Khuddus, M.D. is a native of South Florida and is a graduate of the University of Florida College of Medicine, Junior Honors Medical Program. He completed his Residency in Internal Medicine as well as his Fellowship training in Cardiology and Interventional Cardiology at the University of Florida. He joined The Cardiac & Vascular Institute in 2008 and currently serves as the Medical Director and the Director of Cardiovascular Research.

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Dr. Juan R. Vilaro is an assistant professor of medicine in the Division of Cardiovascular Medicine. He received his medical degree from the University of Puerto Rico School of Medicine, completing a visiting clerkship in cardiovascular diseases at Mayo Clinic during the same tenure. Dr. Vilaro went on to complete a residency in internal medicine at the University of Florida, serving as chief resident for the program. He then continued his training at UF, completing cardiology and advanced heart failure/transplant cardiology fellowships.

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From the President's Desk

Matheen A. Khuddus, MD,
ACMS President

As with every New Year, 2018 brings with it a renewed focus on our goals and challenges and the formulation of new plans and resolutions. For the Alachua County Medical Society, these plans are focused on continuing to address the ongoing challenges to physicians for the coming year. Physician burnout, the opioid crisis and health care reform remain some of the most pressing issues on our agenda.

Recent surveys have shown that physician burnout is as high as 60% for some specialties and, while there is increased recognition of the problem, little is being done to address this. In my experience, physicians are actively engaged in trying to remedy this problems, but too often their efforts are misdirected and don't result in meaningful change. The February CME program with Dr. Lisa Merlo focused entirely on the topic of physician burnout. Dr. Merlo's expertise should help our members not only identify the signs of burnout, but also help the ACMS and its members direct their future efforts to areas that will make a difference. While the individual physician can focus on the daily tasks needed to reduce burnout, the ACMS is committed to supporting and pushing for the system changes that are needed. In addition, the ACMS will continue to host events such as "Tap Room Tuesdays" and pursue novel venues to allow physicians the opportunity to come together, share ideas and network in non-traditional settings.

The ACMS will also be turning its attention to the opioid epidemic. This public health crisis is now the leading cause of injury death in the United States. Much of the national focus on this crisis has been on the role of physicians and the health care system, too often oversimplifying a very complex problem. The ACMS is committed to education and continuing to raise awareness of the epidemic with public outreach such as our participation with HOME magazine as well as a CME program planned for our members later this year.

Every year health care reform is an area of concern for physicians and this year is no different. The next few years will include some of the biggest changes in recent memory related to implementation of the Affordable Care Act and MACRA. These changes always result in unexpected problems and challenges and the ACMS is committed to being the vehicle for advocacy at the local, state and national level.

As the current President, I remain committed to advancing the agenda of the ACMS to serve the physicians practicing medicine in Alachua County. I welcome your thoughts and ideas on how we can continue to serve you and add value to your membership. Please feel free to email me at mkhuddus@tcavi.com.

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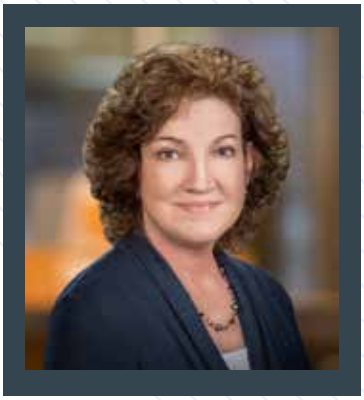
From the Desk of the EVP



Organ Transplants and the Paradox of the Opioid Epidemic

Jackie Owens, ACMS Executive Vice President

Organ transplant surgery replaces a diseased organ or body part (Kidney, Liver, Pancreas, Heart, Lung, Intestine, Abdominal Wall, Head & Neck: Craniofacial, Head & Neck: Scalp, GU: Penile, GU: Uterus, Upper Limb: Bilateral, Upper Limb: Unilateral) [1] with a healthy one. Donors may be deceased or living (kidney, partial liver -as the liver can regrow itself). [2] Once diagnosed as a candidate for transplantation, the recipient patient is placed on a waiting list of the nation's transplant system – the Organ Procurement and Transplantation Network (OPTN). OPTN is managed by the United Network for Organ Sharing (UNOS) which helps create and define organ sharing policies, making the best/most successful use of donated organs. These organ-sharing policies are continuously evaluated and updated to incorporate new medical advances and discoveries.[3]

UNOS has developed a system for prioritizing candidates waiting for transplants based on statistical formulas to determine urgency in patient need. For example, with liver transplants, MELD (Model for End-stage Liver Disease) is used for ages 12 and older; and PELD (Pediatric End-stage Liver Disease) for patients under 12 years of age. These systems are on a numerical scale (from 6 – less ill, to 40 – gravely ill) and are calculated by a formula using routine lab tests. The MELD or PELD score is assessed many times during a patient's waiting period, ensuring that those with the greatest need are served at any given moment. Exceptions to MELD and PELD are Status 1A and 1B patients having acute liver failure and a life expectancy of hours to a few days without a transplant.[4]

With liver transplants, once recipient patients are identified and scored, organs are then allocated first based upon compatibility with the donor (blood type, height, weight, etc.). Secondly, livers are allocated based upon age, medical urgency, and geographical proximity. Status 1A and 1B candidates are given first priority and then qualified by their MELD/PELD scores. Organs are then first offered locally, then regionally and then nationally to match a candidate.[5]

The most significant barrier to organ transplantation is the shortage of available organs. [6] However, UNOS data shows that deceased organ donors in the United States exceeded 10,000 for the first time in 2017. For the year, organs were recovered from 10,281 donors, a 3.1% increase over 2016 and a 27% increase since 2007. [7] A record number of 34,768 organ transplants were performed in 2017 (deceased and living donors) – resulting from increased donations. [8] This marks the fifth consecutive record-setting year for transplants in the US. These record number of donor organs occurred for kidney, liver, heart and lung transplants. 82% were from deceased donors; 18% from living donors. See pages 10 and 11 for additional information on total transplants performed.

Sadly, this increase in donors coincides with increased deaths resulting from the opioid epidemic. According to the OPTN, donors who died from drug overdoses increased from 29 to 848 (a 2,924% increase) over the last 20 years.[6] Donors who died from drug overdose are more likely to be younger (median age, 31 years) than donors with a cause of death related to cardiovascular disease (median age, 47 years) or stroke (median age, 52 years). In addition, donors who die from drug overdose typically have no medical comorbidities that would preclude donation, thus making them good candidates for donation. [6,7]

Dr. David Klassen, Chief Medical Officer of UNOS, reports that about 40% of the increase in the past five years is related to the "drug intoxication issue." Data is not available to determine which drugs contributed to these overdoses, but more than 70% of all US deaths from drug overdoses are related to prescription opioids and/or heroin.[7] In the last five years the number of donors who died of drug overdose went from 560 in 2013 to 1,367 in 2017.[8] Dr. Klassen also states that advances in science and in the practice of organ procurement and transplant, as well as public awareness, also have contributed to the record number of donors, but that the opioid epidemic has been a factor.

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Drug overdose donors are placed in a higher risk category by the Public Health Service (PHS) with many organs eliminated from consideration for transplant. According to a 2016 study conducted extracting data from the OPTN database, the influence of the drug overdose epidemic on organ donation was most pronounced in the field of liver transplantation, where fewer organs were rejected.[7] Utilization rates were lower for donors designated as PHS positive as compared with PHS negative, for all organs except livers, indicating a lower perceived risk by the liver transplant community. [6]

Figure 1; (A) Demonstrates the mechanism of death for deceased liver donors in the United States from 2003 to 2014. (B) demonstrates the percentage of organ donors classified as "increased risk" based on mechanism of death.[7]

Working in conjunction with the OPTN, organ banks have begun to implement clinical strategies for assessing organ suitability and maximizing the availability of these organs for transplantation. They are updating the guidelines for donor risk identification to expand beyond HIV and to include additional behavioral risk factors such as intravenous (IV), intramuscular, or subcutaneous drug use for nonmedical reasons in the preceding 12 months – associated with recent exposure to hepatitis B (HBV) and hepatitis C (HCV) viruses. They are including nucleic acid testing of donors to determine not only viral antibodies, but also the presence of the virus itself – thereby reducing the window between the time of exposure to, and detection of, HIV, HCV and/or HBV from several weeks to less than a week.[6]

Along with this additional screening, the OPTN has implemented an option for organ recipients called "Informed Consent of Transmissible Disease Risk" for situations where the donor has a known medical condition that may, in the transplant hospital's medical judgment, be transmissible to the recipient, including HIV, HBV, and HCV. This ensures that candidates understand the risks and tradeoffs of accepting or declining organs from donors that meet PHS guidelines, versus those that do not.[9]

Lastly, medical treatment developments have made HIV and HCV curable. The organ banks implementing these programs use clinical developments that allow successful treatment of transplant recipients who contract donor-derived infections, as needed. This changes the risk-benefit analysis significantly for the recipient.[6] Living with a treatable disease versus dying while on the waiting list for an organ transplant may be considered a reasonable trade-off for some patients.

Comprehending the balance between risks and benefits in using increased risk donors is a step forward in transplant medicine. Unfortunately, this opportunity comes at a very high price. The ACMS will be addressing the Opioid Epidemic at our April Dinner Meeting. Please come out and weigh in on the discussions.

References Available Upon Request.

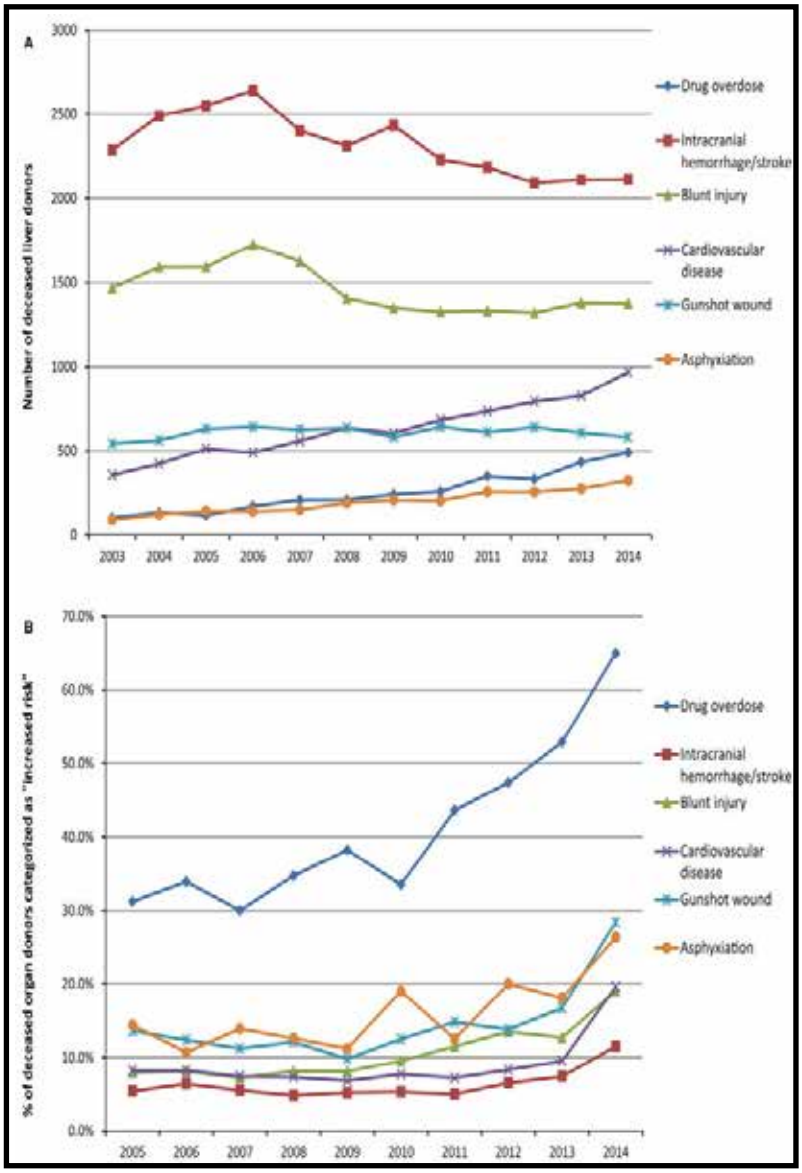


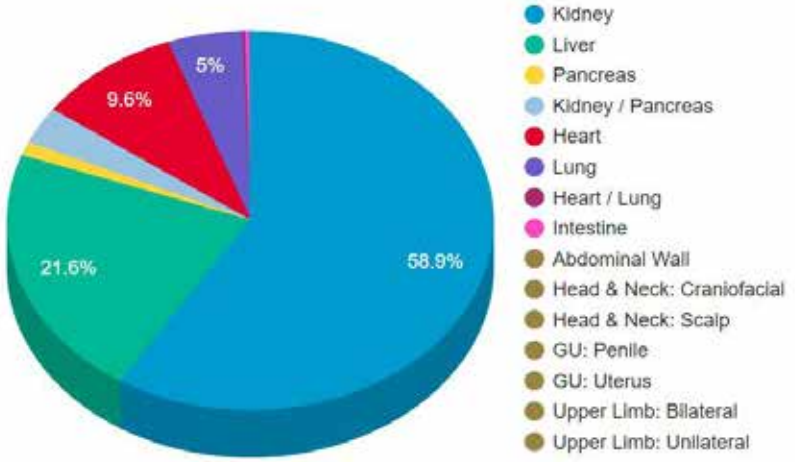
Figure 1. Source: Goldberg, et al: Improving Organ Utilization; 2016

Organ Transplant Data

Source: Organ Procurement & Transplantation Network, US Department of Health and Human services

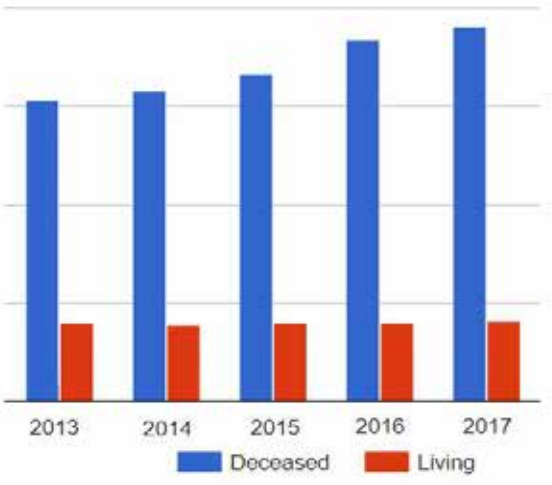
Transplants By Organ Type January 1, 1988 - January 31, 2018
Based on OPTN data as of February 21, 2018

Organ	Transplants
Kidney	426,842
Liver	156,587
Pancreas	8,577
Kidney / Pancreas	22,967
Heart	69,198
Lung	36,003
Heart / Lung	1,232
Intestine	2,921
Abdominal Wall	1
Head & Neck: Craniofacial	5
Head & Neck: Scalp	1
GU: Penile	1
GU: Uterus	10
Upper Limb: Bilateral	6
Upper Limb: Unilateral	4
Total	**724,355**



Transplants By Donor Type - All Organs
January 1, 2013 - December 31, 2017
Based on OPTN data as of February 21, 2018

Year	Deceased Donor Transplants	Living Donor Transplants
2013	22,967	5,988
2014	23,720	5,819
2015	24,985	5,989
2016	27,630	5,980
2017	28,588	6,182
Total	**127,890**	**29,958**

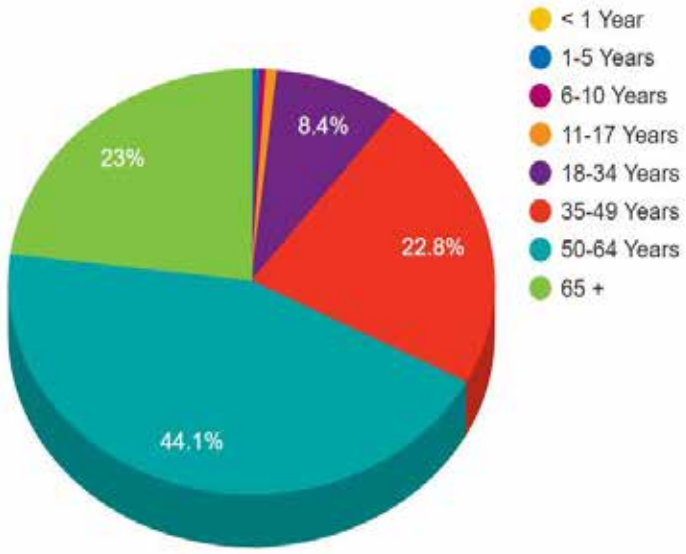


Organ Transplant Data

Source: Organ Procurement & Transplantation Network, US Department of Health and Human services

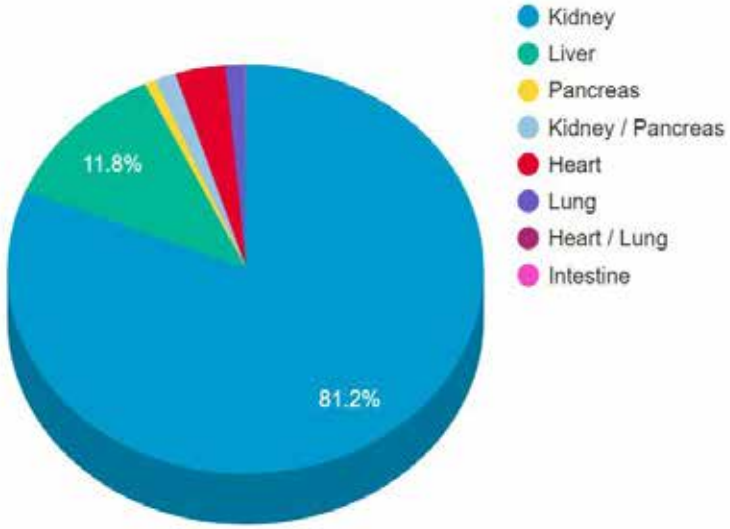
Waiting List Candidates by Age - All Organs
Based on OPTN data as of February 21, 2018

Age	Candidates
< 1 Year	114
1-5 Years	575
6-10 Years	453
11-17 Years	838
18-34 Years	9,615
35-49 Years	26,148
50-64 Years	50,693
65 +	26,411
Total	**114,847**



Waiting List Candidates by Organ Type - All Patients
Based on OPTN data as of February 21, 2018

Organ	Candidates
Kidney	95,325
Liver	13,890
Pancreas	894
Kidney / Pancreas	1,665
Heart	3,992
Lung	1,396
Heart / Lung	44
Intestine	249
Total	**117,455**



In Memoriam

It is with much sadness that we report that a beloved member of our medical family passed away….

Thomas M. Brill, MD

(March 8, 1921 – December 16, 2017)

Thomas M. Brill, MD, passed away at age 96 on December 16, 2017. A Gainesville resident since January 1949 when he opened his pediatric practice here, (save for a three year absence for postgraduate work and military service 1952-55), he was the senior physician in the county, in that no other physician now living preceded him. Dr. Brill graduated with an M.D. degree in 1944 at 23 years of age. In 1946 he entered the Navy as a medical officer but was released from active duty after eight months (WWII ended). He returned to Ann Arbor for a residency in pediatrics.

In January 1949 the family moved to Gainesville where he entered practice as the second pediatrician to practice here, being preceded by Dr. Raymond Camp. In 1950 he was certified by The American Board of Pediatrics. In 1952 he returned to Ann Arbor for a fellowship in Allergy and Immunology, but was interrupted by a repeat call to active duty in the Navy for which he served during the Korean War for two years. He was asked to move back to Gainesville by many physicians and friends. In 1955 he resumed Pediatric and Allergy practice and practiced medicine until the age of 70. He was a member and Past President of the Alachua County Medical Society. He was appointed by the Governor of Florida to serve a four-year-term on the Board of Medicine of the State of Florida.

He is survived by his wife, Gretchen Brill; his daughter, Judy Lang Rembert; sons: Roger T. Brill, MD; Eric James Brill; Robert J. Brill; MD, and 12 grandchildren and 16 great-grandchildren.

Belatacept - The "New Kid on the Block" in Kidney Transplants

Karl Womer, MD
UF Health Program Director of Renal Transplantation,
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UF Health Division of Nephrology Hypertension, and Renal Transplantation.

Karl Womer, MD

Kawther Alquadan, MD

Standard kidney transplant maintenance immunosuppression typically includes a calcineurin inhibitor (CNI), either cyclosporine or tacrolimus, combined with mycophenolate and corticosteroids. CNI use has been associated with a reduction in the incidence of acute rejection (AR) and improvement in short-term allograft survival. However, improvements in long-term allograft survival have not been commensurate with those in the short-term. CNI nephrotoxicity has long been considered a contributor to long-term damage to kidney transplants, although recent evidence implicates alloimmunity as a major determinant of late kidney allograft loss. In general, CNI withdrawal or avoidance strategies have not been very successful at preserving long-term graft function, and to date the CNIs still remain as the cornerstone of immunosuppression for renal transplant patients. However, in addition to being nephrotoxic, CNIs are significantly correlated with higher cardiometabolic complications, including post-transplant hypertension, diabetes, and hyperlipidemia. A long-term goal of the transplant community is to find an alternative to CNIs that is not inherently nephrotoxic, protects adequately against alloimmunity, and does not increase cardiometabolic complications.

During organ procurement, the kidney graft is exposed to a series of events starting with ischemia- reperfusion injury, which triggers an immune response, initially through the innate immune system (antigen nonspecific) by recruiting inflammatory cells and cytokines, followed by activation of the adaptive immune system, which targets the specific antigen that caused its activation. In the absence of adequate immunosuppression, acute rejection will ensue with resulting destruction of the graft. Activation of T cells starts with binding of the T cell receptor (TCR)–CD3 complex to the peptide-MHC complex on an antigen-presenting cell, which is referred to as signal 1. A co-stimulation signal (signal 2) is needed to augment the immune response, through multiple molecular interactions that include, but are not limited, to binding of CD28 to its ligands, B7.1 (CD80) and B7.2 (CD86), which ultimately results in clonal expansion of naive CD4 T helper cells. Once T cells are activated, they express increased levels of CTLA-4 (CD152), which has greater affinity than CD28 for B7 molecules and thus binds most or all of the B7 molecules, effectively down-regulating the proliferative phase of the immune response [1]

Belatacept, a first-in-class co-stimulation blocker, is a CTLA-4 containing fusion protein that binds to CD80 and CD86 on antigen presenting cells to prevent T cell activation and proliferation (Figure 1). Belatacept was recently approved by the United States Food and Drug Administration as maintenance immunosuppression for de novo kidney transplantation. However, it has also been used "off label" for conversion from calcineurin inhibitors later after renal transplantation. It is approved only in Epstein-Barr virus (EBV) seropositive adults due to concerns for increased risk of development of early post-transplant lymphoproliferative disorder (PTLD) in EBV seronegative patients. It is available in intravenous form only and is administered as an infusion over 30 minutes without the need for premedication. Initial dosing is 10mg/kg on post-transplant days 1, 5, end of week 2, 4, 8, 12, and 16, followed by a maintenance dose of 5mg/kg every 4 weeks. There is no reported drug-drug interaction with cytochrome P450 substrates, and in addition, no need for drug level monitoring. Rare but serious side effects include progressive multifocal leukoencephalopathy, an often progressive and fatal CNS infection caused by the JC virus (a polyomavirus), and post- transplant lymphoproliferative disorder (PTLD).

The phase III BENEFIT trial enrolled patients who received a kidney from a live donor or a standard criteria deceased donor. Induction therapy consisted of non-lymphocyte depleting basiliximab, while maintenance immunosuppression consisted of mycophenolate mofetil, corticosteroids and either belatacept or cyclosporine. The belatacept group showed significantly higher GFR despite higher rates of early acute rejection compared to cyclosporine.[2] Belatacept- treated patients also had better blood pressure and lipid control compared with cyclosporine controls, however there was no difference in the incidence of new onset diabetes after transplantation

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(NODAT) in the first year. An increased incidence of PTLD, especially of the CNS, was observed in the belatacept group, although mostly in EBV seronegative patients. The 7-year follow up data showed that the composite endpoint of graft and patient survival was significantly better with belatacept, but individual graft survival and patient survival were separately not statistically different compared to cyclosporine.[3] Belatacept continued to show superior renal function with no increased risk of late PTLD in EBV seropositive patients. Unexpectedly, belatacept was associated with a lower incidence of de novo donor specific antibodies (DSA), which are associated with antibody-mediated rejection and shortened long-term graft survival.

The BENEFIT-EXT trial included patients who received a kidney transplant from an expanded criteria donor (ECD), donation after cardiac death (DCD) donor, or a donor with long cold ischemia time.[4] This trial found that patient and graft survival with belatacept were not inferior, but unlike the BENEFIT trial, acute rejection rates were similar between belatacept and cyclosporine. Superior graft function and a lower incidence of NODAT were observed in the first year in the belatacept group. The 7-year follow up data showed superior renal function in the belatacept group when compared to cyclosporine with no difference in patient survival, graft survival or acute rejection[5]. As in the BENEFIT trial, belatacept was associated with a lower incidence of de novo DSA.

One of the problems with the two studies above was the use of cyclosporine as the control arm instead of tacrolimus, which is currently prescribed in over 90% of U.S. renal transplant recipients. To answer the question of how belatacept would fare in the real clinical setting, our group recently conducted a retrospective study of the Scientific Registry of Transplant Recipients database to compare the 1-year outcomes between belatacept and tacrolimus[6]. The composite patient death or graft loss at 1 year in the belatacept group was non-inferior when compared to tacrolimus, despite a higher rate of acute rejection. The acute rejection rates were particularly high in those recipients with high panel reactive antibody who received a non-lymphocyte depleting induction agent. Belatacept use resulted in significantly higher renal function at 1 year compared to tacrolimus in recipients who would have been eligible for the BENEFIT-EXT trial, but not in patients eligible for the BENEFIT trial. Finally, a significantly lower incidence of NODAT was observed with belatacept use, even when combined with tacrolimus during parts of the first year, a protocol used by some centers in an effort to reduce the early AR rate. The results of our study suggest caution with the use of belatacept in de novo kidney transplantation and consideration of short-term addition of tacrolimus to belatacept during the first year post-transplant, when the AR risk is highest, and/or using lymphocyte depleting induction in all but the lowest risk patients. Other studies have demonstrated that patients can be switched safely from a CNI to belatacept later post-transplant, although also with a slightly increased risk of AR.

In summary, belatacept seems to preserve GFR and have a better metabolic profile compared to CNIs, albeit with increased early AR. Although there is still no convincing demonstration of superior long-term graft survival with belatacept, this new medication has proven itself as a bona fide alternative to CNIs for maintenance immunosuppression in kidney transplant recipients.

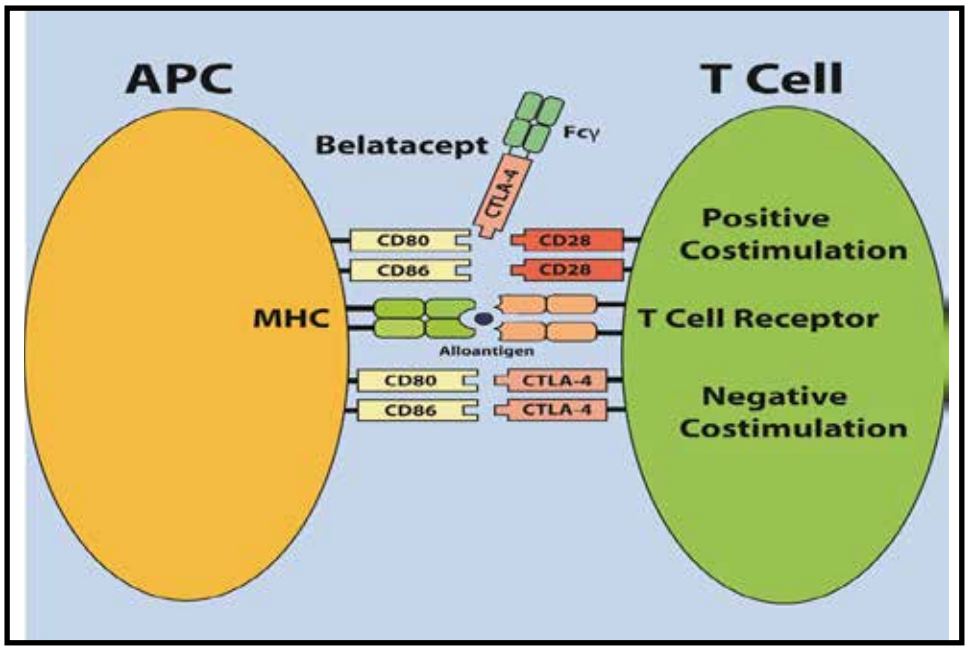

Figure1: Co-stimulation blockade and the mechanism of action for belatacept. Lymphocyte T cell activation requires two signals, with the first signal mediated by the major histocompatibility complex (MHC) and the T cell receptor, and the second signal (positive co-stimulation) mediated by CD80/CD86 on the antigen presenting cell (APC) and CD28 on the T cell. Negative co-stimulation is mediated by the cytotoxic T-lymphocyte associated protein 4 (CTLA-4) on activated T cells that binds to CD80/CD86 on the APC and suppresses T cell responses (negative co-stimulation). Belatcept is a CTLA-4 fusion protein that binds CD80/CD86 and blocks positive co-stimulation via the CD28 pathway, thus preventing T cell activation.

References Available Upon Request

LONG-TERM FOLLOW UP AFTER STEM CELL TRANSPLANTATION

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UF Health Assistant Professor of Medicine,
Division of Hematology.

Introduction: Hematologic stem cell transplant (HCT) is potentially a curative treatment option for a variety of hematologic diseases. Advances in the field of HCT over the past decade due to safer conditioning regimens, better post-transplant supportive care, and alternative graft sources has markedly increased the number of transplants performed leading to an increase in long-term survivors (Figure 1). This success has also brought the recognition of long-term health impact of HCT such as cardiopulmonary compromise, musculoskeletal disorders, endocrinopathies, and subsequent malignancies. These complications have the potential for substantial morbidity and mortality and negatively impact quality of life among HCT survivors. Continued lifelong surveillance for prevention, early detection and timely treatment of late complications is critical to optimize long-term outcomes. This review will describe the burden of morbidity experienced by HCT survivors and provide an overview of current follow-up recommendations.

Long-term survival after HCT: The prospect for long-term survival is excellent for 2-year survivors of allogeneic HCT. Based on a Center for International Blood and Marrow Registry (CIBMTR) retrospective study of 10,632 allogeneic HCT recipients, 85% of those who were alive and disease-free 2 years after allogeneic HCT are expected to become long-term survivors. However, life expectancy of HCT survivors continues to lag behind that of age- and gender-matched general population for at least 15 to 20 years after HCT. Disease relapse is the most common cause of late death among patients with malignant disorders. In most cases recurrent malignancy occurs within the first 2 years after the transplant, with few occurring more than 5 years after the transplant. Therefore, intense surveillance for recurrent malignancy after 5 years can be reduced. Following disease relapse, other causes of late deaths are chronic graft versus host disease (GVHD), organ toxicity, late infections and secondary cancers (Figure 2).

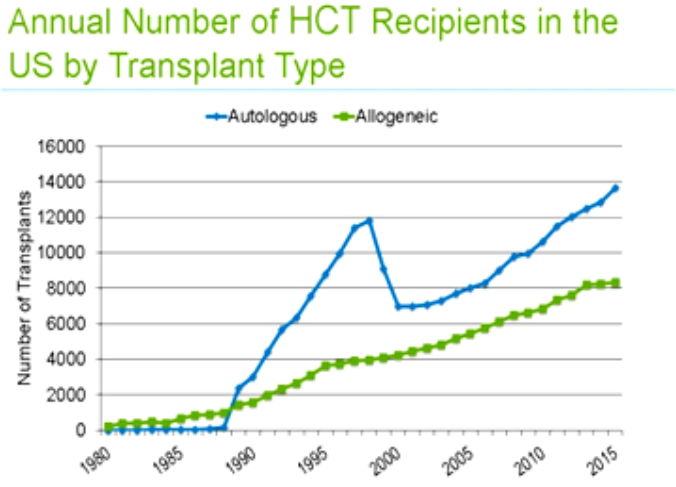

Figure 1. D'Souza A, Zhu X: Center for International Blood and Marrow Transplant Research (CIBMTR summary slides 2016) - http://www.cibmtr.org

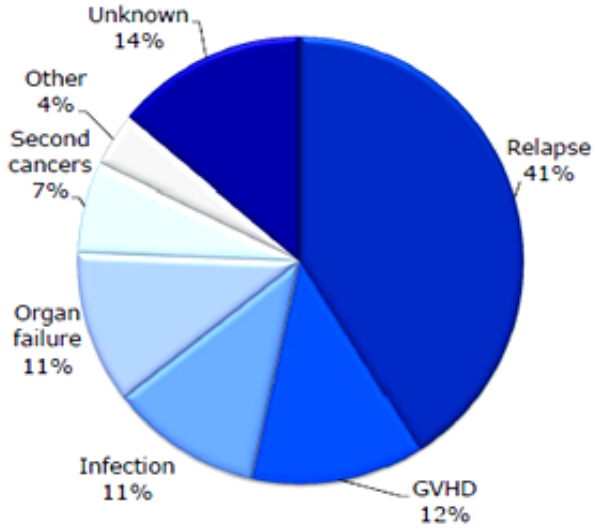

Figure 2. Late mortality among allogeneic HCT survivors. Source: Wingard et al, JCO 2011

Organ toxicity: The following highlights the most common organ toxicity seen after HCT and recommendations for screening and prevention

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based on Recommended Screening and Preventive Practices

Cardiovascular Complications - HCT survivors have an increased risk for cardiovascular complications such as coronary artery disease, peripheral arterial disease and cardiomyopathy. There is a 2-fold increase in risk of cardiovascular death among HCT survivors compared with the general population. Early onset cardiovascular events are primarily due to accelerated atherosclerosis due to radiation (pre-transplant or total body irradiation as a part of transplant conditioning regimen). HCT survivors also have a high prevalence of metabolic syndrome which represents a cluster of risk conditions associated with premature coronary artery disease.

Education and counseling on "Heart Healthy" lifestyles including regular exercise, healthy dietary habits and screening for dyslipidemia, diabetes and hypertension should be recommended to all HCT survivors. Routine clinical assessment of cardiovascular risk factors is strongly recommended at 12 months post-transplant and annually afterwards. In asymptomatic adults without any cardiac risk factors, cardiac imaging tests are not recommended. More frequent assessments-and if clinically appropriate-further cardiac evaluations may be indicated in patients at high-risk for cardiac complications, including patients who had mediastinal radiation, patients with amyloidosis, and those with pre-existing cardiac and vascular complications.

Endocrine Complications–Thyroid dysfunction Thyroid dysfunction is among the most common long-term endocrine complications post autologous and allogeneic HCT. Total body radiation (TBI), younger age at transplant, and presence of GVHD are the most recognized risk factors for thyroid dysfunction after HCT. Based on international blood and marrow transplant guidelines, thyroid function assessment is recommended yearly after HCT/indefinitely or in presence of relevant symptoms.

Gonadal dysfunction is very common in HCT recipients affecting as many as 92% for males and 99% for females. Age at transplantation, gender, pre-transplant therapy and intensity of conditioning regimen (especially high dose irradiation and busulfan) influence the degree of gonadal dysfunction. Women who were post-pubertal at the time of transplantation should have clinical and endocrinologic gonadal assessment 1 year after HCT. Subsequent assessment should be guided by menopausal status. Gonadal function in men (FSH, LH, and testosterone) is warranted by symptoms.

Skeletal complications-Loss of bone density is a well-known complication of HCT with reported incidence rates as high as 25% for osteoporosis and 50% for osteopenia in some studies. Older age, female gender, low body mass index, physical inactivity and prolonged systemic corticosteroids exposure (≥ 5 mg prednisone equivalent daily for >3 months) are well-recognized risk factors. Dual photon densitometry (DEXA scan) for adult women, all allogeneic HCT recipients, and patients at high risk of bone loss after HCT is recommended one year post HCT. Subsequent testing is determined by the findings of first DEXA Scan or to assess therapy response. Education and counseling of HCT survivors about physical activity and vitamin D and calcium supplementation is highly recommended to prevent bone density loss.

Avascular necrosis (AVN) of the bone is another debilitating skeletal complication post allogeneic HCT with a cumulative incidence of 3% to 10% at 5 years after HCT. In addition to risk factors for osteoporosis , TBI as a part of conditioning regimen has been associated with AVN. Joint pain and discomfort is the first manifestation of AVN. Most commonly affected joints are hips (more than 80% of cases), knees and wrists. Standard imaging (X-ray) may not detect the abnormality until late stages of the disease. Thus, MRI imaging is recommended in patients with persistent joint pain with higher risk of AVN for early detection and prompt referral to an orthopaedic specialist is recommended.

Ocular complications - Cataracts and sicca syndrome are amongst the most common ocular complications after HCT, as sequelae from the preparative regimen and prolonged use of corticosteroids after. The median time to develop cataracts after transplant ranges from 2 to 5 years.

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An annual eye exam with slit lamp examination is recommended for all patients who have had an allogeneic HCT and for those who are at risk of cataracts.

Oral Complications- The oral cavity is one of the sites most commonly affected by chronic GVHD after allogeneic HCT. The impact of chronic GVHD on salivary glands leads to qualitative and quantitative salivary changes (dry mouth) leading to development of dental caries. Patients with a history of oral chronic GVHD are at risk of development of intra-oral malignancy (especially, squamous cell oral cancer). Routine clinical oral assessment and dental health examinations are strongly recommended 6 months and 1 year post-transplant and annually afterwards. More frequent oral examination (every 6 months) is required in patients with chronic GVHD, oral mucosal lichenoid lesions, and/or a history of Fanconi's anemia. Patients should be encouraged to carry out effective oral hygiene, avoid smoking and chewing tobacco, and perform oral self-inspection.

Chronic GVHD:

Chronic GVHD, a potentially life-threatening post-transplant complication, occurs in approximately 40% to 70% of recipients of allogeneic HCT. It is an immune response of the donor T cells against recipient tissues. Chronic GVHD is not only a major cause of non-relapse mortality, it can lead to significant morbidity and decline in health-related quality of life. Thus, ongoing surveillance and early recognition of signs and symptoms of chronic GVHD is critical to optimize long-term outcomes (Table 1). When signs of chronic GVHD appear, collaboration with the transplant center to confirm diagnosis and management is necessary.

Table1: Most common patient-reported signs and symptoms and clinical manifestations of chronic GVHD (National Marrow Donor Program/ Be The Match: Screening for chronic GVHD).

Organ	Signs and Symptoms	Clinical Findings
Skin	Pruritus, dry skin Rash Changes in skin coloring or texture Sores Sweat impairment	Lichen planus-like features Sclerotic features Ichthyosis, Poikiloderma Lichen Sclerosis-Like Features Hypo-hyper pigmentation Maculopapular rash
Nails	Brittle nails Increased ridging in nails Splitting nails Nail loss	Dystrophy Onycholysis Nail loss
Eyes	Dry, burning, gritty eyes Excessive tearing Sensitivity to light Diminished visual acuity and/or blurring	Keratoconjunctivitissicca (KCS) * Photophobia
Oral	Dryness, Ulcers Swelling, pain and/or bleeding of gums Sensitivity to spicy foods, toothpaste	Lichen planus-like changes Ulcers , Erythema Pseudomembranes
Lungs	Wheezing, Shortness of breath at rest or with exertion, Dry cough	Bronchiolitis obliterans diagnosed by PFT Air trapping and bronchiectasis on chest CT
Muscle, Fascia, Joints	Muscle cramps, Muscle weakness Joint stiffness, Restricted range of motion Tightened muscles, tendons and fascia	Fasciitis Joint stiffness or contractures (decrease in ROM)
GI tract	Anorexia, Weight loss Nausea, Vomiting, Abdominal pain Diarrhea Difficulty swallowing dry foods/pills	Esophageal web Pancreatic exocrine insufficiency
Genitalia	Itching, dryness, burning Painful intercourse , painful urination	Lichen-planus like features Females: Vaginal scarring or clitoral/ labial agglutination

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Post-HCT vaccination: Levels of antibodies to diseases that can be prevented by vaccination decrease significantly within the first few years after HCT. Therefore, patients should be routinely revaccinated after transplant until they regain immune competence. Table 2 outlines the vaccination schedule for autologous and allogeneic HCT recipients based on international consensus guidelines.

Live vaccinations including Measles-mumps-rubella (MMR) and varicella-zoster vaccination should not be administered to individuals with active GVHD, on immunosuppressant therapy and patients less than 2 years post HCT.

It is strongly recommended that the patient's family members and close contacts be current on vaccinations to help protect the patient from exposure to infectious diseases. Patient's family members or close contacts can safely receive inactivated vaccines according to the recommended Centers for Disease Control and Prevention (CDC) schedule.

Table 2: Post HCT vaccination schedule- (National Marrow Donor Program/ Be The Match: Long-term Survival Guideline).

Vaccine	Time to initiate vaccine	Number of doses
Pneumococcal conjugate (PCV)#	3 to 6 months	3 to 4
Tetanus, diphtheria, acellular pertussis	6 to 12 months	3
Haemophilus Influenzae Conjugate	6 to 12 months	3
Meningococcal conjugate	6 to 12 months	1 to 2
Inactivated polio	6 to 12 months	3
Recombinant hepatitisB	6 to 12 months	3
Inactivated influenza	4 to 6 months	1 to 2
Measles-mumps-rubella (live)##	24 months	1 to 2

#Following 3 PCV doses, a dose of the 23-valent polysaccharide pneumococcal vaccine (PPSV23) to broaden the immune response might be given.
##Not recommended <2 years post-HCT, active GVHD, and in patients on immune suppression

Secondary cancers: Secondary malignancies including post-transplant lymphoproliferative disorder (PTLD), myelodysplasia (MDS), acute myeloid leukemia (AML), and solid tumors are well established complications in long-term HCT survivors. Risk factors associated with the development of secondary cancers include genetic predispositions of patient to develop cancer, older age at the time of transplant, use of TBI, chronic GVHD, and prolonged immunosuppressive therapy. MDS, AML and PTLD develop relatively early in the post-transplant period. Solid tumors have a longer latency time. Survivors of HCT have a 2 to 3-fold increased risk of developing subsequent solid cancers compared with the general population. Large retrospective series have estimated the cumulative incidence rates of secondary solid tumors at 1 to 2 percent at 10 years and 3 to 5 percent at 20 years after allogeneic HCT. Cancers that occur at increased frequency include skin cancers (squamous cell, basal cell, and malignant melanoma), and cancers of the buccal cavity, liver, central nervous system, thyroid, bone, and connective tissue. Therefore, it is important to notify HCT survivors regarding an increased risk of developing a malignancy following HCT and to encourage healthy behaviors (healthy diet, exercise, smoke cessation) and to also encourage reporting of any concerning symptoms. It is also important to encourage patients to reduce sun exposure through use of high SPF sunscreens or skin coverage. In addition to a routine physical examination, annual complete skin examination and dental evaluation to monitor for the development of skin and oral cancers is recommended. More frequent oral examination is required in patients with chronic GVHD, oral mucosal lichenoid lesions, and/or a history of Fanconi's anemia. In female HCT survivors screening for breast cancer should start at age 40 years. For patients who have received total body or chest irradiation, breast cancer screening begins eight years after radiation or at age 25 years, whichever occurs later. Routine age-appropriate cancer surveillance for other secondary malignancies should follow the recommendations outlined under the General Health and Preventive Screening section.

CARDIAC TRANSPLANTATION: A Long-Standing Tradition of Advanced Heart Failure Therapy in North Central Florida

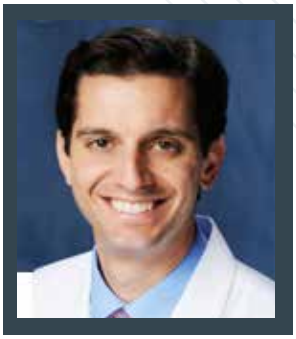
Juan Aranda, Jr., MD, FACC , UF Health Cardiology
Juan R. Vilaro, MD, UF Health Cardiology
Mustafa Ahmed, MD, UF Health Cardiology

Juan Aranda, Jr., MD

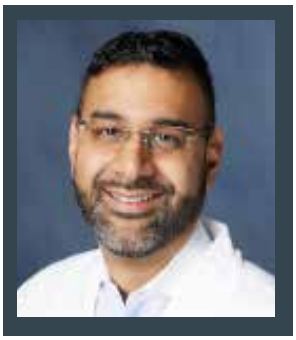
It is estimated that 6 million Americans have congestive heart failure, with 600,000 new cases each year. Half of these patients will have heart failure with preserved ejection faction, while the other half will have heart failure with reduced ejection fraction. In 2018 new medications, treatment strategies, and renewed efforts slowly have begun to change the prognosis and the natural progression of this disease.

Despite pharmacological therapy and new treatment strategies, about 200,000 Americans progress to New York Heart Association (NYHA) class 4 heart failure, which is characterized by symptoms such as shortness of breath at rest or with minimal exertion, low blood pressure, inability to take medications, and multiple hospitalizations. The mortality rate for NYHA class 4 heart failure patients is 50% per year. For these patients with advanced heart failure, current treatment options include cardiac transplantation, left ventricular assist device as bridge to transplant or as destination therapy (for those who are not candidates for heart transplantation), and palliative hospice care.

Cardiac transplantation remains the gold standard for treatment for the advanced heart failure patient. The first heart transplant was performed in 1967 by Christiaan Barnard in South Africa. Initially the results were not good. However, over the last 50 years there has been great progress in development of anti-rejection drugs, better surveillance strategies for infection, and simply a better understanding of immunology and issues related to the transplanted heart. As a result, over 5000 heart transplants are performed worldwide each year. Of these, 2000 are performed in the United States with 1-year survival around 90% and 10-year survival over 50%. The results are much better than the mortality rate of 50% at 1 year for advanced heart failure patients. In 2017 in the United States, over 3000 patients remained on the active transplant list.



Juan Vilaro, MD



Mustafa Ahmed, MD

At the University of Florida, the first heart transplant was performed in 1985. As of our 33rd anniversary, we have performed 1053 heart transplants with a 1-year survival rate at 89% and 10-year survival at 65%. A successful outcome for a potential heart transplant recipient begins with early referral of that patient from his/her primary care physician. Frequently patients are referred too late, with multi-organ damage that excludes them from advanced therapy such as heart transplantation. Recently the new heart failure guidelines put out the acronym "I NEED HELP" (see Table 1). Clinical risk factors such as intropic exposure, >1 heart failure hospitalization, end-organ damage, defibrillator shocks, low blood pressure, and high heart rate can help the primary care physician to make the decision to refer the patient to an advanced heart failure center.

Care for the new heart transplant recipient requires a multidisciplinary approach. Early on, 15% of heart transplant recipients will require a pacemaker, as the electrical system of the transplant heart is very sensitive during the organ procurement. During the first year of follow-up, rejection and infection will be the main issues of concern. Fifty percent of patients will be weaned off of prednisone before the end

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of the first year. Two-thirds of heart transplant recipients will become hypertensive. One-third will have renal dysfunction. Review of transplant medications during the first year will include two to three anti-rejection medications, medications for hypertension control, medications to reduce the risk of opportunistic infection, and statin therapy regardless of the patient's cholesterol level. It has been shown that statins, besides their cholesterol-lowering properties, have an immunologic effect on T-lymphocytes that provides a survival benefit in heart transplant recipients. After the first year, complications or issues that may arise include transplant coronary allograft vasculopathy and cancer, especially after 10 years post transplant.

Heart transplant vasculopathy is a form of coronary artery disease that develops in the transplant heart. Infections, rejection, and traditional risk factors for coronary artery disease combine to cause endothelial dysfunction, inflammation, and smooth muscle proliferation that begins to occlude the distal vessels of the coronary arteries, and thus cause heart allograft dysfunction. Fifty percent of heart transplant recipients have some form of transplant vasculopathy at 5 years post transplant. As the heart is denervated, most transplant recipients will not experience chest pain. Initial presentation will be heart failure symptoms with reduced ejection fraction, arrhythmias, or myocardial infarction. Annual surveillance with a stress test, echocardiogram, or cardiac catheterization will frequently be done to detect any presence of transplant vasculopathy. Heart transplant vasculopathy is one of the major limiting factors in heart transplant survival.

So what role does the primary care physician play in the care of the heart transplant recipient? Most of these patients will live several hundred miles from their transplant center. The primary care physician may be the first line of defense in identifying potential issues and thus play a critical role in the care of the patient. Upon a regular, routine visit with the primary care physician, emphasis should be placed on control of blood pressure, blood sugar, and cholesterol levels. These are traditional risk factors that can alter transplant survival. Surveillance for heart failure symptoms and cancer screening are important, especially in long-term recipients.

In summary, heart failure is a complex syndrome that affects thousands of patients. Despite multiple pharmacologic and treatment algorithms, some patients will require advanced heart failure therapies. Although heart transplantation is the gold standard for advanced heart failure therapy, limited donor supply requires that the candidates with potential best outcomes be considered for this limited therapy. A multidisciplinary team is required, including the primary care physician, to achieve the best outcomes in this patient population.

Table 1 Clinical risk factors that merit advanced heart failure referral

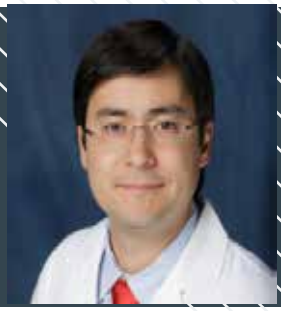
I NEED HELP

I IV inotropes
N NYHA IIIB/IV or ↑Brain natriuretic peptides
E End organ dysfunction
E EF <35%
D Defibrillator shocks
H Hospitalization >1
E Edema despite escalating diuretic
L Low BP, high HR
P Prognostic medication – downtitration of GDMT

References Available Upon Request.

The Changing Landscape of Lung Transplantation

TIAGO NAGUCHI MACHUCA, MD
Assistant Professor of Surgery,
University of Florida College of Medicine



Lung Transplantation Volume

According to the Scientific Registry of Transplant Recipients Annual Report published by the American Journal of Transplantation in 2018, lung transplantation continues to be the fastest growing solid organ transplant, with an increase by 56.4% in the number of transplants performed from 2007 to 2014 and a 13.2% increase from 2015 to 2016. In 2016, the last year included in the 2018 report, 2345 lung transplants were performed in the US. Similar data is reported by the International Society for Heart and Lung Transplantation, with an increase in number of transplants performed yearly and a record 4,122 lung transplants reported in 2015 (updated report with 2016 numbers expected to be published in Oct 2018). The most common indications are pulmonary fibrosis, chronic obstructive pulmonary disease, cystic fibrosis and pulmonary hypertension.

Increasing the pool of donor lungs

The remarkable increase in lung transplantation volume experienced over the last years comes from improvements in surgical and medical therapy, allowing for consideration of a growing population with end-stage lung disease. Moreover, despite the advanced lung disease, better control of potential comorbidities places patients at an increased chance for a successful recovery after transplantation. Interestingly, while age older than 65 years was considered a contraindication for transplantation not long ago, this population corresponded to 29.5% of transplants performed in 2016.

Unfortunately, the increasing demand of patients listed for transplantation was not matched by the supply of suitable donor lungs. Donor lung utilization criteria has always been very conservative and until recently, only 15% of multi-organ donors would eventually translate into a lung transplant. More recently, this number in the US is 22%. Close to 10% of patients listed die without receiving a lung transplant.

To overcome these barriers, ex vivo lung perfusion (EVLP) has been utilized to recondition high-risk donor lungs. EVLP is a preservation technique that was initially developed in Sweden in order to assess lungs from donors after cardiac arrest. The technology was further mastered at the University of Toronto and is now used for high-risk donor lungs as a reconditioning tool. Clinical trials were conducted in Canada, Europe and the USA. The Novel Lung Trial (Normothermic Ex Vivo Lung Perfusion as an Assessment of Extended/Marginal Donor Lungs) was an FDA-mandated clinical trial that has recently reached enrollment, and results are expected in the near future. This trial compared the outcomes of high-risk donor lungs preserved with EVLP to standard criteria donor lungs. Besides the current clinical application, there is a robust body of experimental research using EVLP as a platform to deliver therapies to the lung. The potential benefits are several: 1) lungs are kept functioning at normothermia with active metabolism; 2) there is a controlled environment with no liver or kidneys, avoiding end-organ toxicity and rapid clearance of drugs; 3) stability of up to 6 hours in clinical and 12 hours in experimental studies, with extended exposure to drugs (versus exposure for minutes at the pulmonary flush delivered during procurement).

Avoiding deaths on the waitlist

Besides increasing the pool of available donor lungs, another strategy to avoid deaths on the waitlist is through the utilization of extracorporeal membrane oxygenation (ECMO) for patients with acute on chronic respiratory failure. Improved

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technology nowadays provides pumps, oxygenators and circuits with lower complication rates and better biocompatibility profile. Moreover, a combination of specific cannulation strategies with dedicated ECMO cannulae are now readily available. The end result is a system that allows for patients to be supported for longer periods (days to weeks) oftentimes awake, extubated and ambulatory, being actively rehabilitated while waiting for new lungs. There has been a shift in the lung transplant community to avoid mechanical ventilation in patients waiting for a transplant, with recent algorithms including ECMO as a viable alternative.

Making the Operation Better

The same ECMO circuit used to keep patients alive while waiting for a transplant in the intensive care unit has gained increasing acceptance to enter the operating room and replace the formal cardiopulmonary bypass for intraoperative support. Consisting of a miniaturized circuit with enhanced biocompatibility, the theoretical advantages of using ECMO instead of cardiopulmonary bypass include: 1) less anticoagulation requirement; 2) less systemic inflammatory response syndrome (SIRS); and 3) maintenance of the blood-air interface. Clinically, these benefits translate into less blood product transfusion requirement, less coagulopathy, less time on the mechanical ventilator, in the ICU and possibly in the hospital. Even though most programs would only proceed with extracorporeal circulation during the transplant if the recipient becomes severely hypoxemic or hemodynamically unstable while on single lung ventilation, there has been large single-center evidence favoring the use of ECMO support for every case. The rationale behind this approach is a more controlled reperfusion on the newly implanted graft and the avoidance of right ventricular straining when one of the pulmonary arteries is clamped for the implant.

Quality of Life After Lung Transplantation

According to general candidacy criteria, lung transplantation should be considered for patients with a > 50% risk of death from lung disease in 2 years. It is important to note that besides providing a survival benefit, there is robust data supporting the assumption that lung transplantation also confers a significant quality of life benefit. Importantly, in an era of increasing utilization of lung transplantation in the elderly, the quality of life improvement is seen irrespective of age.

The Current Problem

The main barrier for improved long-term lung transplantation outcomes is chronic rejection. National statistics report an incidence of 43% at five years, with chronic rejection being the main cause of death after the third year of transplant. While the overall 5-year survival for a lung transplant is 55%, these numbers increase to 67% for recipients aged 35 to 49 years. Furthermore, it is encouraging to see single-center experience reporting 10-year survival in the 52% range for cystic fibrosis patients. Despite survival rates sometimes below what is observed for other solid organs, lung transplantation has gained increasing acceptance as the mainstay of therapy for advanced lung failure. It is expected that the growing body of evidence elucidating mechanistic pathways in chronic rejection will translate into better prevention and management strategies, resulting in improved lung transplantation outcomes.

References Available Upon Request.

Savvy Caregiver for Families Program

For information about these classes in Alachua County, please call:

Ana M. Robles-Rhoads at (352) 692-5265

To find out about classes in other counties call:

Tom Rinkoski at (352) 692-5226

Savvy Caregiver is a six week training designed for caregivers who assist persons with Dementia and/or Alzheimer's Disease.

The Savvy Caregiver Program is a unique approach to family caregiver education. The program offers ideas gathered from many disciplines and sources. Throughout the series caregivers are urged to learn, develop and modify approaches they can use to lessen their own stress and improve their particular caregiver situation

This course is ***free*** to all family caregivers, but you need to register! Those completing this course will:

- Increase skills and knowledge for caregiving
- Understand dementia and its progressive cognitive losses
- Gain confidence to set and alter caregiver goals
- Learn effective ways to increase family involvement
- Reduce adverse impacts of caregiving

ELDER OPTIONS

2018 Class Start Dates	Location
Tuesday, February 6, 2018	Clermont, FL
Tuesday, February 6, 2018	**Ocala, FL**
Wednesday, February 7, 2018	The Villages, FL
Thursday, February 8, 2018	**Gainesville, FL**
Monday, March 5, 2018	Chiefland, FL
Tuesday, April 10, 2018	Homosassa, FL

2018 Class Start Dates	Location
Tuesday May 8, 2018	Trenton, FL
Wednesday, May 9, 2018	Trenton, FL
Tuesday, May 22, 2018	**Gainesville, FL**
Monday, July 9, 2018	Chiefland, FL
Thursday, August 2, 2018	**High Springs, FL**

FMA ANNUAL MEETING 2018

August 3-5, 2018

Contact Dr. Carl Dragstedt to become a Delegate for the ACMS

(email carldragstedt@gmail.com)

Enjoy a weekend with your colleagues and family

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Call for ACMS Delegates - 2018!

The Florida Medical Association (FMA) House of Delegates is the legislative and business body of the FMA. Its members are the officers of the FMA, the elected members of the Board of Governors, and the delegates officially elected by the component societies, specialty societies, Specialty Society Section, Young Physicians Section, Medical Student Section, Resident & Fellow Section and the FMA Alliance. This year, the House of Delegates is meeting at Universal Studios at the Loews Sapphire Falls Resort.

The House of Delegates sets policy for the FMA by acting on recommendations from the Board of Governors and resolutions presented by component county medical societies, recognized specialty medical societies, special sections and delegates. Delegates elect Officers, Board members and AMA Delegates. Alachua County is entitled to have 27 Delegates representing us this year, the second largest physician representation in the state by county.

Below are a few of the resolutions voted on by the House of Delegates in 2017:

- Change the American Board of Medical Specialties Maintenance Process
- Reaffirm The Commitment Of The Florida Medical Association to End Maintenance of Certification Mandates.
- Clarification of The Definition Of 'Board-Certified' Physician In The State Of Florida
- Mental Health Confidentiality for Physicians and Medical Students
- Compliance Plan Toolkit
- Tdap amd Flu Vaccine Coverage-Reimbursement for Pregnant Women
- Zika Education for Physicians
- Change in American Board of Medical Specialties
- Creation of New Medical License entitled "Assistant Physician"=
- Physician Payment on Same Day of Service
- Recognition and Reimbursement for POLST
- Delegating Prior Authorization Responsibilities to Patient
- Keep Patient Satisfaction Separate from Reimbursement and Incentive
- Additional Funding for Medicaid
- An Act to Provide Compensation to Physicians for Service Rendered Telephonically
- Healthcare Access to All Floridians

Contact Dr. Carl Dragstedt, ACMS Secretary/Treasurer to sign up (carldragstedt@gmail.com). The commitment includes travel to Orlando for two nights August 3-5, with discounted hotel rates and passes to Universal Studios. You need to be a member of the ACMS and the FMA to participate.

Join us in Orlando as a Delegate for the Alachua County Medical Society and be a part of shaping the future of medicine in the State of Florida.

ACMS HAPPENINGS

L to R: John Colon, MD, ACMS Past President; Mrs. Arlene Colon, Alliance President; Mr. Jeff Sims; Mrs. Barbara Noble; and Howard Noble, MD.

ACMS Holiday Party
at the Residence of Dr. John and Arlene Colon
December 22, 2017

L to R: Mrs. Shannon Ashley; Robert Ashley, MD; and Mrs. Patricia Toskes.

L to R: Mrs. Patricia Toskes; Mrs. Ann Marie Mauceri; and Arthur Mauceri, MD.

L to R: Mrs. Sandy Fackler; Victoria Bird, MD; and John Colon, MD, MPH, ACMS Past President.

Keynote Speaker's Ilie Barb, MD; and Charles T. Klodell, MD.

ACMS January Dinner Meeting

North Florida Regional Medical Center
South Tower Conference Center
January 9, 2018

L to R: Matheen A. Khuddus, MD, ACMS President; Norman S. Levy, MD, ACMS Past President; and Christopher Bray, MD.

L to R: Ann Tong, MD, and Steven Roark, MD.

Ms. Erica Lager; Gregory Sherr, MD; and Allison Grow, MD.

L to R: Andrew Smock, MD; Ann Weber, MD; and Jackie Owens, ACMS Executive Vice President.

L to R: Ronald Jones, MD; John Colon, MD, ACMS Past President; and Thomas Beers, MD.

HAPPENI

Richard Proia, MD, and Ms. Aubrey Hall.

L to R: Christopher Caputo, DO; and Forrest Clore, MD.

ACMS January Dinner Meeting
North Florida Regional Medical Center
South Tower Conference Center
January 9, 2018

Mrs. Ann Marie Mauceri, and Arthur Mauceri, MD.

L to R: Jeffrey Catlin, MD; Norman Levy, MD, PhD; Mrs. Barbara Noble; and Howard Noble, MD.

Caroline Rains, MD, and Mack Tyner, MD.

Daniel Duncanson, MD; and Thomas Beers, MD.

L to R: Kathy Daughtry, Professional & Private Banker at BBVA Compass; Keynote Speaker Scott Medley, MD; and Darleen Morgan , Vice President & Business Banking Officer at BBVA Compass.

Practice Management Network Luncheon
Napolatanos Restaurant
February 3, 2018

Jay Hutto, CPA, James Moore CPAs, speaking at the Luncheon.

Keynote Speaker Scott Medley, MD, ACMS Past President and *House Calls* Magazine Executive Editor.

ACMS February Dinner Meeting
at Audi of Gainesville
February 13, 2018

Mrs. Connie Caranasos, and George J. Caranasos

ACMS HAPPENINGS

ACMS February Dinner Meeting at Audi of Gainesville

February 13, 2018

Dr. Andrew Evans, and Karen Harris, MD.

Keynote Speaker: Lisa Merlo, PhD, MPE.

L to R: Ronald Lee, MD; Brian Werbel, MD; Arthur Lee, MD; and Mr. Thomas Brinkmann, CPFS, Audi of Gainesville General Manager.

David Tyson, ACMS UF Student Representative and Ms. Madison Szar.

Mrs. Cherise Bartley and Caroline Rains, MD.

Brian Werbel, MD.

L to R: Dale Taylor, MD; Giuliano De Portu, MD; and Mr. Jay Hutto, CPA

Mrs. Roslyn Levy, Alliance Past President, and Mrs. Ellen Gershow.

ACMS February Dinner Meeting at Audi of Gainesville

February 13, 2018

UF Medical Students

Auto Enthusiasts reviewing the finer details of the Lamborghini with Tom Brinkmann, General Manager of Audi Gainesville

Mr. Colby Cohen, We Care Physician Referral Network.

Justine Vaughen, MD; and Florence Van Arnam, Robb House Museum Curator.

HAPPENINGS

Daniel Duncanson, MD, and Jay Koons, MD.

L to R: John Colon, MD, ACMS Past President; Samantha Whyte, ACMS Administrative Assistant; and Blanca Millsaps, ACMS Graphic Designer.

L to R: Mr. Jay Hutto, CPA, Arthur Lee, MD; and Brian Werbel, MD

Mike Dillon, MD and Scott Medley, MD.

Guests enjoying the ambiance and the buffet.

L to R: Jessica Peterson; Melissa Lock; Melissa Laliberte; and Colby Cohen of We Care Physician Referral Network.

Tap Room Tuesdays

Crafty Bastards

From L to R: Charles Riggs, MD; Scott Medley, MD, *House Calls* Magazine Executive Editor; Norman Levy, MD, PhD, ACMS Past President; and Carl Dragsted, DO, ACMS Secretary/Treasurer

From L to R: Jeff Sims; Madeleine Mills, VP, Marketing Manager at Community Bank & Trust of Florida; and John Colon, MD, ACMS Past President.

Mr. Don Cromer and Cindy Cromer, MD.

From L to R Front Row: Jose Fernandez, MD; Shalini Chaliki, MD; Fan Ye, MD; Frans Badenhorst, MD; Norman Levy, MD, PhD; Roslyn Levy. L to R Back Row: Rogers Bartley, MD; Mrs. Cherise Bartley; John Colon, MD; and Madeleine Mills.

Contribute to the Robb House Endowment Fund

ROBB HOUSE MEDICAL MUSEUM

This Victorian cottage built in 1878 became the home and medical office of doctors Sarah Lucretia and Robert Robb. Sarah Lucretia was the first woman physician in Alachua County. She practiced medicine from 1884 to 1917.

Dr. Mark Barrow has pledged to match all contributions of $1,000 or higher, up to a total of $10,000 in 2018 towards the Robb House Endowment Fund. Please donate today!

Robb House Endowment Improvements To Date:

- Carpet Replacement
- Paint Interior/Exterior
- Electrical Work
- Insulation Replacement
- Porch Repairs
- A/C Repairs
- Carpentry Work
- Undercarriage Repairs & Replacement

Robb House Endowment Donors

A Special Thank You to our Generous Donors below!

Dr. Mark and Mary Barrow
Dr. Thomas and Dr. Betsy Beers
Dr. Billy and Glenna Brashear
Dr. Cynthia Bush
Dr. George and Constance Caranasos
Dr. Joseph and Virginia Cauthen
Dr. Jean Cibula
Dr. Forrest and Kathy Clore
Dr. Chris Cogle and Ms. Alisa Guthrie
Colonial Dames XVII Century-
Abraham Venable I Chapter
Dr. Laurie K. Davies
Dr. Lee Dockery
Dr. Carl and Alissa Dragstedt (Grins and Giggles)
Dr. Leonard and Libby Furlow
Dr. Ann Grooms
Dr. Cherylle Hayes and Gary Schneider
Dr. Robert and Shari Hromas
Dr. Evelyn and Dr. Ronald Jones
Dr. Marie A. Kima
Mrs. Barbara Kirby in Memory of Dr. Taylor H. Kirby
Dr. Thomas Lau
Dr. Norman and Roslyn Levy
Dr. Judith Lightsey
Dr. Larissa A. Lim
Dr. Michael and Judith Lukowski
Dr. Terry and Jean Marshall
Dr. Thomas Martinko
Mrs. Shirley and Mr. William Matthews
Dr. Scott and Faye Medley
Dr. Walter and Barbara Probert
Dr. Nicole Provost
Dr. Eric Rosenberg
Dr. Glen Rousseau
Dr. Gerold Schiebler
Dr. Rick and Pat Tarrant
Florence Van Arnam
Dr. Justine Vaughen Fry
Dr. BJ & Eve Wilder

ACMS Board Highlights

Alachua County Medical Society - Board of Directors Meeting Minutes, May 2, 2017

Pursuant to notice, the Board of Directors of the Alachua County Medical Society met on Tuesday, May, 2, 2017 at The Cardiac and Vascular Institute

Secretary's Report: Dr. Winchester presented the following names for membership: Dennis Collins, MD; Forrest Clore, MD; Richard Neiberger, MD; and Wendy Stroh, DO. Dr. Levy moved approval of the new members, seconded by Dr. Colon.

Treasurer's Report: Dr. Winchester presented the YTD balance sheet and P & L statement. Revenue was53%of projected; and expenses were 42% of projected. Dr. Colon motioned for approval, seconded by Dr. Ryan, and the Board approved the report.

President's Report: Dr. Winchester introduced the new Student Representative Michael Dangl, a 1st Year Medical Student at UF. The Board welcomed Mr. Dangl to the Board.

Committee Reports:
Awards: Dr. Ryan announced that the committee is in the process of selecting the recipients of this year's awards and that Dr. Lawrence will notify the award recipients and thank all who have applied. The awards will be presented at the Annual ACMS meeting in May. Dr. Ryan also mentioned that next year all applications submitted would need to be in compliance with the guidelines or they will not be reviewed. Applications are to be limited to a 2 page submittal for the award.

Nominating Committee: The Nominating Committee will meet after the Board meeting to discuss the position of Secretary/Treasurer in the coming year. Due to unforeseen circumstances, Dr. Hayes will not be able to fulfill that position and has asked to step down from the Board.

EVP Search: Dr. Riggs stated that the Committee is in the process of conducting final interviews for the permanent EVP position among the three candidates selected.

Home Magazine Articles: Dr. Winchester thanked Dr. Dragstedt and Anna Beth West for writing content for Home Magazine. The ACMS is providing content for the magazine in exchange for ACMS member advertising which is considered an additional member benefit.

EVP Report: Dr. Lawrence announced the upcoming ACMS Annual Meeting & Awards Dinner on May 9th and invited all to attend. SunTrust is kindly sponsoring the event at Mark's Prime Restaurant. Ms. Owens mentioned that the FMA is sponsoring the July "Tap Room Tuesdays" event and that FMA President-Elect Dr. Katopodis will attend. In addition to ACMS members, all students and Residents are invited to attend the event.

In Memoriam

Stephen Lee Deardourff M.D.

(January 15, 1942 – January 12, 2018)

Dr. Deardourff was born in Greenville, Ohio on January 15, 1942 to David Deardourff and Ella Deardourff. He graduated from Greenville High School in 1960 where he was president of his senior class. In 1964 he began medical school at The Ohio State University College of Medicine. It was while he was a medical student that Steve would meet the love of his life, Margie Lynne George, then a nursing student.

Dr. Deardourff graduated from medical school in 1968 and married Margie in June of that same year. He enlisted in the US Army in 1968 and was sent to Tripler Army Medical Center in Honolulu, Hawaii, where he completed his first year of internship. In 1969 he began his de-facto medical internship, serving in-country in Vietnam as a medical officer and combat surgeon in the Army's 1st Infantry- "The Big Red One." He was stationed at the 24th Evacuation Hospital in Long Binh, the largest evac hospital in Vietnam, and as a combat surgeon he personally assisted in over 100 helicopter missions.

In 1971, while deciding where he would undertake his residency, he took a road trip to Gainesville, Florida where he reunited with his old Ohio State medical school buddies Dr. Philip Hess and Dr. Jack Hollenbeck. He fell in love with the town and the opportunities the medical community could provide him and during that same trip bought his first house in Northwest Gainesville. He completed his residency training in Urologic Surgery at Shands at UF in 1974. He open his private practice of Urology in Gainesville. He was the first Urologist at North Florida Regional Medical Center.

He served as Chief of Surgery at North Florida Regional Medical Center. In 2007, after 33 years as a practicing Urologist, Dr. Deardourff walked away from the operating table and retired. Dr. Deardourff is survived by his wife of 49 years, Margie Lynne Deardourff, his children Stephanie McKinney, Debra Larsen and Timothy Deardourff, and his grandchildren Matthew, Julia, Ryan, Max and Rory.

ACMS Board Highlights

Alachua County Medical Society - Board of Directors Meeting Minutes, September 5, 2017

Pursuant to notice, the Board of Directors of the Alachua County Medical Society met on Tuesday, September 5, 2017 at The Cardiac and Vascular Institute.

We Care Report: Tony Campo, We Care Director, presented the We Care report, detailing the services the clinic provides, the history of the clinic, funding, staff and accomplishments. Mr. Campo also discussed current projects and that the Board will receive future updates every other meeting.

Secretary's Report: Dr. Ryan presented the following names for membership: Hans H. Shuhaiber, MD; Christopher Bray, MD, PhD; Tina Brar, MD; Gabriel D. Paulian , MD; Laurie A. Solomon, MD; Charles Hwang, MD; Zhao Han, MD (Resident); and Muhammad U. Hamdani, MD (Resident), Dr. Riggs moved approval of the new members, seconded by Dr. Ryan.

Treasurer's Report: Ms. Owens presented the YTD balance sheet and P & L statement. Revenue was 68% of projected; and expenses were 61% of projected, resulting in net income of 96% of projected net income. Ms. Owens is currently working with the Accountant to separate the income statement and balance sheet of the ACMS and the ACMS Foundation, and will present this information for approval at the October Board meeting. The report was tabled pending the presentation of that material.

President's Report:
Member Benefits program: Dr. Khuddus introduced the ACMS Member Benefits program and the goal to provide members discounts on goods and services. Current discounts to be provided in the program include Gainesville Health & Fitness, Mercedes-Benz of Gainesville, SunTrust Bank, James Moore, Chef Ami, and the North Central Florida Safety Council driving package for teenagers.

New Member Highlights: Dr. Khuddus discussed a proposed program to highlight new members on our website and Facebook page to introduce them to the ACMS community.

Facebook Announcements: Upcoming events will be published on the ACMS Facebook page. Dr. Khuddus encouraged all members to follow our site and post related materials that may be of interest to the ACMS membership.

Board Member Table Initiative: Dr. Khuddus asked that each Board member fill one table with potential members at future dinner meetings as a way of introducing new physicians to the ACMS.

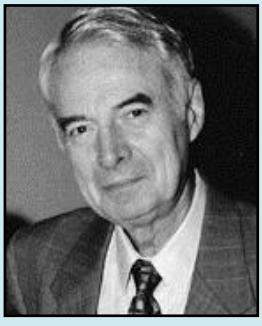
EVP Report: Ms. Owens announced that the ACMS website has been redesigned and invited all Board members to preview the site prior to posting it live. The new site is to be uploaded in the next two weeks pending Board modifications.

Ms. Owens proposed Mary C. Grooms as a Board Member. Dr. Levy motioned approval of the request, seconded by Dr. Ryan. The motion was approved by the Board.

A Physician Wellness Program has been implemented at the Duval County Medical Society. Ms. Owens has asked if there is a need for a similar program in Alachua County. The Board recommended that we observe the program in Duval as additional data is available to see if it would be feasible for the ACMS. The program was tabled for later discussion.

Future Dinner Meeting topics and locations were discussed for the upcoming year. Dr. Khuddus would like to introduce a Research Poster Session into one of the meetings for Residents, Fellows, and Students. The winner of the contest could receive a grant to attend the FMA meeting and present their research at the Paulus Poster Session.

In Memoriam



Richard Anderson, M.D.

(March 30, 1930 – February 19, 2018)

Dr. Richard Anderson graduated from Gainesville High School where he played football and basketball. He was a member of the of the National Honor Society and won the American History medal. He attended the University of Florida and was a member of Pi Kappa Alpha and Gamma Sigma Epsilon, honorary chemistry fraternity. Upon graduating from the University of Florida in June 1951, he received one of two regular Air Force commissions. He served one year in Korea, where he was a Communications Officer.

Dr. Anderson resigned after 38 months to enter Emory Medical School. At Emory, he was President of his class, President of Phi Chi medical fraternity and Alpha Omega Alpha, honorary medical fraternity. He married Leewood Shaw on March 21, 1959. Dr. Anderson was a Fellow in Endocrinology at the University of Florida College of Medicine. He was Chief of Staff at Alachua General Hospital for three years (1973-1975), President of the Rotary Club (1980-1981), and a member of Who's Who in America. He practiced medicine as an Internist for 40 years.

Dr. Anderson is survived by his loving wife Leewood Anderson of Gainesville; two sons, Richard, Jr. and Bruce Anderson; one grandson, Richie Anderson, all of Jacksonville, and one brother, David (JoAnn) Anderson.

ACMS Board Highlights

Alachua County Medical Society - Board of Directors Meeting Minutes, October 3, 2017

Pursuant to notice, the Board of Directors of the Alachua County Medical Society met on Tuesday, October 3, 2017 at The Cardiac and Vascular Institute.

Secretary's Report: Dr. Ryan presented the following names for membership: Benjamin Abo, DO; Caroline Holland, MD; Ken Krabacher, MD; Kendall Moore, MD; Tom Payton, MD; Dave Roberts, MD; and Taylor Zeglam, MD. Dr. Colon moved approval of the new members, seconded by Dr. Riggs.

Treasurer's Report: Ms. Owens presented the YTD balance sheet and P & L statement for the ACMS and the ACMS Foundation. ACMS Revenue was 77% of projected; and expenses were 68% of projected, resulting in net income of 107% of projected net income. ACMS Foundation Revenues were largely derived from Robb House Endowment and We Care donations, with expenses primarily related to the upkeep of the Robb House and distributions to We Care Clinic. Dr. Colon moved approval of the report, seconded by Dr. Riggs.

President's Report:
Member Benefits program: Dr. Khuddus introduced the ACMS Member Benefits program and the goal to provide members discounts on goods and services. The Board discussed several ideas of potential services that members might be interested in. The program will be implemented in January 2018.

Member Highlight/New Member Highlight: New members and randomly selected existing members will be featured on a new website page and social media, with a photo and biography of the physician.

Gator Angioclub: The Gator Angioclub is a case-based interventional forum for cardiologists and related fields. Meetings will be scheduled every two months at various venues, and will be sponsored by a local vendor.

ER Journal Club: Dr. Ryan will look into the possibility of creating an ER Journal Club to benefit emergency medicine physicians.

EVP Report: Ms. Owens announced that the ACMS website has been redesigned and posted. Content will be cycled on several formats including the website, House Calls magazine and the ACMS Facebook page. Child care services at future dinner meetings was discussed. It was decided that the ACMS would offer these services pending the fulfillment of a minimum threshold number of children to justify the service.

Alachua County Medical Society - Board of Directors Meeting Minutes, November 7, 2017

Pursuant to notice, the Board of Directors of the Alachua County Medical Society met on Tuesday, November 7, 2017 at The Cardiac and Vascular Institute.

We Care Report: Mr. Campo discussed the status of the We Care funding and grant awards for 2017. The We Care program was granted Choices funding for 2017-2018 totaling $124,458. The Florida Association for Free and Charitable Clinics (FAFCC) awarded We Care a grant totaling $55,400 for 2017-18 ($25K for Volunteer Recognition, Retention & Recruitment of Physicians, $20K for We Care staff and $10K for an audit of the ACMS financials as required through the FAFCC program). He also discussed the updates to the software program and the data on clinical care for the 2016-17 year.

Secretary's Report: Dr. Dragstedt presented the following names for membership: Siddharth A. Wayangankar, MD; Harry K. Meisenbach, MD; and Brandon Bodlak, DO. Dr. Levy moved approval of the new members, seconded by Dr. Riggs.

Treasurer's Report: Dr. Dragstedt presented the YTD balance sheet and P & L statement for the ACMS and the ACMS Foundation. ACMS Revenue was 95% of projected; and expenses were 80% of projected, resulting in an increase in net income of $21K over projected net income. ACMS Foundation Revenues were largely derived from Robb House Endowment, We Care donations, the FAFCC Grant, with expenses primarily related to the upkeep of the Robb House and distributions to We Care Clinic. Dr. Dragstedt moved approval of the report, seconded by Dr. Levy.

President's Report:
Gainesville Sun Article Update: Dr. Khuddus discussed the recent article submitted to the Gainesville Sun title "The Challenges Facing Physicians and Patients Today" addressing an incident at the office of Dr. Peter Gallogly.

Gator Angioclub: The Gator Angioclub next meets on December 6th.

New Board Members: Dr. Khuddus requested that Board members submit names for consideration for an additional Advisory Board Member to be appointed in 2018.

EVP Report: Ms. Owens discussed the FAFCC Grant that was awarded and the audit of the 2017 financial statements. Dr. Levy discussed interest in a future ACMS Ophthalmology Club and plans to get the club established.

A Note from our **Editor**

Flying Organs

SCOTT MEDLEY, MD
House Calls Executive Editor

Dr. Medley is a retired Family Physician
Volunteers at Haven Hospice

I have had the pleasure of knowing Dr Mike Lukowski for over 35 years. Although he will humbly deny it, Mike is one of the most talented and accomplished people that I know. Our friendship took an amusing turn in the early 1980's, when having lunch together at the "doctors' lounge" at Alachua General Hospital, Mike cut into his broiled chicken-spewing poultry juices all over my shirt and tie. We have often laughed about that incident since then, and in fact, I brought a coupla' pieces of fried chicken to this interview with him!

During a stellar career as an OB-GYN in private practice and then as a faculty member at UF, Mike realized his lifelong aspirations to become a pilot. One thing led to another, and Mike, who has never done anything half-way, learned to fly jet aircraft and then became the owner, CEO, and Director of Flight Operations at University Air Center (UAC), which handles essentially all the flights coming and going to and from Gainesville Regional Airport, including fueling the commercial airlines. A big part of the UAC operation is transporting human organs and blood products, so we naturally thought to include his story in this issue of House Calls devoted to organ transplantation.

University Air Center Building (the original Gainesville Airport location).

Editor (Dr Scott Medley): You already enjoyed a career as an exceptional, successful OB-GYN. What interested you in becoming a pilot?

Dr Lukowski: I guess I come by it naturally. My mother had 6 brothers, 3 of whom were pilots, and one of whom was a Navy Pilot serving in Vietnam. In my early childhood, I can remember laying in the grass in our back yard, being fascinated by the contrails of the jet airplanes flying overhead, a new sight over the earth's skies. Later in my childhood I built model airplanes of every shape and size. I was always captivated by airplanes.

Editor: Lots of physicians fly propeller-driven airplanes. What directed you toward jets?

Dr Lukowski: I began my private OB-GYN practice in 1981. I learned to fly in 1987. Seeing a good business opportunity, in 1989 I bought in to UAC, then known as Gulf Atlantic Airways. Knowing that jets were much safer, were taking over the market, and, of course, were much faster, I learned to fly jets in 1997

Editor: So you bought in to UAC and were learning to fly jets while you were still actively practicing OB-GYN. How did you manage all that?

Dr Lukowski: Well I guess I was younger and did not need as much sleep in those days. Also, I had a lot of time to study flying while sitting around waiting for women to have babies! I retired from UF OB-GYN in December, 2016.

Editor: What is the status of the company now?

Dr Lukowski: We have about 90 employees. 25-30 of these are pilots and instructors. We have about 20 airplanes; 8 of these are jets. And, yes, we have

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one helicopter.

Editor: Can you fly the helicopter yet?

Dr Lukowski: No, but I'm going to learn how! We do about a thousand charter flights per year and operate a large fueling operation, but our primary charter business is flying human organs and blood products. In fact, about 90% of our flying business is medically-related. We also teach flying and have trained many airline pilots who fly for the major airlines as well as many of our own charter pilots. In addition, we have a maintenance shop staffed with about a dozen mechanics that keep our aircraft and many privately owned aircraft maintained.

Editor: How did you get into the "transporting human organs" business?

Dr Lukowski: UF/Shands needed a fixed wing air ambulance service as well as an "organ transporting service". The Mayo Clinic in Jacksonville also needed to transport organs. We stepped up to fill that critical need. Transporting organs means saving lives.

Editor: I understand that you fly these organs around the state all night.

Dr Lukowski: Indeed, the majority of our flights are "all night". The transplant surgeons generally want fresh organs for their 'first OR case' at 8 AM. Therefore, we typically may fly during the night to a southeast location and back, procuring organs to be ready at UF or Mayo by 8 AM or so. If we get a call to procure an organ, we guarantee that we can be in the air within one hour. We have at least one person staffing our dispatch office 24/7/365 and we have as many as 6 crews "up and ready" at any time.

Scott Medley, MD; *House Calls* Executive Editor, with Mike Lukowski, MD; checking out one of the jets used to transport transplant organs.

"If we get a call to procure an organ, we guarantee that we can be in the air within one hour. We have at least one person staffing our dispatch office 24/7/365 and we have as many as 6 crews 'up and ready' at any time."

Michael Lukowski, MD; founder, owner, CEO and Director of Flight Operations at University Air Center (UAC).

Editor: Do you have an estimate for how many miles you have flown organs?

Dr Lukowski: I can tell you that we've flown a cumulative 5 million miles since 2011!

Editor: What about weather? I would think that when organs are ready and waiting, you must transport them.

Dr Lukowski: That's another nice thing about jets-weather is rarely a problem. We can fly over or around bad weather. But we don't fly through it! Occasionally the weather precludes even jets from flying.

Editor: About how long can various organs survive from the time they are harvested from the donor until transplanted into the recipient?

Dr Lukowski: You would have to ask the transplant surgeons for the exact times, but generally, hearts and lungs are the most time-critical, needing to be transplanted in perhaps 4-6 hours. We fly more livers than any other organs, and they need to be transplanted in about 6-8 hours. Generally, the kidney and pancreas are not as time-critical and often are transported on commercial flights.

Editor: Are your air speed limits adjusted for these flights?

Dr Lukowski: That's another thing we love about jets. Above 10,000 feet we can go as fast as the

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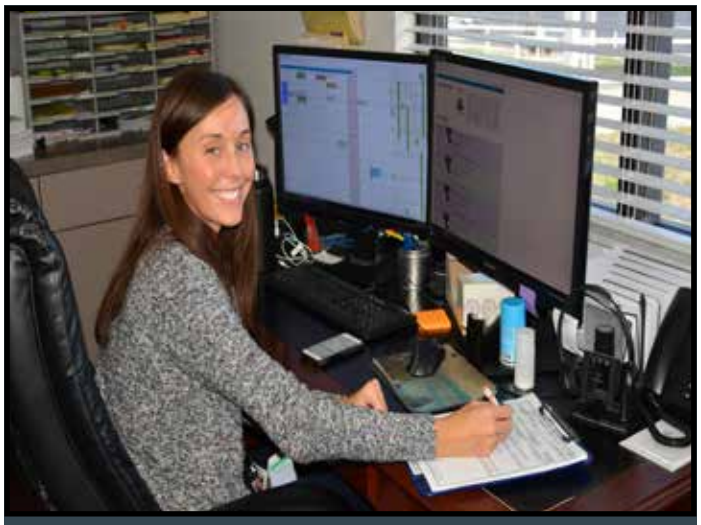

Brittany Hodik scheduling flights as needed at University Air Center.

aircraft is designed for, up to the speed of sound. Air speed limits around airports are 200-250 knots depending on the class of airspace. For instance, when procuring and transporting organs at night, we can be from Gainesville to Tampa in about 20 minutes. Our fastest aircraft cruise at 430 knots(500 mph)

Editor: What personnel are typically included in your organ-procuring flights?

Dr Lukowski: The pilot and copilot and the transplant team, which usually consists of one surgeon and 1-2 organ procurement technicians. Sometimes a fellow, resident, or medical student may accompany the team.

Editor: Have you had any particularly interesting experiences or incidents you would like to share with us?

Dr Lukowski? Many incredibly rewarding things have occurred. We recently had the pleasure of flying organs to be transplanted into one of my medical school classmates. We've had the distinct honor to fly thousands of organs, saving thousands of lives. We also have our Caravan "Cargo plane" which flies an average of one thousand miles through 3 states over about 6 ½ hours, flying blood, blood products, and lab equipment for Life South Community Blood Centers. This flight occurs every single night of the year except Thanksgiving and Christmas!

Editor: Anything else you'd like to add?

Dr Lukowski: We're very proud that we have the pilots and other employees who very professionally maintain our very difficult and demanding schedules. They have developed a great mutual respect and camaraderie with the organ transplant teams. We are also proud of our mentoring programs. We have had many young people who are interested in flying begin here pumping fuel and then going on to college, learning to fly, and becoming pilots and even instructors. We have sent many pilots to the commercial airlines, some of whom are now Captains flying overseas.

Editor: Thank you, Mike, this has been fascinating.

Dr Lukowski: Thank you! Be careful with the chicken!

After our interview was completed, we toured the very impressive UAC facilities, hangars, and an array of airplanes of all sorts. Then Dr. Lukowski had a little surprise for us. He proceeded to take us-our Executive V.P. Jackie Owens, her husband Jeff Simms, and myself- for "a little spin" in one of his jets. We climbed to about 6,500 feet, cruised at a speed of about 300 miles per hour, and marveled at the beauty we could see all around us during our smooth flight. An amazing end to a fascinating day! And, since I'm not accustomed to sitting in the front seat in a speeding jet, perhaps the only chicken involved was me!

Mike Lukowski, MD and Scott Medley, MD going through pre-flight procedures before taking off.

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