

# Sickle Cell Today

USA Comprehensive Sickle Cell Center

Volume 15 Issue 1

September 2019

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## Hydroxyurea is safe and effective in children with Sickle Cell Anemia: So why is it being underutilized?

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### Sickle cell anemia

Sickle cell anemia (HbSS and HbS<sup>o</sup>) is a well-recognized chronic and progressively debilitating medical condition with ongoing hemolysis, recurrent, acute pain crises, and considerable morbidity from insidious but inevitable organ damage. It is one of the most common inherited diseases worldwide and is a disorder of global and economic importance as well as clinical significance.

In the United States, 80,000-100,000 individuals are affected by the disorder. Worldwide, more than 300,000 children are estimated to be born annually with sickle cell disease. This number includes approximately 3,000 children born with the disease each year in the United States.

The acute pain crisis, a hallmark of sickle cell anemia, is characterized by the sudden onset of pain which typically involves the chest, back or extremities. Hydration and opioid analgesics are mainstays of treatment and hospitalization for more aggressive treatment is often required.

In sickle cell anemia, every organ system can be involved resulting in a myriad of acute complications ranging from splenic sequestration, acute chest syndrome, and stroke to more chronic complications such as leg ulcers, priapism/impotency, gallstones, and pulmonary hypertension. Organ damage begins early in life and worsens over time ultimately affecting the brain, kidney, lung, spleen, bones, and eyes.



Some children can be incorrectly considered by the family and healthcare providers to be “doing well” if they are not having an acute pain crisis or requiring hospitalization. This inadequate and incorrect assessment may lead to unrecognized disease manifestations involving multiple organ systems—such as delayed growth and development, splenic dysfunction, chronic pain, neurocognitive delay, poor school performance, increased risk of stroke and brain damage.

### **Hydroxyurea**

Hydroxyurea was first approved to be used in adults with sickle cell anemia in 1998. To date, it is the only disease modifying drug used for patients with this disease. Since its approval, substantial experience has accumulated regarding the safety and efficacy of hydroxyurea for children with sickle cell anemia. In December 2017, the FDA finally approved hydroxyurea for use in children as early as 9 months of age. It is administered by mouth once daily, inexpensive, and relatively safe for use in most children. It is known to induce hemoglobin F thus reducing hemolysis while decreasing white cell count and associated inflammation. Use of hydroxyurea consistently has been associated with excellent growth and development and sexual maturation. Sustained long term benefits ensue over time without any medication resistance or tolerance, making it an ideal drug. Studies have also shown that hydroxyurea liquid formulation is very well tolerated and equally efficacious. The primary reason for ineffectiveness with this drug seems to be noncompliance, but very few children are genuinely non-responders. Patient response is also variable. Reasons for the lack of consistency and response are not well known.

Side effects are limited to mild to moderate myelosuppression and gastrointestinal symptoms. Rarely, adverse skin reactions are seen. All these undesirable effects are dose dependent and usually resolve with holding the medication for a few days. The greatest fear regarding long term use of hydroxyurea is a possibility of causing cancer. Multiple studies have shown that there is not a causal link to cancer based on its use in thousands of children in the last 30 years. Thus, hydroxyurea does not confer an increased risk of cancer. However, due to the lack of complete data regarding the potential for causing birth defects in an unborn fetus, it should be avoided in adolescents and young adults that plan to conceive or father a child.

### **However, hydroxyurea remains underutilized!**

To date, many healthcare providers (general practitioners and some specialists) have inadequate knowledge about hydroxyurea resulting in patients and families not being offered this treatment. Caregivers may also decline treatment of their children with hydroxyurea because of unrealistic fears. Education is the key and consistency of information also goes a long way in gaining the trust of the

families and their willingness to adhere to hydroxyurea once it is started. Barriers to hydroxyurea are suspected at multiple levels: patient, parent/family/caregiver, provider and healthcare system.

### **How to improve adherence and overcome barriers?**

After hydroxyurea is initiated, continued education must be provided via frequent discussions about the rationale for therapy, drug side effects, and consequences of non-adherence. Use of medication calendars, pill containers and encouragement from family members can also be beneficial. Personally, I find it effective to review blood counts or even smear findings when possible with family members and the child. When they see and understand the results firsthand, it helps in increasing adherence. School personnel including nurses may be helpful to certain families. Current technological advances like electronic or telephonic notifications and reminders can be considered. Checking on them frequently during the first few weeks is very crucial. Once they have achieved the maximum tolerated dose, laboratory checks can be less frequent. Education of the providers, including primary care physicians, is of paramount importance as well. When providers deliver accurate information to patients and families empowering them to make informed choice, more children are likely to reap the benefits of hydroxyurea therapy. Healthcare systems should be prepared to provide appropriate administrative support for training providers. This may involve holding educational seminars for the young trainees and faculty and financial support for attending national sickle cell conferences. Patient non-compliance with required laboratory monitoring may be the result of poor access to healthcare.

Advocacy from lay organizations promoting hydroxyurea is noticeably lacking. System level barriers related to insurance, medical access and lack of knowledgeable providers may have no easy solutions. Though hydroxyurea is inexpensive and requires relatively simple monitoring, issues related to public and private third-party payer still exist, for example - lack of Medicaid coverage of certain hydroxyurea strengths.

From all the observational studies over the years, we have compelling evidence that hydroxyurea can reduce painful events and hospitalizations and preserve organ function in children of all ages with sickle cell anemia. It is safe and effective, and the cost benefit ratio is excellent. Using hydroxyurea reduces both healthcare utilization and the pain experienced by children at home. It is important to understand that it is a preventative medication and not an acute treatment modality! Until we have another disease modifying agent superior to hydroxyurea, all children with sickle cell anemia should be offered to start hydroxyurea at 9 months of age before they develop chronic, and ultimately fatal organ damage.

Further research is needed to explore and mitigate

ongoing barriers be it, access to care, patient or provider education, concerns of carcinogenicity or insurance coverage. This is important also since hydroxyurea has the potential to be widely tried and tested in HbSC and other sickling genotypes.

#### **Other current therapies and future opportunities**

L-glutamine (amino acid), provides an alternative therapy for those who decline treatment with hydroxyurea or who may have unacceptable side effects. L-glutamine can be administered with hydroxyurea to lower the incidence of pain crises for those who may have a suboptimal response to hydroxyurea. It works by lowering the oxidative stress in the sickle red blood cell and thus preventing hemolysis to an extent. Side effects are limited to nausea and other minor gastrointestinal symptoms. The FDA granted approval of pharmaceutical grade L-glutamine (Endari, Emmaus Medical) as a prescription drug to reduce the rate of acute complications of sickle cell disease among adults and children 5 years of age and older in June 2017.

Few other drugs are on the verge of becoming available. These agents have the potential to improve survival and quality of life for children with sickle cell disease.

In 2017, the American Society of Hematology (ASH) introduced its Advocacy Efforts Related to Sickle Cell

Disease and Sickle Cell Trait. In February 2018, United States Senators, Tim Scott and Cory Booker, advanced the Sickle Cell Disease Surveillance, Prevention, and Treatment Act of 2018 which has now become public law as of December 2018. This law supports and advances sickle cell disease research and grant program for federally qualified health centers, nonprofit hospitals or clinics, and university health centers.

The only cure available to patients with sickle cell disease is stem cell transplantation. However, the selection of patients who should benefit from this treatment modality is controversial and challenging. Improved quality of life and transplantation outcomes are not yet consistent and still associated with considerable morbidity and mortality. Because transplantation can be offered to relatively few individuals, hope for reaching more patients with curative intent has focused on efforts to develop gene therapy. Recently, research progress has been speeding towards that goal. There is a lot of optimism and excitement in therapeutics for sickle cell disease than ever in the past.

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## **USA Annual Sickle Cell Conference 2019: Educating a Community for 17 Years**

**Johnson Haynes, Jr MD**  
**Director**  
**University of South Alabama Sickle Cell Center**

The 2019 annual sickle cell conference, Sickle Cell Disease Practical Issues XVII: New & Emerging Therapies & Approaches to Management, was held May 18, 2019.



The conference, now in its 17th year, is sponsored by the University of South Alabama Comprehensive Sickle Cell Center.

This year, 90 participants registered for the conference of which 58 received 7.5 interprofessional continuing medical education (CME) credits or CME credit equivalents. This year's conference boasted the largest physician participation in its 17 year history, with 23 physicians. This CME activity was supported by unrestricted educational grants and exhibitor support. This support was appreciated by all involved and allowed its organizers to provide an affordable registration cost without compromising quality of the educational experience. Attendees included physicians, nurses, social workers, pharmacists, students and sickle cell clients. In 2008 when the Dr. Cecil L. Parker, Jr., Sickle Cell Disease Distinguished Lecture Endowment was established to support the educational agenda of the Center, it was difficult to fathom the growth now seen in support of the annual conference. Over the past 11 years, the Center has been able to invite one nationally recognized expert to speak at the conference.

Visit the Comprehensive Sickle Cell Center website at:  
<http://www.usahealthsystem.com/sicklecellcenter>





L to R: Johnson Haynes, Jr., MD, Kenneth I. Ataga, MD, Jon M. Hirshon, MD, Victor R. Gordeuk, MD and Cecil L. Parker, Jr. MD

The 2019 conference featured three nationally recognized experts on sickle cell disease, three local experts and a patient panel. The topics addressed at this year's conference were, "Drug Therapies for Sickle Cell Disease: Beyond Hydroxyurea," "L-glutamine in the Management of Sickle Cell Disease: Benefit in Combination with Hydroxyurea?," "Improving Emergency Department Assessment and Management of Vaso-occlusive Crisis in Sickle Cell Disease," "Role of Ketamine in the Management of Vasocclusive Crisis in Sickle Cell Disease," "Proteinuria in Sickle Cell Disease: Diagnosis and Management," and "Indications and Use of Hydroxyurea in Children with Sickle Cell Disease." The learning objectives at the conclusion of this activity were that participants should be able to:

- 1) Employ a framework that addresses a more efficient approach to assessment and management of pain crisis in the emergency department;
- 2) Better understand the use and indications of hydroxyurea in the pediatric population with sickle cell disease;
- 3) Better understand the role of angiotensin converting enzyme inhibitor/ angiotensin receptor blocker use in the management of proteinuria complicating sickle cell disease;
- 4) Better understand new and emerging therapies for the management of sickle cell disease.

The patient panel was a new feature of the annual conference and clearly brought a meaningful perspective that heightened the awareness of implicit biases fostered by healthcare providers. The patients openly expressed the negative feelings derived from being referred to by providers as a "sickler," healthcare provider bias when suggesting they are drug addicts when in pain, and contrary to what some believe, they do not want to come to the emergency room when having a pain crisis, but when severe enough, they have no other choice. This discussion proved to be empowering for the patients and served as an eye-opener for the organizers and attendees. By providing a forum for those directly affected by sickle cell disease, it was resoundingly clear there is a need for healthier communication between providers and patients.

Again, many thanks to USA Health, addmedica, Emmaus Pharmaceuticals, Global Blood Therapeutics, Novartis Pharmaceuticals, and Pfizer Pharmaceuticals for their support. The next conference will be held in the spring of 2020.

# Save the Date: Annual Blood Drive 2019

**Johnson Haynes, Jr., MD, Director  
University of South Alabama  
Comprehensive Sickle Cell Center**

The 21st annual blood drive - sponsored by Alpha Phi Alpha Fraternity, Inc., University of South Alabama Comprehensive Sickle Cell Center, and Franklin Primary Health Center - will be held on Saturday, September 14, 2019 from 10 a.m. to 2 p.m. at the Franklin Memorial Complex Mall located at 1303 Martin Luther King Avenue, Mobile, AL.



The blood drive is held each year in September in honor of National Sickle Cell Awareness Month.

The event is free and open to the public. Donors are asked to bring a friend or organize a team. The team that has the largest number of donors (over 5) will be featured in our next newsletter and receive a

special award. The collection goal is 50 units of blood. Give the “Gift of Life” through blood donations. Each unit of blood donated can save 3 lives. To schedule an appointment, visit [www.redcrossblood.org](http://www.redcrossblood.org).

**Use sponsor code: ALPHAPHIALPHA**

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# Back to School Tips

**T’Shemika Perryman, RN, PACT Transition Education Coordinator**

It’s that time again! Time for waking up early, catching the bus, homework, meeting new teachers, making new friends and maybe attending a new school. Summer is over and school is now in session. Some may be super excited while others may be extremely nervous. Whatever category you fall in, the goal is the same, to have the best year possible and have fun while doing it!

Here are a few tips to assist in making the best grades possible for this 2019-2020 school year:

• **Pretend that you have to teach the subject that you are studying.**

If you can teach someone else something, you will convert as much to memory as possible.

• **If you find yourself having difficulty remembering something you have read, write it down.**

Writing notes helps with your long-term memory.

• **Pace yourself with studying.**

Study uninterrupted in 30 to 60 minute intervals and give yourself a 5-10 minute break in between to help prevent fatigue.

• **Use google translate, Grammarly, Kahn Academy, online thesaurus such as [wordhippo.com](http://wordhippo.com), and photo math app to help with writing, science, and math assignments.**

• **Chew gum or eat peppermint while studying.**

Chewing gum can improve the blood flow to your brain and peppermint can increase your mental awareness.

Let’s strive to have a wonderful and successful 2019-2020 school year. Remember, if you do not have access to the internet or a laptop, please feel free to contact our Learning Resource and Development Center at (251) 471-7714 or call or text (251) 288-0705 or (251) 288-0729 to schedule an appointment.

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# The USA Comprehensive Sickle Cell Center is Proud to Announce it’s 2018 and 2019 Graduates

**Congratulations to our high school graduates:**

- Michael Nicholson-Blount High School (2018)
- Jesse Grayson - Vigor High School (2018)
- Jyniqua Lane Braggs – Vigor High School (2018)
- Jada Cathcart - Ben C. Rain High School (2019)
- Tydorian Magee - Chickasaw High School (2019)
- Victor Alexander - Murphy High School (2019)

• Java Gaston - Jackson High School (2019)

• Dasonte Dees - Citronelle High School (2019)

**Congratulations to our 2019 college graduate:**

Justin Thomas - University of South Alabama-Computer Information Systems.

# Improving PACT through Electronic Communication

**Cimone Smith, Transition Coordinator, Study Facilitator**

The Pediatric to Adult Care Transition (PACT) Program at USA Comprehensive Sickle Cell Center has undergone some new and exciting changes. Most recently, the use of cell phones was implemented to communicate with the patients through email and text. Electronic communication now compliments didactic approaches to increase patient participation and education. Every month PACT participants receive a text or email with a topic related to sickle cell disease (SCD) or transition process. They are encouraged to respond within one week via text or email. Participation in the monthly feedback is one requirement for the participants' eligibility to receive the Watson-Henderson Achievement Award upon high school graduation. This award is given to PACT participants who pursue postsecondary education and actively participate in PACT activities from their 9th to 12th grade year of high school. In addition to monthly topics, PACT participants receive information about events hosted at the Learning Resource and Development Center (LRDC) and community sponsored activities such as SAT Prep classes, scholarship opportunities, and back-2-school rallies.

PACT participants are encouraged to text, email, or call the transition coordinators with any questions they may have at [acsmith@health.southalabama.edu](mailto:acsmith@health.southalabama.edu), (251) 288- 0729 or (251) 288- 0705.

## **Improving PACT through Research USA**

Comprehensive Sickle Cell Center is conducting the Sickle Cell Trevor Thompson Transition Study, ST3P-UP. The Patient-Centered Outcomes Research Institute (PCORI) funded this study after an initiative identified transition among patients with sickle cell disease (SCD) to be an important research topic. The initiative discovered that adolescents and young adults, ages 16 to 18, with SCD are more likely to go to the hospital and to be at increased risk for premature death. This structured education-based program requires the Pediatric and Adult clinics to work together to implement the Six Core Elements of Health Care Transition (1) in both practices. Implementing the Six Core Elements provides a standard process for clinic staff to support patients with SCD as they transition from pediatric to adult care. The clinical staffs (pediatric and adult) also work with the Sickle Cell Disease Association of America - Mobile Chapter to complete the triad needed for effective pediatric to adult healthcare transition and transfer.

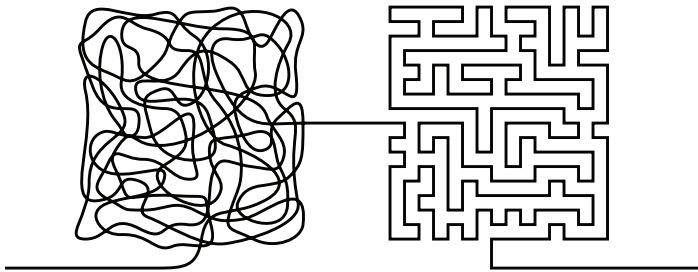
We are seeking pediatric participants between the ages of 16 to 18 that will transfer to adult care within 6-12 months to participate in the ST3P-UP Study. Participants that enter into this study will meet with the study facilitator, Cimone Smith, during their scheduled clinic visit every 3 months after enrollment. The participants will be provided with educational materials during every follow-up visit and required to complete surveys every 6 months after enrollment. Please contact the ST3P-UP Study facilitator if you are interested in finding out more. I can be reached at (251) 471-7714.

**Reference 1. National Center for Health Care Transition. (2014). Six core elements of health care transition 2.0. Retrieved from <http://www.gottransition.org>**



# Sickle Cell Disease: Fact, Opinion, or Myth

Ardie Pack-Mabien, Ph.D., FNP-BC



When talking to individuals about sickle cell disease (SCD) or engaging in social media, you can hear and read a variety of opinions and/or myths particularly during the month of September, designated as National Sickle Cell Awareness Month. During this month, there is a noticeably heightened awareness and education about SCD. It only seems appropriate to debunk those myths or opinions about SCD from our minds and replace them with indisputable facts from the National Institutes of Health, National Heart, Lung, and Blood Institute, Center for Disease Control and Prevention, and National Sickle Cell Disease Association.

## **Myth #1: SCD only affects individuals of African descendant -False**

Fact: SCD affects millions of people worldwide of many races and ethnic groups, including Spanish, Brazilian, Indian, and even Caucasian. Because of this fact, all babies born in the United States, dating back to 2006 regardless of race and ethnicity, are tested for SCD and sickle cell trait among other disorders during their stay in the newborn nursery. Of note, universal newborn screening in Alabama for SCD and sickle cell trait was implemented in 1988.

## **Myth #2: SCD is contagious-False**

Fact: SCD is not contagious like a cold or the flu. Individuals are either born with it or they are not. If you are born with sickle cell anemia (HbSS disease), both of your parents have sickle cell trait. If you are born with one of the other common forms of sickle cell disease (HbSC, HbS beta null or plus thalassemia), one of your parents have sickle cell trait and the other parent has another hemoglobin trait. It is important to remember individuals with sickle cell trait cannot develop SCD.

## **Myth #3: All types of SCD are equal-False**

Fact: There are four common types of SCD seen in the US

which can vary in severity. Hemoglobin SS or sickle cell anemia (also the most common type) and sickle beta zero thalassemia are the most severe followed by hemoglobin SC and sickle beta plus thalassemia.

However, it is very important to remember any type of SCD can be severe. Individuals affected by this disease should contact their sickle cell provider to learn about their type of SCD and baseline blood count.

## **Myth #4: There is no cure for sickle cell disease-False**

Fact: Bone marrow/stem cell transplantation is the only cure but may not be the best option for all individuals with SCD because the procedure comes with serious risks. The best circumstances for the success of this procedure occurs when the donated bone marrow or stem cell comes from a sibling or an individual whose genetic makeup perfectly matches the individual with SCD. Sometimes other donors, like unrelated individuals or parents, are used but mostly in clinical research studies.

## **Myth#5: There are no treatments or therapy options for the management of SCD-False**

Fact: Immunizations such as the pneumococcal vaccines and medicines called Penicillin, Folic Acid, Hydroxyurea, and Endari; and red blood cell transfusions for stroke prevention are changing the lives of individuals with SCD. These therapies are allowing individuals with SCD to live longer lives with fewer complications. Multiple research studies are ongoing to find additional treatment options.

## **Myth#6: SCD is a death sentence at an early age-False**

Fact: Recent data reveals, 93-94% of newborn babies born in the United States with SCD will live to reach adulthood and transition to adult care. This increase in life expectancy is due to mandatory universal newborn screening, Penicillin prophylaxis, and Pneumococcal vaccines during the first six years of life, Hydroxyurea, and chronic transfusion therapy for stroke prevention in the pediatric population.

## **Myth #7: The medical management of individuals with SCD only involves pain management: False**

Fact: SCD affects many different parts of the body. This includes the eyes, ears brain, lungs, kidney, reproductive organs, liver, skin, and extremities. Daily care is often needed to manage the symptoms of this disease.

Daily care includes adequate hydration, avoidance of extreme temperature changes, cigarette smoking, and caffeine, and maintenance of immunizations. Additionally, individual should seek routine medical follow-up with a primary care provider and hematologist or sickle cell specialist for the coordination of care and services. Finding a good social worker is also a great benefit because this can help families find local resources that may be available to them.

#### References:

<https://www.cdc.gov/ncbddd/sicklecell/materials/infographic-5-facts.html>  
<https://www.cdc.gov/ncbddd/sicklecell/facts.html>  
Thein, M., Igbneweka, N., & Thein, L. (2017). Sickle cell disease in the older adult. *Pathology Review*. 49(1); 1-9.  
Doc: <http://dx.doi.org/10.1016/-j-pathol.2016.10.002>

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# Wow, is it that time of year already?

## Ardie Pack-Mabien, Ph.D., FNP-BC

The flu virus is a highly contagious respiratory illness caused by influenza A or B viruses. There are



many different types of influenza A and B viruses which constantly change over time. For the 2019-2020 flu season, researchers have recommended that the trivalent (three- component) vaccine contains: A/Brisbane/02/2018 (H1N1), A/Kansas/14/2017 (H3N2), and B/Colorado/06/2017 (Victoria Lineage). Researchers have also recommended that the quadrivalent (four- component) vaccine contains components of the trivalent vaccine plus B/Phuket/3073/2013-like virus.

Typically, the flu season begins between the months of October and May and usually peaks in the United States between December and February. Individuals with the flu often miss days from work or school, pay costly co-pays for medical visits and medications, and may spread the virus to family members, coworkers, and the general public.

The 2018 flu season concluded on April 30, 2019, with a bang. According to the Centers for Disease Control and Prevention (CDC), thousands of Americans are infected with the influenza virus each year. From October 1, 2018 through May 4, 2019, flu surveillance by the CDC revealed

an estimated 37.4 – 42.9 million flu-like illnesses, 17.3-20.1 million medical visits, 531,000-647,000 hospitalizations, and 36,400 – 61,200 deaths related to the flu. Remember, “an ounce of prevention is worth a pound of cure.”

To help prevent the spread of this highly contagious and potentially life-threatening virus, an annual influenza vaccination is recommended for all persons aged  $\geq 6$  months unless there are contraindications to the administration of this vaccine. This vaccination is particularly important for individuals who are at an increased risk for severe complications from influenza, or at higher risk for influenza-related outpatient, emergency department, or hospital visits such as individuals with sickle cell disease (<http://www.cdc.gov/flu/about/season/flu-season-2019-2020.htm>). It is recommended that you see your healthcare provider to discuss the potential risks and benefits of this vaccine.

Healthcare providers usually begin offering the influenza vaccine soon after it becomes available and continues through the month of May or as long as the influenza virus circulates throughout the community. Children ages 6 months through 8 years who are receiving the influenza vaccination for the first time should receive two doses of the vaccine at least four weeks apart (<http://www.cdc.gov/flu/about/season/flu-season-2019-2020.htm>).

The vaccine is offered only as an injection (a shot) this flu season and can be obtained from your healthcare provider, health departments, clinics, urgent care centers, pharmacies, college health services, and employers.

See your healthcare provider sooner rather than later to receive your vaccination as not to miss out on the benefits or possible shortage of this vaccine. Please keep this in mind as the availability and supply of vaccinations may be limited due to growing demands by the general public.

No, the influenza vaccine does not cause an individual to develop the flu. However, there are some short-term



and mild side effects of the influenza vaccine (<http://www.cdc.gov/flu/about/season/flu-season-2019-2020.htm>). That being said, exposure to an individual(s) with the influenza virus prior to receiving the vaccination may increase your risk of developing flu-like symptoms or the flu (<http://www.cdc.gov/flu/about/season/flu-season-2019-2020.htm>). Potential side effects of the influenza vaccine include soreness, redness, or swelling at the injection site, low-grade fever, and generalized aches.

**To help prevent the spread of the flu or cold, the CDC recommends:**

- Proper handwashing with soap and water for 20 seconds or using a hand sanitizer,
- Turn your head and cough or sneeze into the sleeve of your elbow or napkin,
- Avoid touching your eyes, nose, and mouth with your hand (washed or unwashed),
- Stay at home if you are sick with the flu,
- Avoid contact with people such as kissing, hugging, sharing food or drinks, and shaking hands
- Use disinfectant to clean door handles, light fixtures, remote controls, and toys

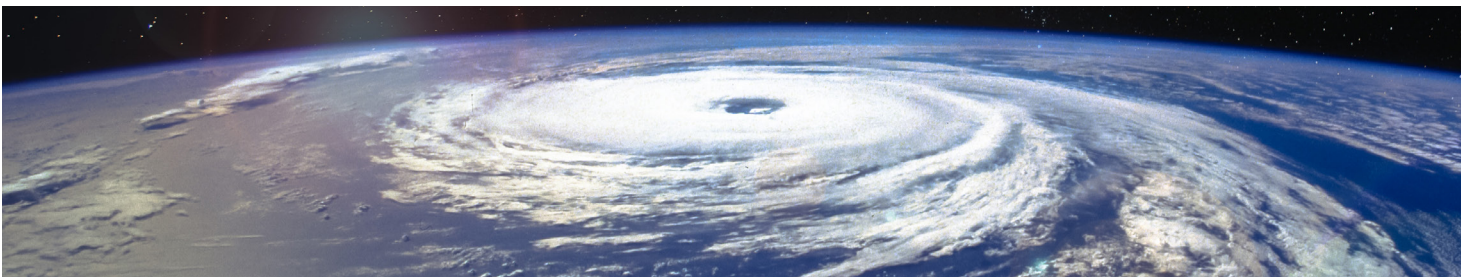
**See your health care provider for your influenza vaccination, and Contact your health care provider for flu-like symptoms:**

- Cough
- Sore Throat
- Runny Nose, Stuffiness or Congestion
- Fever
- Fatigue
- Headache or Body Aches
- Diarrhea and Vomiting (although more common in children)

For additional information about the influenza virus, spread, prevention, and vaccine go to the Centers for Disease Control and Prevention website at <http://www.cdc.gov/flu/protect/keyfacts.htm>

# Are you ready for the 2019 Hurricane Season?

**Ardie Pack-Mabien, Ph.D., FNP-BC**



<b>Before</b>	<b>During</b>	<b>After</b>
Prepare an emergency plan of action and communicate with your family. Gather your homeowner, car, and health insurance information. Purchase a weather radio	Listen to your local radio and TV station for emergency and active weather information	Stay away from down power lines

**For additional information, visit:**

<https://www.fema.gov/disaster/4068/updates/hurricanesafety-tips-learn-what-do-during-and-after-hurricane> and <https://www.ready.gov/hurricanes>.

<b>Before</b>	<b>During</b>	<b>After</b>
Have at least one gallon of water per person in your household for 3-7 days	Stay inside and away from windows	If the power is out, operate your portable generator with caution <ul style="list-style-type: none"> <li>• Follow the owners' manual</li> <li>• Make sure the generator is grounded and used in a dry area</li> <li>• Never use a portable generator indoors</li> </ul>
Have on hand a supply of non-perishable food for: <ul style="list-style-type: none"> <li>• each person, infants, and elderly persons with and without dietary restrictions in the household for 3-7 days</li> <li>• Purchase a manual can opener and paper products</li> </ul>	If you must use a candle, don't leave candles unattended and keep away from the furniture in your home. Batteries are safer!	Do not walk, run, or drive through floodwaters
Obtain a first aid kit from your local store	Keep the refrigerator and freezer doors closed as much as possible	Document damages to your property with pictures
Gather and place all important documents in a plastic container for storage such as your homeowners or renter insurance policy, insurance cards, and legal documents		Contact your insurance agent.
Stock up on: <ul style="list-style-type: none"> <li>• batteries</li> <li>• flashlights</li> <li>• cash</li> <li>• important documents</li> <li>• supplies for infants, small children, and elderly</li> <li>• pet food and supplies</li> <li>• basic toiletries</li> <li>• whistle in order to signal for help</li> <li>• moist towelettes</li> <li>• garbage bags</li> </ul> Charge all electronic devices Fill up your gas tank	Stay off bridges that are over fast-moving water  Do not use your cell phone except during an emergency in order to save on battery	Save cell phone for emergency use only
Turnover, tie-down, or move all outdoor furniture indoors		Check on your family and elderly neighbors



# Make a gift to the University of South Alabama Comprehensive Sickle Cell Center

I am a: (Please check all that apply)  Friend  Parent  Grandparent  USA Employee  USA Alumni

Name(s): \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Preferred Phone: (\_\_\_\_\_) Email: \_\_\_\_\_

## I wish to make a gift to the University of South Alabama as follows:

### Gift Purpose: (check all that apply)

- I designate my gift to: Dr. Cecil L. Parker, Jr. Sickle Cell Disease Distinguished Lectureship Endowment
- This gift is in Honor/Memory (circle one) of: Please notify: \_\_\_\_\_
- Please credit this gift to:  Me only  My spouse & me. My spouse's FULL name: \_\_\_\_\_

Please list my/our name as follows: \_\_\_\_\_

### Gift or Pledge Amount:

- I am making a one time gift of: \$ \_\_\_\_\_
- I pledge \$ \_\_\_\_\_ per month to be deducted from my Credit Card or Checking Account.

Please continue monthly deductions as follows:

- Until I provide notification to Stop OR  Until \_\_\_\_\_ (month/year)

### Gift Fulfillment:

- My check is enclosed (please make checks payable to USA - Parker Endowment Fund).
- Electronic Funds Transfer: (please send VOIDED CHECK with this form).
- Please charge my Credit Card:(check one)  Visa  MasterCard  Discover  AmEx

Card Number \_\_\_\_\_ Exp. Date \_\_\_\_\_ Name on Card \_\_\_\_\_

### Matching Gift Information:

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To contact the USA Office of Health Sciences Development, call (251) 460-7032.

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