

Vincent's Thanksgiving Sense

In this issue, we start with a spotlight on ***Things to Do in Nice: Food, Glorious Food*** by Megan. Next we turn to the lessons learned from ***Silent to Talkies: The Evolution of VADs*** by Pamela Combs and ***Teamwork: Achieving True Collaboration in the Care of Pediatric VAD Patients*** by Monica Horn, followed by ***Lessons Learned*** by Erin Wells.

Did you know there is a link with Victor Hugo and La Villa Nice Victor Hugo to his famous novel *The Hunchback of Notre Dame* made into a silent film in 1923 starring Lon Chaney (The Man of a Thousand Faces)? From this success, Universal and Lon Chaney proceeded with another great silent film from another French author, Gaston Leroux's famous Phantom of the Opera. In 1925, the innovation of Technicolor was in its infancy with only shades of red seen in this silent film with the Masque of the Red Death scene.

Next, it's Angela Logan with ***Treatment of Respiratory Syncytial Virus in Lung Transplant: Fifty Shades of Gray*** and ***Updates from the Pathology Council***, with a Focus on AMR by Brandon Larsen. Afterwards, is the ***Giving Thanks*** by Rita Price, ***Fearbola*** by Sultana Peffley, Nicole Brooks, Marilyn Galindo and Vincent Valentine, ***Dedication, Deification and Divination of Voltaire: An Apotheosis*** as well as ***Dedication and Thanksgiving*** by Vincent Valentine. There are Special Interest Pieces and Megan Barrett announces the ISHLT 2015 Preliminary Program Released. Finally, we give a warm ISHLT congratulations to Lut Berben on the birth of her twins.

Vincent Valentine, MD
Links Editor-in-Chief

THIS MONTH'S FOCUS: **NURSING, HEALTH SCIENCE & ALLIED HEALTH** **INFECTIOUS DISEASES** **PATHOLOGY**

In the Spotlight: ISHLT's Guide to Nice, France: Food, Glorious Food!

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With our Annual Meeting planned in a location as beautiful as Nice, we know there is much to consider outside the walls of The Acropolis. With this in mind, we have compiled a tourist's guide to all the top attractions in Nice that we will break down to share in each new issue of the Links Newsletter.

This month's focus will be on everyone's top priority: Food. Nice is well known as a tourist attraction, but also for its lifestyle and food. The cuisine is traditional and Mediterranean, though it often features its own marker. The prestigious label of "Cuisine Nissarde" is awarded to restaurants that work to promote Nice's cuisine by undertaking to follow the recipes, use quality products and raw ingredients, provide customers with a warm welcome and information and comply with the health and safety regulations. The following restaurants are known to be Cuisine Nissarde:

- Restaurant Lou Pantail
- Restaurant Luc Salsedo
- Restaurant La Maison De Marie
- Restaurant Le Marché
- Restaurant Lou Bistrot Nissart
- Restaurant Les Palmiers
- Restaurant Le Safari
- Restaurant L'autobus
- Restaurant L'escalinada
- Restaurant Le Gaglio
- Restaurant La Gaité Nallin
- Restaurant Les Garnuches
- Restaurant Le Jardin
- Restaurant Lou Balico
- Brasserie De L'union

Another way to experience the complimentary flavors of Nice is on a walking tour through the heart of Nice's cultural center. Enjoy all of the history of Nice's gastronomy on a tour through the city: candied fruit, olive oil, socca, fruit, vegetable and fish markets, a stroll through the narrow shopping streets of the Old City.

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Silent to Talkies: The Evolution of VADs

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"We do not want now and we shall never want the human voice with our films."
D.W. Griffiths [1]

In reading Mr. Griffiths' quote, this author made the decision to step back and assess the evolution of the film industry and, curiously, found some clear comparisons to the evolution of VADs. Until the late 1920's, motion pictures were silent except for the complement of music provided by live orchestras. Up to this point, movies had enjoyed a wide degree of popularity [2]. This changed in 1926, when Warner Brothers, in conjunction with Western Electric, introduced a new sound-on-disc system. While many in the audience were enamored with the thought of finally hearing the voices of their favorite actors, the true result was that many legendary actors' careers failed to survive [2].

This transition from silent to "talkies" involved the expansion of film technology that unfolded into three stages: Invention, Innovation, and Diffusion. "Invention" encompassed the period when the synch-sound apparatus was in its developmental stages until Warner Brothers, a film company, purchased rights to the Vitaphone, a device to produce sound and apply it to film. The "Innovation" phase is described as the time when the film studios experimented with the various methods of applying sound to produce the best device. "Diffusion" describes the dissemination of "talkies" to not only a national, but international, audience with the addition of wiring theatres for sound [2]. Despite the challenge, the film industry not only survived this transition, but flourished in creating beautiful and legendary films to for future generations.

Though a different industry, one can find clear similarities between the evolution of the film industry and VADs. The maturation of the VAD world has, at times, been difficult, but with the inventions, such as smaller devices, innovations, like utilizing the centrifugal method, and demonstration of diffusion by presenting at international conferences, such as ISHLT, progression exists. Many naysayers, like Mr. Griffiths, exist within a world of discovery and change. It is those with the belief, hard work ethic, and innovation that bring forward technology that changes the world.

Disclosure statement: The author has no conflicts of interest to disclose.

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Teamwork: Achieving True Collaboration in the Care of Pediatric VAD Patients

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Currently, collaboration is a word frequently used in the healthcare environment. However, verbal repetition does not guarantee the genuine accomplishment of this valuable concept. This thoughtful insight became reality when our multidisciplinary team began to manage an increased number of young ventricular assist device patients awaiting heart transplantation. Even though we each possessed the knowledge to execute our individual professional responsibilities, realizing the exceptional outcomes achieved through genuine teamwork confirmed the need for all of us to ensure that we are able to develop this talent.

Children suffering from advanced decompensated heart failure often present a miserable image. Infants may be inconsolable, crying, irritable, intolerant of feeding, and experiencing physical discomfort from poor perfusion to the vital organs. Toddlers through adolescents show similar, but more age-typical responses to the ravages of a poorly functioning heart. Young children are unable to understand why they are so ill and may have frequent outbursts of frustration. This, along with life threatening symptoms of hypotension or dysrhythmias, leaves parents exhausted and grief stricken. Adolescents with extreme exercise intolerance may become depressed and are emotionally ill-prepared to deal with extended illness in an unfamiliar environment, away from friends and family. Staff caring for these patients and their families have been known to benefit from assignment rotation simply to prevent compassion fatigue.

Before the only currently FDA -approved ventricular assist device for small children, the Berlin Heart EXCOR, was available, ECMO could be offered when conventional medical therapy was exhausted. ECMO's inherent issues of course-limiting complications, including immobility, certainly made the pediatric VAD a more viable option. Families and healthcare teams were relieved to see a child who had previously been so ill and visibly suffering from heart failure, now be awake, speaking, playing, and even achieving developmental milestones. What a relief!

Then, the wait for a heart continues. It is well known that the number of pediatric donors is far less than for adults. The wait for an appropriate donor can extend many months. During this time, because the device is not approved yet for home use, the healthcare team must meet the challenges of maintaining stability and prevention of complications, all while promoting growth and development, and addressing any medical challenges unique to childhood. Among the typical care plan objectives are wound care and nutrition to promote healing and stability of cannula sites, management of anticoagulation to prevent embolic or hemorrhagic complications, and support for behavioral issues resulting from interruption of family systems. For an ill child, there may be additional tasks to recognize, such as food intolerance, pediatric medication metabolism and interactions, as well as family and culturally centered therapeutic needs.

Many talented professionals exist in the busy transplant and critical care arena. However, getting them to stop long enough to confer with yet **another** group isn't always realistic. A mix of personalities, varying levels of experience and distinct individualities all complicate total agreement in the workplace. Then, one

day, a routine email "call for abstracts" stimulated an idea: would a multidisciplinary team effort to produce an abstract about our collaborative work stimulate harmony?

Inspired by an enthusiastic request by a less experienced colleague to learn how to submit an abstract proposal, our process began with choosing the topic of simply working together to support this complex patient population, followed by assignments of key team members to search the literature for current evidence based practice related to our topic. The organizer set deadlines by which certain steps of the process needed to be completed and sent regular reminders to request summaries of findings, approvals of rough draft abstracts, and input for poster endorsement. It progressed with each co-author turning in their literature reviews, clinical experts discussing their interpretation of the reviews, obtaining agreement for a united effort towards common goals, defining roles, maintaining strong team presence and open communication. Team acceptance seemed inevitable.

When two posters describing our efforts were accepted for presentation by two national/international nursing conferences, the organizer selected co-authors to attend and present each of the sessions. Team effort seems routine now. Transplant/VAD surgeons and cardiologists, unit physicians, transplant/VAD RN coordinators, CTICU nurses, step-down unit nurses, unit nursing managers, pharmacists, child life therapists physical therapists, a social worker and a dietician all speak daily regarding each case with the transplant/VAD coordinators as the team communication liaisons. Team members have all familiarized themselves with this practice and with their other colleagues. We are in the process of pursuing further study of clinical measures of our results.

We are all inspired by the strength and courage of our pediatric VAD patients and families as they navigate the throes of advanced heart failure and mechanical circulatory support. We are impressed by their willingness to work with us during this sort of resource intensive process. Thanks Team!

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Lessons Learned

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*"Knowledge is knowing a tomato is a fruit.
Wisdom is not putting it in a fruit salad."* – Brian Gerald O'Driscoll.

On January 15, 2014, the Pediatric Lung Transplant Program at Cincinnati Children's Hospital officially opened its doors. This journey has offered many lessons for our team. Here are a few worth sharing.

Communication really is key. Can you repeat that?

There is not a presentation we give inside or outside of the hospital that doesn't contain this as a slide or talking point. From communicating our vision to patient flow to education plans, the value of direct and honest communication can't be underestimated. It is also important to ensure the message is being delivered consistently across disciplines, specialties, and the institution. There has to be buy-in on every level in order for a project of this magnitude to be successful.

Never underestimate the value of a process map.

Our core team provided invaluable transplant experience. We knew the way this *should* work and it all made sense in our heads. The challenge was getting our ideas out of our heads and onto paper in a format that made sense to everyone else. Walking through every step, from referral to transition, and putting it in a visual format has made our processes more organized and efficient. It has challenged us to not always default to doing things a certain way because "that's how we have always done it". It has also helped us to identify potential areas of improvement and to really think about how we can change the outcome for our patients and families.

It really does take a village.

When you are lucky enough to have previously worked on established, well-oiled teams, you realize you sometimes took for granted the elements that made those systems work effortlessly. Starting over with a blank canvas is a completely different ball game. Think a life-sized game of Tetris with thousands of moving, interlocking pieces. It takes a strong, committed, and diverse team, combined with a sprinkle of crazy and a dash of fun, to make this sort of endeavor not just work, but work well.

Don't be afraid to put yourself out there.

It can be very intimidating to be the new kid on the block, especially when you are in a new neighborhood. No one knows who you are and you have to earn your street cred. The only way to

do that is to put yourself out there. This is great advice especially for the next generation of transplant care team members. Offer to give a talk even if you hate public speaking. Find something that interests you, do the research, and write an abstract. Be willing to be a resource and share what you learn. Always look for ways to raise your own bar and push beyond your comfort zone. This will help to identify ways you can improve the care you give to your patients and their families. Most importantly, don't forget we all have something to learn from everyone we meet.

Always keep your eye on the prize.

At the end of the day, everything we do is to provide the best possible experience and outcomes for our patients and their families. The transplant life is not an easy one, but I truly believe it is a privilege to walk this journey with our patients and their families. I am humbled by the grace, strength and courage they display in the good times and bad, the highs and the lows, the big challenges and the small victories. Investing in what you do and finding what fills your cup is what makes the difference.

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Treatment of Respiratory Syncytial Virus in Lung Transplant: Fifty Shades of Gray

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The outcomes of treatment for respiratory syncytial virus (RSV) in the setting of lung transplant have remained unclear due to the lack of robust data published for this population. Implications of increased morbidity and mortality in the immunocompromised population make this a significant complication. As with many aspects of lung transplantation, clear black and white guidelines for RSV management do not exist; the challenges in a consensus for treatment are painted with fifty shades of grey.

The Black and White

Respiratory syncytial virus (RSV) is a single-stranded RNA paramyxovirus with seasonal outbreaks occurring primarily in the winter months. The incidence of infection in the lung transplant population ranges from 6-21% with mortality rates of 20%. Whereas mortality rates are 70% in the bone marrow transplant population; however, there is comprehensive published support in early treatment to reduce mortality for this population [1]. The clinical impact of community respiratory viruses has been shown to result in a decrease in FEV₁ at 3 months after infection and an increased incidence of acute rejection episodes; which lends towards an inclination for specific RSV treatment rather than supportive therapy alone [2].

The Shades of Gray

In comparing the ribavirin treatment options for RSV infection, the clinical endpoints most commonly examined include clearance of viral infection, return of lung graft function to baseline, incidence of acute cellular rejection and bronchiolitis obliterans syndrome (BOS) development. However, the common limitations to studies include small sample sizes, non-randomized design, differences in follow up time, and few head to head comparisons.

Generally, more practitioners are inclined to treat rather than rely mainly on supportive therapy of oxygen and bronchodilators due to the immunologic impact of viral infections, which in lung transplant recipients (LTRs) have increased difficulty in clearing viral infections due to lack of mucociliary clearance and impaired cough reflex. A progression to BOS development after infection has been reported as high as 60% in patients without any specific treatment [3], and allografts that have higher stages of BOS (≥ 1) at time of infection may have more detrimental effects on lung function [4].

Ribavirin is a purine nucleoside analog that has in vitro activity against RNA viruses including, but not limited to, RSV. The routes of administration include inhaled, oral, and intravenous, with inhaled ribavirin having an FDA approved indication for treatment in the pediatric population. Inhaled ribavirin has been the preferred route with the most published literature in LTRs and consists of dosages of either 6g daily over 12-18 hours for 3-5 days or 2g over 2-4 hours every 8 hours for 3-5 days [5]. The limitations to its use include the specialized respiratory delivery apparatus which may not be available in all institutions, as well as the exorbitant costs associated with the drug and hospitalization days for treatment. McKurdy's study in a cohort of 15 patients showed a return of FEV1 back to baseline in 70% of the patients by 90 days after inhaled ribavirin treatment. This study examined outcomes specifically in lower respiratory infections (RTI) in patients who presented with a median 25% decline in FEV1 during time of infection, and the author highlighted that the 3 patients that did not have a return to lung function all had underlying IPF, and 2 (14%) patients died within 30 days of diagnosis of infection. On the other hand, aerosolized delivery poses an increased teratogenic risk to female staff of child-bearing age.

Oral ribavirin is available primarily for use in hepatitis C treatment with hemolytic anemia serving as one of the main adverse effects with its use. The use of oral ribavirin in RSV treatment in LTRs was first described by Paelez and colleagues for its use on 5 patients. In this study, oral ribavirin was dosed at 15-20mg/kg/day for 10 days with confirmed viral clearance through nasal swabs in patients with lower RTIs. The patients presented with an average decrease in FEV1 by 21% at time of infection with a return to baseline in all 5 patients; additionally, no evidence of BOS was seen in this small cohort. In another study, where therapy was chosen by provider preference, a direct comparison of inhaled versus oral in 21 patients showed no difference between inhaled and oral in FEV1, mortality, or progression of BOS. However, this again was limited by a small sample, a short 6 month follow up time period, and a non-randomized design [6]. While the preponderance of clinical support is with inhaled ribavirin, the oral option is more economically favorable with a reported cost comparison of \$700 versus \$14,000 for drug cost alone [7].

Intravenous ribavirin is currently only available in the US through compassionate use in hemorrhagic fevers, and its use in RSV infection has only been reported in one study of eighteen symptomatic LTRs dosed at 33mg/kg in 3 divided doses, every 8 hours for 1 day; then maintained on 20mg/kg divided into 3 doses until a negative nasopharyngeal and throat swab was obtained. The average length of therapy was 8 days and all patients recovered to baseline FEV1 by 3 months. The reported cost savings was \$15,913 per 8 day course compared to the nebulized therapy [8].

50 Shades Darker

The sequel to this saga has yet to be written as more data is necessary to more objectively tailor therapies and elucidate the outcomes of therapies. Individual programs will have to weigh in on the financial burden of the current preferred aerosolized therapy. Perhaps a stratification of patients by severity of symptoms, upper versus lower RTI, degree of baseline graft function, % change in FEV1, and current immunologic risk are factors to take into account in order to individualize the decision of inhaled versus oral therapy. Other treatment options not detailed in this article include palivizumab

and IVIG, which have not had much documented success. While prevention continues to be the preferred option, ultimately, the ideal 'treatment' is the development of a vaccine in the near future.

Disclosure statement: The author has no conflicts of interest to disclose

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Updates from the Pathology Council, with a Focus on AMR

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As in recent years, AMR, both cardiac and pulmonary, has remained a strong focus of our efforts in the Pathology Council over the course of 2014. We expect that AMR will likely remain an important focus in the coming year as we seek to better understand this phenomenon and refine our diagnostic criteria for such.

Tutorial for Pathologists on Cardiac AMR

Most pathologists working in transplant centers who evaluate endomyocardial biopsies for rejection do so as a very small component of their broader clinical duties. In addition, most of these pathologists lack subspecialty training in cardiovascular or transplant pathology, and unfortunately, many of them are not members of ISHLT. One of our ongoing challenges in transplant pathology remains dissemination of knowledge about the practical application of rejection criteria to practicing pathologists on the "front lines."

In 2012, members of the Pathology Council, in partnership with the Society for Cardiovascular Pathology and Association for European Cardiovascular Pathology, began to address this challenge by developing an online tutorial on acute cellular rejection for pathologists (<http://scvp.net/acr/index.html>). This tutorial has been well received, and has been translated into multiple other languages, including Spanish, Italian, Japanese, Russian, and French.

To expand upon these educational efforts, this year the Pathology Council, also in partnership with the SCVP and AECVP, has developed a similar, companion tutorial on cardiac AMR (<http://scvp.net/amr/index.html>). This tutorial is nearly complete in its English form, and recently "went live." The tutorial includes an appropriately detailed, yet succinct and practically oriented overview of endomyocardial biopsy evaluation for AMR, including a discussion of specific grading criteria, along with a lavishly illustrated guide to usage of immunohistochemistry and immunofluorescence for this purpose. This tutorial also includes considerations specific to the pediatric population and a valuable discussion on artifacts and potential mimics of cardiac AMR (also well illustrated). A quiz component of this tutorial remains under construction and will be available in the near future. We expect that this tutorial on cardiac AMR will be similarly well received and will represent a valuable resource to pathologists around the world who are asked to evaluate these specimens, particularly to those who may not be members of ISHLT or who do not routinely encounter these specimens. We welcome feedback and suggestions for improvement from anyone who uses this tutorial.

Progress in Pulmonary AMR

Members of the Pathology Council actively participated in the Consensus Meeting on Pulmonary AMR that was held during the 34th Annual Meeting and Scientific Sessions held in San Diego, California in April 2014. The published literature, diagnostic practices, and areas for future investigation were discussed. The recommendations of the 2012 Pathology Council review were reaffirmed with a proposal to further evaluate the utility of C4d staining in the diagnosis of pulmonary AMR.

The experience of most members of the Council is the infrequent demonstration of C4d staining of interstitial capillaries in the setting of circulating de novo DSA and clinical evidence of graft dysfunction. Technical, interpretative, and mechanistic considerations were discussed with a goal to investigate possible explanations for the insensitivity of the marker.

To address these technical and interpretative issues, unstained slides from cases showing strong C4d staining will be circulated to multiple transplant pathologists at multiple institutions, for individual center staining and evaluation. Additional cases will be collected and digitalized for review and grading by pathologists, with the intended goal to present the findings at the 35th Annual Meeting and Scientific Sessions in Nice, France.

2015 Annual Meeting & Scientific Sessions in Nice, France.

Please join us for the following pathology-oriented sessions in Nice next spring:

Antibodies in Lung Transplant: Mayhem, Mediators, Mechanisms, and Management, where our rapidly evolving understanding of pulmonary AMR, its diagnosis, and its treatment will be reviewed and discussed.

When Worlds Collide: Heart and Kidney, where the role of venous congestion in heart failure and the cardiorenal syndrome will be discussed.

B-Cells in Transplantation 2015, where our current understanding of the role of B-cells in humoral rejection will be reviewed and therapeutic implications discussed.

Chronic Lung Disease Associated Pulmonary Hypertension: Mechanism, Pathology, and Clinical Impact, where the pathology of pulmonary vascular disease in the setting of pulmonary fibrosis will be reviewed, along with a discussion on the somewhat controversial treatment approaches for this condition.

Clinically Relevant Thoracic Transplant Pathology: A Primer for Clinicians, Nurses, Pharmacists, and Other Members of the Transplant Team, where our pathologists will present a broad yet practical overview of cardiac and pulmonary transplant pathology for their non-pathologist colleagues, including discussions on acute cellular rejection, antibody-mediated rejection, and chronic allograft vasculopathy in each of these organs.

For more details about these and other exciting symposia, please visit the 2015 Preliminary Program at <http://www.isHLT.org/meetings/annualMeeting.asp>.

See you all in Nice!

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Giving Thanks

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With Thanksgiving just around the corner, we all take the time to take a good long look at our past and present and give thanks for the things that really matter. To Rita Price, our Membership Certificate Calligrapher, it is the opportunity to practice her craft and have it admired by many of our members. If you have ever ordered a membership certificate, you have witnessed her art first hand. If you haven't, you probably should. She is fantastic! Recently, we received the following email, in which she expressed her gratitude for the continued opportunity, as well as her love for creating each piece as an individual work of art.

I am happy to see that certificate orders are still coming in. There was a lull for a while and I was beginning to worry that my skills had gone the way that technology leads. This recession touches us all. I don't make a lot of money on these, but I do enjoy creating beautifully lettered tributes to outstanding contributors to humanity. Some calligraphers hate having to write out foreign names & charge a "surcharge" for such. Personally, I love the unusual. And, I love the written word in beautiful letters. To me, each name is a celebration--a person who matters. I also appreciate the fact that your organization does not opt for computer generated typefaces or fonts & you don't just give out typed certificates. You are rare. Scribes, of course, have had this problem with public conception of what they do since Gutenberg invented moveable type. That's been a long time--since the Middle Ages. We are used to it therefore we appreciate people like you as patrons. Gutenberg's goal was mass dissemination of the written word to spread knowledge. I revere him since I use all the modern conveniences of technology as it is today. Yet, there is something special about calligraphy. It elevates the written word. It is distinct, original and from one human hand propelled by a beating heart to the heart of the recipient. I can't think of a better way to describe it. I am honored to be your scribe. Heart and Lung is your business in Science. Your achievements, even in the work day world of the office, are so necessary. Yet, you chose me to letter in Art.

Science and Art go hand in hand, heart to heart. Thank you for appreciating this. Your certificates are testimony to this. They are well designed, they are colorful. They are embossed. They do not lend themselves well to being run through a computer printer for mass distribution. They are printed on quality paper which does not bleed, smear, or require a sharpie marker or chemical sprays to complete. They love the touch of a pen nib with hand ground ink and a deft stroke propelled by a human hand and heart and years of study of lettering to complete. They show that you are proud of your organization and who you are and the immeasurable good that you do.

Thank you. I am descended from a long line of heart patients whose lives were extended due to heart research. They were not transplant recipients, but it is such a miracle that many others are given this special gift. I personally know and understand what your organization is about. There isn't a name that I write on your certificates that I don't thank for their contributions in Science. Their names mean Life to many families. My contribution is Art, and gratefully, so. I thank you for the opportunity and also for the gift of being able to contribute.

Sincerely,

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Fearbola

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Flush. Gurgle. Chomp. Pounding. Gulp. Type. Clack. Inhale. Exhale. These are the sounds we make every day, the interactions each of us has with our environment and with each other. Each action is a potential opportunity for transmission of our distant relatives. No, not your great aunt twice removed - the organisms with which we share our environment. We have special names for them: *E. coli*, tuberculosis, *A. lubricoides*, *C. difficile*, and Ebola. Some of these relationships are symbiotic, others are commensal, and still others are parasitic. With such diverse invaders, how do *Homo sapiens* protect themselves from the parasitic organisms that threaten their existence?

Splish Splash! We've all heard the importance of hand washing and covering our coughs/sneezes in disease prevention, but let's review the steps in a little more detail. It is necessary to wash hands: before entering and upon exiting a patient's room, before and after touching the patient, between patient contacts, before putting on and after taking off gloves, after any contact with body fluids, and when visibly soiled. In short, "wash in and wash out" or "gel in and gel out" is a good criterion to consistently uphold. Steps of hand hygiene:

1. Use warm water to wet the hands.
2. Apply antiseptic soap (containing chlorhexidine).
3. Rub hands together and apply to all surfaces of the hands.
4. Wash hands for at least 15 seconds.
5. Rinse, avoid splashing.
6. Keep hands pointed towards the sink so that runoff will go into the sink and not down the forearms to the elbows.
7. Dry well with paper towels and use the paper towels to turn off the faucet. Discard paper towels.

Hand washing is the most cost effective and efficient manner to decrease the spread of ailments. Another such method is the "dracula cough/sneeze" in which the sneezer covers their face with their inner elbow and expels the forceful droplets into their shoulder, behaving as though they are enrobed in Dracula's cape. Bet you hadn't realized that Count Dracula was both charming and hygienic! However, the cape has in fact been long held as a garment of protection, be it from the

cold weather, rain, soil and now germs. The scientist's modern day cape is commonly known as the 'white coat,' which is universally worn to protect its wearer's clothes from the onslaught found in particles, droplets, and air of the clinical environment. But a charming white cape and clean hands aren't the only things we need to fight against parasitic organisms - we've learned how best to adapt to each organism's infectious pattern [1].

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Bordetella pertussis, *Neisseria meningitidis*, and influenza are spread through droplets larger than 5 microns in diameter. Achoo! An organism just caught a wave onto your face. Droplets are propelled shorter distances (<3 feet) and therefore droplet precautions are less stringent than those for organisms indiscernible in ambient air. We don surgical masks upon entering patient rooms while patients wear the same during transportation [1]. We have also developed vaccines that can defend us from these organisms pre-emptively. Vaccinations prime our immune system to defend and attack the recognized intruder. Despite these efforts, 17,325 cases of pertussis have been reported to the CDC in 2014 thus far. The CDC reports this as a 30% increase from the previous year [3]. At this rate, Whooping cough will cease being a tale of our grandparents and become a current event instead.

Clostridium difficile (*C. diff*), norovirus, and Methicillin resistant *Staphylococcus aureus* (MRSA) are disseminated through bodily fluids- uncontrolled secretions, uncovered wounds, and diarrhea. Splat! Slap! Organisms ride these exit floods or excreta and generate the same storm at their next stop. When a patient is suffering from uncontrollable release of bodily fluids rife with infectious agents, then we must exercise strict contact precautions. This includes wearing gloves, a gown, and washing hands prior to entering and upon exiting a patient's room. It is especially important to use antimicrobial soap to remove toxins/spores produced by *C. diff* and others of the like [1]. *C difficile* is the culprit in 337,000 infections and 14,000 deaths every year in the United States, imagine the worldwide impact [4]. Norovirus is notorious among cruise ships, causing illness frequently; MRSA is dreaded by most healthcare workers because it actively develops resistance to even our newest biocides.

In the news, we are bombarded with images of people in HAZMAT suits treating people infected with Ebola. Whiz! It's scary. Voomp! Ebola is highly contagious, and its mortality rate can be as high as 90%. Neither a cure nor a vaccine has been well established. However, the spread of Ebola can be prevented with contact precautions and decontamination with bleach or alcohol. Ebola is transmitted

through direct contact of bodily fluids (blood, saliva, urine, semen, etc.) and contact with contaminated surfaces like bedding and linens used by the infected person. Crinkle. Ebola is not airborne. Patients are not contagious until they start to have symptoms, which include fever, chills, bleeding, vomiting, and diarrhea. Necessary viral load to contract the pathogen has yet to be determined. Furthermore, some individuals who have had exposure to the virus never experience clinical symptoms and are never aware of their body's infection.

The World Health Organization (WHO) recommends the strict use of personal protection equipment (PPE) that includes face protection, a non-sterile long-sleeved gown, and gloves. PPE equipment acts as a barrier that keeps Ebola virus out. Hazmat suits were designed for toxic environments in which the wearer requires a combination of airborne, droplet, and contact precautions. From what you now know about Ebola virus, you can easily understand why HAZMAT suits are not required to be worn by healthcare providers when caring for patients suspected of Ebola infection. Regardless, careful precautions should be taken when removing any PPE:

- 1) First remove gloves.
- 2) Remove eyewear.
- 3) Remove gown by pulling it away from you.
- 4) Remove mask.

Contact tracing is also a vital part of preventing the spread of Ebola in the community. Contact tracing involves informing individuals who have been potentially exposed of the worrisome symptoms to be aware of. If the contact displays the symptoms, they are encouraged to immediately seek care and are placed in isolation; then the process repeats using their potential contact exposures. If they do not display symptoms within the 21-day incubation period, nothing occurs. Therefore, all contacts with potential for exposure are not unnecessarily isolated and monitored for 21 days [5].

13,703- the number of recorded Ebola cases in the world; 4,922 - the number of deaths caused by Ebola during this outbreak as of October 27th [6]. Influenza/pneumonia killed approximately 50,000 people in the U.S. in 2011. Why then do people neglect to receive their annual influenza vaccine? Heart disease is the number 1 killer in the US – around 500,000 people die in the US from heart disease every year. Heart disease kills 10 times more people than any infectious disease [7]. There are more mortalities associated with operating motor vehicles, something we all do multiple times a day: 3,328 people were killed in events linked to distracted driving in 2012 [8] and 76, 309 individuals were involved in fatal motor vehicle accidents in 2009 [9].

Ebola is serious, it is the unknown, and adequate attention along with the appropriate precautions must be observed. The aforementioned diseases were once cut from the same loin as Ebola – each condition was once unfamiliar and novel, and each was given ample attention. The purpose of this article is not to belittle Ebola, but to remind us of epidemics that are being overlooked. It is imperative we observe the standard precautions, not only for the sensational diseases but also for the known intruders. Lest the increased time spent disregarding them results in such a built up capacitance that our internal capacitors can no longer contain their bio destructivity, $\tau = RC$, after all. And with that, here is a quote by Samuel Johnson, the renowned English author, "Health is

merely the slowest possible rate at which one can die." So, let's all die as slowly as possible and observe the following definition of universal precautions: If it's wet and it's not yours, don't touch it!

Disclosure statement: The authors have no conflicts of interest to disclose.

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Dedication and Thanksgiving

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About a century prior to the first human lung transplantation by Dr Hardy and his collaborators, a dedication of the National Cemetery at Gettysburg occurred on November 19, 1863. Selected for the keynote speaker was the former president of Harvard, leader of the Greek revival and one of the most noted and eloquent orators of that time, the Honorable Edward Everett. In response to the decision to invite the President, Abraham Lincoln, for a few appropriate remarks, someone retorted, "I don't know – all he does is tells jokes. I think he will be an embarrassment." Everett's address lasted for two hours. Lincoln's brief remarks took a little more than two minutes. Today, when we refer to the *Gettysburg Address*, we think of Lincoln's speech.

Although November is a month celebrated with two other perhaps more recognizable holidays—Veteran's Day or Day of Peace as it is known elsewhere, and of course, Thanksgiving – Lincoln's *Gettysburg Address* is what I suggest you revisit. Even today, we can pay homage to its meaning and how it and these holidays of gratitude link us to what we've dedicated our lives.

Lincoln's eloquent speech, albeit seemingly abstract, was as deliberate and precise as a swinging pendulum taking us not only to and fro in time but also back and forth in life and death. It begins with his timeless two rhyming words sweeping us to our past.

"**Four Score and seven years ago,**" tolls like a cathedral bell beckoning our attention. It is a reference to the American Revolution and the *Declaration of Independence* (1863 – 1776= four score and seven years). Immediately we are reminded of our inter-relatedness by the familial and obstetrical imagery that follows. Reference to "**our fathers**" is a family relationship emphasizing that we are descendants of these founders. With obstetrical analogies, "**brought forth on this continent a new nation conceived in liberty**" we take pride in the life of this land. From here Lincoln culls out of all possibilities the first of the self-evident truths..."**all men are created equal.**" And with that we know what the war is ultimately about—giving those who have died the greatest possible honor by advancing Thomas Jefferson's principle that these fallen have enabled this nation yet another new birth.

After only a single sentence, Lincoln's words swing us out of our past and into the present. "**Now we are engaged in a great civil war...**" Time is suspended and dangles without ties to the battle, the cemetery, the confederacy or the army of the Potomac. Instead we are grounded in the immediate occasion, "**we are met to dedicate a portion of that battle-field**" and we are resolved to acknowledge the seamless connectivity of life and death, "...**for those who here gave their lives that that nation might live.**"

With a somber cadence Lincoln acknowledges, **"It is altogether fitting and proper"** to meet for this dedication, yet he subverts that expectation with grave repetitive sacred phrases. **"But, in a larger sense, we cannot dedicate, we cannot consecrate, we cannot hallow this ground."** We can't meet for this dedication, because it has been done already by the brave acts of those who fought here. His rhetorical strategy was an antithesis contrasting the living with the dead, and humility with pride, **"The world will little note, nor long remember what we say here, but it can never forget what they did here."** The latter four words are his summary of the battle and clearly he views that their actions speak louder than any words expressed that day.

From the present, **"We have come to dedicate a portion of that field, as a final resting place..."** the pendulum takes its final swing toward the future in a rededication, **"to the great task remaining before us..."** The standard eulogy developed in Ancient Greece by Pericles gives a transformative theme of praise for the dead and advice for the living. Lincoln reverently honors the valiant dead and advises that we follow in their devotion such that his focus shifts from the nation to the world. Lincoln never specifies the "great task" remaining. This is a subject for interpretation. What about our work? What about honoring the dead, the dying patients and the organ donors that might motivate in us the devotion Lincoln encourages? What of the great task he suggests? Perhaps one could be to improve our ability to care for others. Another greater task may just have a personal meaning for health care providers, patients, leaders or anyone in the world.

Perhaps we should focus on what we do rather than what happens. This process is more valuable and may prove more successful than simply reporting data. In other words, instead of stating our outcomes and simply recording the results, we should explain our data and improve the process for what's best for all.

The Honorable Edward Everett was the first to recognize this in a letter to Lincoln, he writes, "I should be glad if I could flatter myself that I came as near to the central idea of the occasion in two hours as you did in two minutes." The ever so humble Lincoln replied, "In our respective parts yesterday, you could not have been excused to make a short address, nor I a long one. I am pleased to know that, in your judgment, the little I did say was not entirely a failure."

Every year around Thanksgiving I read from the coveted Pulitzer Prize winning book, *Abraham Lincoln* by Carl Sandburg. Chapter 38, *Lincoln Speaks at Gettysburg*, is one I encourage all to read, paying particular attention to the final six paragraphs. In these final words there is a "...tall old clock in a quiet corner telling time in a **tick-tock deliberation.**" Whether, "...the orchard branches hung with pink-spray blossoms or icicles of sleet, whether the outside news was seed time or harvest, rain or drought...", births or deaths, **air moving in and out of airways effortlessly** like the swing of a pendulum. "In a row of graves there is an unidentified boy who had listened to its tick-tock and learned to read its minute and hour hands. His years measured off by the swinging pendulum had gone awry and swallowed with other men into a deep sea of man-made smoke and steel."

"The mystery deepened and moved with ancient music because a solemn Man of Authority stood at the tombs of the unknown soldiers and spoke the words. We cannot consecrate, we cannot hallow this ground." **The brave men, living and dead, who struggled here, have consecrated it far**

above our poor power to add or detract... from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion.

Shortly after Lincoln's return from Gettysburg, he was sick with small pox. He quipped, "I now have something I can give everybody." Contagion.

Happy Thanksgiving. *And a special Thanksgiving to my writer friend, Julia Hayes.*

Disclosure statement: The author has no conflicts of interest to disclose.

ISHLT 2015 Preliminary Program Released

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This booklet is loaded with a wealth of information about the upcoming meetings in Nice, France, in April 2015, and includes beautiful artwork and stunning photographs of the glorious city and surrounding area.

Included on this book are the artful renditions of our **Call for Abstracts** and **Abstract Awards**, as well as general information and highlights of **ISHLT, Nice**, our **Annual Meeting**, and the **President's Cocktail Reception**. It also contains information on **Continuing Education**, and the **Scientific Program Committee**.

Beyond general information, the Preliminary Program also includes a **Schedule of Events** for the annual meeting and a list of helpful **Acronyms**, as well as **Summaries of the Symposia** and of the **ISHLT Academies** and **Masters Courses**. Finally, there is a **Registration Form** for the Annual Meeting at the end of the Program.

We hope you will join us in April and we look forward to seeing you in Nice!

Disclosure statement: The author has no conflicts of interest to disclose.

Outta This World Links

Interesting, Inspiring and Intriguing Links from Around the Globe

FROM CANADA:

Edmonton Research Could Transform Heart Transplants Worldwide

<http://www.edmontonjournal.com/Edmonton+research+could+transform+heart+transplants+worldwide/10271149/story.html>

FROM GERMANY:

New App and Web Page Allow Self-Screening for Rare Lung Disease Symptoms

<http://www.technologytell.com/apple/141245/new-app-web-page-allow-self-screening-rare-lung-disease-symptoms/>

FROM USA:

He Won Her Heart, She Got New Lungs. Hospital Proposal has Happy Ending

<http://www.today.com/health/young-woman-cystic-fibrosis-gets-ring-new-lungs-2D80205680>

Breathe Deeply for the Three of Us

<http://www.economist.com/blogs/freeexchange/2014/09/lung-exchanges>

Organ Transplant Patients Face Higher Risk of Skin Cancer

<http://www.sfgate.com/health/article/Organ-transplant-patients-face-higher-risk-of-5789565.php>

Scientists Find Possible New Therapy for Rare Lung Disease in Children

<http://www.foxnews.com/health/2014/10/06/scientists-find-possible-new-therapy-for-rare-lung-disease-in-children/>

An Implanted Sensor Is Helping Heart Patients

<http://www.theledger.com/article/20141006/NEWS/141009517>

Redwood City Woman Is Longest-Living Person with Same Transplanted Heart

<http://abc7news.com/health/redwood-city-woman-is-longest-living-person-with-same-transplanted-heart/342558/>

Massachusetts Woman Marks Key Heart Transplant Anniversary

<http://www.bellinghamherald.com/2014/10/04/3894057/mass-woman-marks-key-heart-transplant.html>

Two Heart Transplants Lead to One Romance for Buffalo Couple

<http://www.urmc.rochester.edu/news/story/index.cfm?id=4174>

Nurses Outraged by Blame Game

<http://www.medpagetoday.com/InfectiousDisease/Ebola/48067>

A Special 'Lung Party' Celebration of Life in New Orleans

http://www.nola.com/health/index.ssf/2014/11/a_special_lung_party_celebrati.html

Tattling Links

ISHLT Members in the News

FROM THE USA:

Bryan Whitson

The Ohio State University Wexner Medical Center
Columbus, OH

Transplanting Non-Traditional Donor Lungs Can Save Patients With End-Stage Lung Disease
<http://lungdiseasenews.com/2014/10/02/transplanting-non-traditional-donor-lungs-can-save-patients-with-end-stage-lung-disease/>

Steven Kindel

Children's Hospital and Medical Center
Omaha, NE

Children's Performs Two Heart Transplants in Two Days
<http://www.wowt.com/news/headlines/Childrens-Performs-Two-Heart-Transplants-in-Two-Days-278554621.html>

Michael Mitchell

Children's Hospital of Wisconsin
Milwaukee, WI

New blood test may predict heart transplant rejection
<http://www.wndu.com/news/specialreports/headlines/New-blood-test-may-predict-heart-transplant-rejection-275807021.html>

Enrique Gongora and Ioana Dumitru

Memorial Regional Hospital
Hollywood, FL

Memorial Cardiac and Vascular Institute Performs First Adult Heart Transplant in Broward County
<http://hollywoodgazette.com/FL/index.php/home/k2/item/160-memorial-cardiac-and-vascular-institute-performs-first-adult-heart-transplant-in-broward-county>

Dedication, Deification and Divination of Voltaire: An Apotheosis

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For nearly six months, we have been immersed in Voltaire; how he shaped the 18th Century and how he still shapes us today. From the way he was shaped by France, the Jesuits, Lady Newton and wit to his journeys from optimism to humanism, from scientific inquiry to truth and his treatises on inoculation and criticisms on the establishments, all resulting in a man who knows too much, we now are challenged on how to wrap up Voltaire for this issue of the Links. But before we proceed with the possibilities of bringing a closure to Voltaire, there are decades to centuries of material left out. Herein, only a few points can be made.

First, his most effective means of communication was through his own invention of his greatest literary works, the philosophical tales, most of which can be gleaned from *Candide and Other Stories* by Voltaire. Next, from his own advice at the end of *Candide*, Voltaire literally and metaphorically cultivated his own garden as the only antidote to despair in which settled at his estate at Ferney. At Ferney, he was a progressive, tolerant and enlightened landlord. Ferney was a mecca of the Enlightenment where many leading lights of intellectual, political and social Europe were hosted by Voltaire. It was at Ferney where his pen became truly mightier than any sword on behalf of the vital causes of the Enlightenment: toleration, freedom of thought, abolition of slavery, end to colonial and dynastic wars and the application of knowledge for the improvement of the quality of life. Also, from his diverse writings, including poetry, plays, letters and historical writings, he produced a *Philosophical Dictionary* (1769). Its content and tone were sharp, insightful and explicit, serving as a window which illuminated our thoughts about Voltaire's mind at Ferney. He was a crusader. He ardently defended and celebrated those in authority who acted for the sake of humanity. He ridiculed and scolded those in authority who acted by abusing their power and exercising their arbitrary will. He was the conscience of civilization. Readers devoured his works and the many revisions of the *Dictionary* from this Sage at Ferney.

Finally, let's not lose sight of Voltaire the historian. He has been placed into the pantheon of writers of history alongside Richard Gibbon – *The History of the Decline and Fall of the Roman Empire* and David Hume – *History of England*. Today, these three are considered among the most illustrious historians and philosophical thinkers who emerged within a single generation of the eighteenth century. All three exposed superstition, rejected supernatural explanations and identified progress with the development of knowledge, manners and arts. Voltaire viewed history as a story of the struggle between the philosophical spirit and specter of fanaticism. His major contributions were profound. Instead of simply chronicling history, he narrated it in terms of significant events with a philosophical understanding of the effect history had on human life and civilizations over time. Voltaire believed history was not defined by politics, diplomacy or war. He preferred a critical study

of original sources and texts to explain both human plans and contingencies beyond human control. In his quest for a "universal history," he penned the *Essai sur les mœurs* (1756), which began not with the 18th Century convention of Old Testament events, but with the ancient civilization of China, signaling a profound rejection of the traditional European historical narrative. He wrote of China's advanced civilization with science, industry and organized civic life, while Europe remained shackled to barbarism and superstition. However, he asserted that excessive filial respect for custom, tradition and the emergence of Buddhism from India and its superstitions into China prevented the Chinese civilization from advancing any further.

No, time will not permit us a view these shimmering and glimmering lights from the Age of Voltaire. Trying to bring closure can only come from the scene of Paris near the time of his death and how he was revered by others. While America was being conceived in its revolution of 1776, Voltaire had achieved international fame. After 40 years of exile, he made a triumphant return to Paris following an official invitation to be honored in the world of politics and in the world of thought. He was invited to take his rightful seat at the Académie Française. During this popular ceremonious occasion, his reception was unprecedented. This was an extraordinary hero's welcome; the first such welcome for a man of letters. The adulation and thunderous ovation had never been witnessed before for such an individual. There was an endless flood of visitors. Among this deluge was Benjamin Franklin. Perhaps it was Ben Franklin, but more likely the celebration exhausted Voltaire and led to his death.

In Paris, one is usually buried in hallowed ground with permission of the Church. Otherwise you're buried as a commoner outside the city, a fate usually reserved for criminals, heretics, prostitutes and Protestant. Many great leaders were aware of this and had prepared their deathbed confession and conversion. Through a priest or a bishop, one can achieve a deathbed conversion for an appropriate burial rather than be dismissed into unhallowed and undignified sites. At Voltaire's impending death, the priest arrived for his deathbed conversion. Voltaire was asked, "Do you believe in God?" Voltaire answered, "I do." Then he was asked, "Do you believe in God the Son?" to which Voltaire replied, "Oh, don't talk to me about that man." The Church denied him burial in hallowed ground. Several days later, after his death, Voltaire's corpse was dressed and carried away. He was placed in a carriage and buried on the road to Ferney in a Catholic upstanding cemetery. Even in death, Voltaire cheated his enemies and maintained his defiant deism. He earned a literary triumph even in death. In 1791, his bones were moved to the Pantheon of heroes and became an object of national reverence. The early French revolutionaries embraced Voltaire. His heart was taken back to Ferney in an urn, where it was stated "his heart is here and his spirit is everywhere."

In the latter part of the French Revolution, the radical Jacobins saw Voltaire as a moderate and an enemy to their beloved Rousseau. Robespierre's and Rousseau's writings held a sacred place for the Jacobins. Voltaire's reputation fell into disfavor, which was further intensified when many of his friends, followers and intellectual heirs turned against the revolution because of its persecution of the Catholics. However, Voltaire was a staunch defender of religious tolerance and believed religion, above all else, should be a voluntary and private matter. He was a crusader for freedom of religion. He never called the persecution of anyone. Nevertheless, many Voltaireans died under the guillotine. Conservative Europeans saw him as the very cause of the Revolution, yet he was treated with ambiguity as it continued, and many of his disciples found themselves in danger.

There are no better summations than that by Johann Wolfgang von Goethe (the giant German figure, writer and statesman from the romantic period), Frederick the Great of Prussia (Frederick II) and an unidentified author of an article, found in the Great French Catholic Encyclopedia of the 20th Century.

When Goethe writes an essay he makes a judgment. Here is his summation of Voltaire. "Profoundness, genius, intuition, grandeur, spontaneity, talent, merit, nobility, imagination, wit, comprehension, deep feeling, sensibility, discernment, good taste, rightness, propriety, voice, great tone, courtliness, variety, abundance, wealth, fruitfulness, warmth, something magical, charm, grace, urbanity, ease, vivacity, finesse, brilliance, boldness, dazzle, mordant wit, delicacy, ingenuity, style, poetry, harmony, purity, correctness, elegance, perfection." He goes on, "Voltaire is the greatest writer of all time, God's most astonishing creation." *Der Alte Fritz* (Frederick the Great) writes..."Voltaire's finest monument is the one that he erected to himself, his works which will remain longer than St Peter's Basilica, the Louvre and all the buildings constructed to eternity by human vanity. When French no longer is spoken, Voltaire still will be translated into whatever language succeeds it." And finally from the unidentified author representing the French Catholic Church as a pay back to Voltaire, "...it was above all by Voltaire's efforts that the modern world came into being in which the state liberated from the church and purely secular guarantees to every citizen, the freedom of his person, the freedom of thought, the freedom of speech, the freedom of the press and the freedom of conscience and of religion."

"Freedom is a Light for which many Men have Died in Darkness."

An inscription above the Statue of George Washington and the Tomb of the Unknown Soldier in Washington Square in Philadelphia.

Disclosure statement: The author has no conflicts of interest to disclose.