SECOND QUARTER **2019**

*Safety*Matters

A quarterly, collaborative publication
from MedFlight and HealthNet
Aeromedical Services

Transporting Infectious Patients

Karen Swecker, RN, CIC
Exposure Control Liaison, MedFlight

Would you be able to recognize an infectious patient? Outbreaks of vaccine preventable diseases such as chickenpox, measles, diptheria, and polio are occurring in several countries in Europe, Asia, the Middle East and the African continent. In the U.S., the evening news has been reporting an ongoing outbreak of measles – more than 465 cases as of April 4, 2019.

"A health threat anywhere is a health threat everywhere" is the statement from a 2018 conference of infectious disease physicians from across the world. In today's world of frequent international travel, previously eliminated disease outbreaks in the U.S. are increasing. Your chance of seeing a case of the measles, diptheria, chickenpox or even polio are increasing. Would you be able to identify and protect yourself and others from one of these diseases during a patient transport?

Measles is a very contagious, acute viral respiratory illness that was eliminated in the U.S. from 2000 to 2008. Before vaccine availability, the U.S. averaged 549,000 cases of measles with approximately 500 related deaths annually. The CDC states due to unreported cases, the count of measles cases was in actuality closer to 3 to 4 million. Of the reported cases, 48,000 were hospitalized and one thousand people developed chronic disabilities due to acute encephalitis. Signs and symptoms of the measles include:

- Fever – may be up to 105°F
- Malaise
- 3 C's" – cough, coryza (runny nose) and conjunctivitis (pink eye)
- Koplik spots – white spots inside the mouth that look like tiny grains of sand surrounded by a red ring.
- Maculopapular rash that appears about 14 days after exposure. Spreads from the head to the trunk to the extremities. The immunocompromised typically do not develop the rash.

continued »»

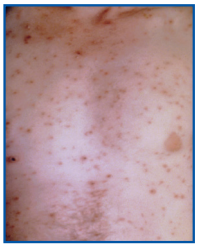
THIS ISSUE INCLUDES:

MedFlight

HealthNet Aeromedical Services

Mission. Ready.

continued from page 1



Chickenpox is a very contagious, vaccine preventable disease. Before the vaccine approximately 4 million people in the U.S. got chickenpox each year, more than 10,500 of those were hospitalized and 100-150 died each year. Side effects of the disease include skin infections (may have more than 500 blisters), dehydration, pneumonia and encephalitis. Symptoms last seven to ten days and include:

- Infectious one to two days before rash begins
- May start as "cold" symptoms – runny nose, sneezing, cough before rash begins
- Itchy rash of blisters, appears as very small red pimples that rapidly spread
- Fever
- Headache
- Malaise

Diptheria is a very infectious bacteria whose toxin causes tissue death which creates a thick grey membrane. This membrane may cover the back of the throat, tonsils, or larynx which leads to difficulty breathing, swallowing and speaking. The bacterial toxin may also go systemic and cause damage to the heart, nerves and kidneys. Before the vaccine (tetanus/diptheria/pertussis) there were more than 200,000 cases in the U.S. annually with more than 15,000 deaths. Although still rare in the U.S., more than 7,000 cases occur worldwide annually. The overall death rate from diptheria is 5%-10%, with a fatality rate of 20% for those under 5 and over 40. Diptheria is transmitted person to person via respiratory droplets from coughing or sneezing and via contact with contaminated surfaces or objects. Symptoms begin 2 to 10 days after exposure, can involve any mucus membrane including the tonsils and include:

- Weakness
- Sore throat
- Fever
- Swollen glands in the neck

Polio is an infectious disease that is crippling and potentially deadly. It is caused by a virus that easily spreads from person to person mainly via fecal/oral route, although it is also transmitted through contaminated food or water. Polio multiplies in the intestinal track then invades the nervous system where it can cause permanent paralysis within a few hours. In the pre-vaccine years of the 1950s, polio outbreaks caused more than 15,000 cases of paralysis each year. Due to the vaccination there have been no polio cases originating in the U.S. since 1979. In 1993 there was one case imported into the U.S. via an unvaccinated person who traveled to a country with wide spread polio. Due to vaccine, the number of cases worldwide has dramatically decreased (33 reported in 2018). However, as long as there is one case the unvaccinated are at risk. There is no cure for polio and 1 in 200 infections will result in permanent paralysis. Symptoms include:

- Fever
- Headache
- Stiff neck
- Fatigue
- Vomiting
- Pain in the limbs

What you can do to protect yourself and others from these diseases.

- Make sure you and your family's **vaccines** are up to date.
- Familiarize yourself with **signs/symptoms** of rarely seen communicable diseases.
- Use airborne precautions If a patient has any of these signs/symptoms - wear a fit tested N95 mask, place a surgical mask on the patient if tolerated.
- Use **contact** precautions which include gowns and gloves. Remember not to touch surfaces with contaminated gloves.
- Thoroughly **disinfect** surfaces and equipment. Use EPA approved disinfectant wipes or sprays to clean surfaces. Change wipes frequently as the wipes quickly become contaminated and will spread the germs instead of removing them.

Sources: www.cdc.gov; www.who.org ■

Bird Strike Mitigation

By Jeff White, M.S., MTSP-C, FP-C
Director of Safety, HealthNet Aeromedical Services

Spring is here and warmer temperatures means the risk of migratory birds is on the rise. Along with an increased chance of bird strikes comes maintenance issues with birds nesting in open areas of aircraft.

The FAA has worked with many agencies to create risk mitigation and data collection techniques to prepare crews when flying this time of year. Date shows 66%-68% of bird strikes occur during the enroute portion of a flight, 8%-9% on approach phase and 9%-10% during climb phase. Elevations of 500' and below is known as the bird rich zone while 93% of bird strikes occur below 3500'. To date, there has only been one known fatal HEMS accident due to a bird strike.

Here are tools available to you to assist with live tracking of birds:

BirdCast
www.birdcast.info/live-migration-maps
Avian Hazard Advisory System
www.usahas.com

Please remember this time of year, visors and sleeves down and eyes out and always scanning. Bird strikes can occur at any time, so diligence is key. ■

ECHO Safety Team

By Jeff White, M.S., MTSP-C, FP-C

Director of Safety, HealthNet Aeromedical Services

Every Coast Helicopter Operations (ECHO) has evolved into a driving force for our industry. The organization was created by flight crews as an opportunity to collaborate on safety, training, and come together to share ideas to become better clinicians and patient care providers. ECHO encompasses all public safety aviation, which includes law enforcement, search and rescue, and military members and provides free to low-cost education, high-quality training programs, crew member and program support, and networking opportunities to public safety aviation members around the world.

As an added service for the industry, ECHO has developed a safety team to travel the country to assist agencies with an unbiased mindset to build internal safety management systems, complete safety and crew resource management training for agencies, etc.

Driven by CAMTS and the FAA, companies are now required to have their own safety programs that integrate into their operator's safety program. This will create a more controllable safety program for a company's specific area and hazards encountered. This team will continue to grow and drive safety bringing it to the forefront of the industry and is another service for the aeromedical industry provided by the aeromedical industry.

The ECHO Safety Team is comprised of members from across the country and includes:

Veronica Marzonie, Team Director: RN, LifeFlight of Maine
Ron Folse: Pilot, Orange County Florida Sheriff's Office
Rachel Tester: Pilot/Paramedic, Tennessee
Brian Ceraolo: Business Development Manager for LifeForce, Tennessee
Justin Koper: Flight Paramedic and Safety Officer for HealthNet Aeromedical Services, West Virginia
Joey Loehner: EMS Planning Officer and Flight Paramedic for Humboldt General Hospital EMS, Nevada
Jeffrey White: Flight Paramedic and Director of Safety for HealthNet Aeromedical Services, West Virginia
Rhett Draehn: Safety Director of Air Division for CareFlite, Texas ■

A LYNYRD SKYNRD CASE STUDY: What can we learn from this rock band's fatal plane crash?

By Amanda Ball

MedFlight Safety Officer

While on their way to a show in 1977, the band's chartered private plane ran out of fuel and both engines failed. The plane went into freefall from 4,500 ft cruising altitude. Several on board were killed on impact, including the band's lead singer, shocking their friends, family, and fans as well as the aviation industry. What happened? Why? How?

The band's management had advised that the plane they normally chartered was being replaced with a newer, more "trustworthy" aircraft after this concert. But this concert was going to be a big one, and the pressure was on to be there.

BAND STATEMENTS PRIOR TO FLIGHT:

"The flames shooting out of the engine two days earlier didn't make me very confident."

"We were afraid to get on the plane, but didn't know any better."

"Something's not right."

"Aerosmith previously used this plane, and the pilots had questioned its flight worthiness."

"I didn't see the pilots check it out before they climbed in."

AND FINALLY...

"Let's go anyway, man. We've got a gig to do."

NTSB FINDINGS:

- Inadequate fuel planning
- Aircraft was last checked two days prior to flight
- High, and unnoticed fuel consumption by one of the engines during the flight
- Poor flight path planning prior to takeoff
- Continued flight with minimal fuel, overflying several airports with fuel resources
- Negligence or ignorance in regards to engine instruments
- Passengers entering and exiting cockpit

SURVIVING BAND MEMBER STATEMENT AFTER THE CRASH:

"There were a lot of people on the plane that knew something was wrong, but we all kind of followed each other, and that's where we made our mistake."

There have been many speculations on what led to this incident including pressure on the pilots to get the band to their destination, a rowdy culture that quite possibly caused distraction in the cockpit, lack of accountability in maintaining the plane's airworthiness, and more.

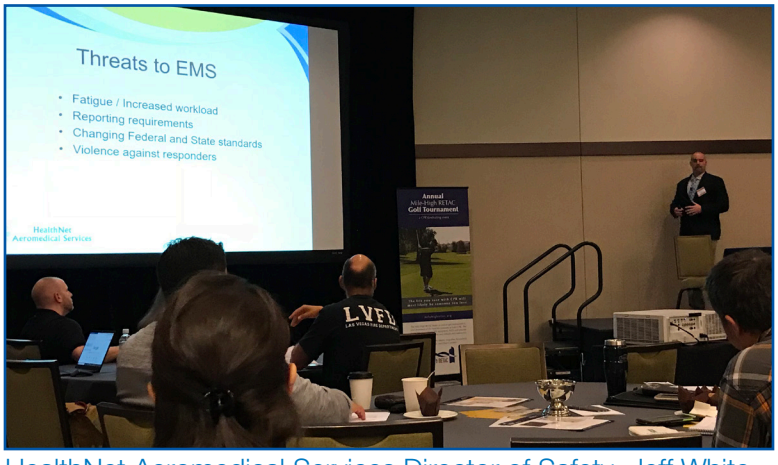
Discuss with your transport team: Do you see similarities to the pressures and challenges in our industry? What factors may have played into this incident? What measures does your organization have in place to enhance safe operations, reduce distraction, maintain vehicle quality, and remove customer and financial pressure when reviewing transport requests? ■

Spreading a Message of Safety

By Jeff White, M.S., MTSP-C, FP-C
Director of Safety, HealthNet Aeromedical Services

The unique structure and response model for HealthTeam Critical Care Transport has allowed our program to incorporate safety standards into ground EMS that many agencies around the country are still trying to tackle. Some of the biggest issues they face is no hours of operation restrictions or difficult communications with hospitals and other agencies. In many areas, competition between agencies sometimes hinder putting a safety focus in the forefront of an operation. It's extremely difficult to tell a customer "no" on an interfacility knowing that the customer will just call another service. This is a larger discussion happening now in the nation's capital with healthcare and insurance industries to better define and understand the EMS industry.

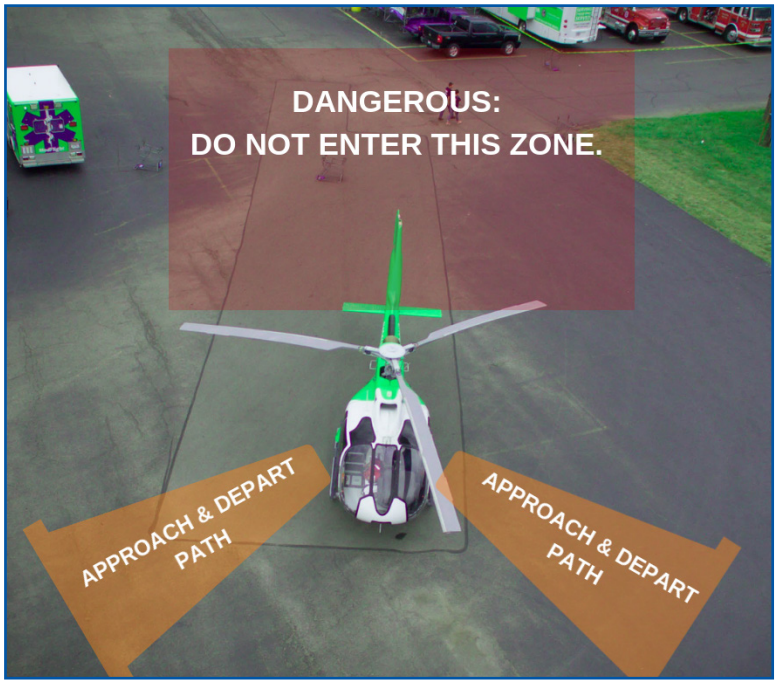
In March, HealthNet Aeromedical Services Director of Safety Jeff White and HealthTeam Critical Care Transport Safety Officer Justin Koper had the opportunity to present at the National EMS Safety Summit in Denver, Colorado. These safety leaders were invited to discuss how they implemented the SMS process from the aeromedical world into ground interfacility transfer EMS and their fatigue management study. The focus of these discussions was risk assessment, risk mitigation, safety education, as well as, how to use data to drive policy and procedure. ■



HealthNet Aeromedical Services Director of Safety, Jeff White

HealthTeam Critical Care Transport Safety Officer, Justin Koper

APPROACHING AND DEPARTING THE AIRCRAFT



- **DO NOT APPROACH OR DEPART HELICOPTER WITHOUT PILOT APPROVAL**
- **ALWAYS FOLLOW CREW MEMBERS' INSTRUCTIONS WHEN AROUND AIRCRAFT**
- **THE REAR OF ANY HELICOPTER IS A DANGEROUS AREA**
- **APPROACH HELICOPTER FROM THE FRONT AND SIDE**
- **MEDFLIGHT DOES NOT "HOT LOAD" OR "HOT OFFLOAD"**

Crew Resource Management in Inadvertent Instrument Meteorological Conditions

By Dave Corbi
Pilot, MedFlight 4

Inadvertent Instrument Meteorological Condition (IIMC) is a potentially deadly situation that flight teams may encounter while operating in marginal weather conditions. According to a recent FAA study, "tests conducted with qualified instrument pilots indicated that it can take as long as 35 seconds to establish full control via instruments once visual reference to the horizon is lost." While MedFlight operates under visual flight rules (VFR), each pilot is instrument-rated and trained to fly in IIMC conditions.

The pilot is always in command of the aircraft. However, safe operations is everyone's responsibility, and everyone on-board the helicopter should have a vested interest in the safe completion of every flight. These crew resource management (CRM) actions during an IIMC event may assist the pilot and ultimately the safe completion of the flight:

1. A clinical team member's actions should always support the pilot's actions. Keep the pilot situationally aware of deteriorating weather conditions. An example could be telling the pilot, "I can't see the horizon any longer from the two o'clock to five o'clock position".
2. If the pilot is task-saturated, they may need you to make radio calls for them or perform other duties as requested. You may be asked to select and program frequencies or request assistance with air traffic control. Calls to your program's communication center or operational control center are secondary to this radio traffic and should be completed following primary calls to local ATC.
3. Assist in setting the aircraft GPS or communication radios as requested.
4. Access information from the aviation resource manual or tablet and provide the pilot with requested information, such as frequencies, instrument approach plates and sectional charts.
5. Ensure there is clear and concise communication between all team members on-board, and remain situationally aware of the conditions you find yourself operating in.

It is important for crewmembers to understand IIMC avoidance and recovery procedures. Every crew member's experience and knowledge can be helpful in the successful outcome of any in-flight emergency. Take time regularly to train as a team, know where to locate and how to operate the above resources on your aircraft, and ask your pilot questions during your shift about these procedures.

Good crew resource management REQUIRES that you speak up when you have a concern. Do not let lack of experience, or pressure to accept a flight in less-than-ideal weather, influence your decision-making. Always trust your gut. Remember: "Three to go, one to say no."

Author Note: Dave Corbi has worked as a helicopter pilot for MedFlight since 2001. He also currently serves as the Battalion Standardization Pilot and Instrument Examiner with the Ohio Army National Guard. ■

Protect Your Hearing!

By Amanda Ball
MedFlight Safety Officer

We work in an environment of loud and often unexpected noises ranging from a helicopter landing, a siren check during morning shift change, and mechanics working with loud machinery. Do you know how loud everyday noises are, and what damage they can do to your hearing? Check out this info from the American Speech/Language Hearing Association:

PAINFUL IMPULSE NOISE — Not safe for any period of time without hearing protection

150 dBP = Fireworks at three feet, firecracker, shotgun

140 dBP = Most firearms

PAINFUL STEADY NOISE — Not safe for any period of time without hearing protection

130 dBA = Jackhammer

120 dBA = Jet plane takeoff, **nearby ambulance siren**, pneumatic drill

EXTREMELY LOUD — Dangerous to hearing with prolonged exposure

112 dBA = Maximum output of some MP3 players, rock concert, chainsaw

106 dBA = Gas leaf blower, snow blower

100 dBA = Tractor, listening to music with earphones, **helicopter 100 feet off the ground**

94 dBA = Hair dryer, kitchen blender, food processor ■

Safety Communication
Contact Information

MedFlight

VP of Risk, Linda Hines
614-734-8024 or lhines@medflight.com

Safety Officer, Amanda Ball
614-395-8338 or aball@medflight.org

Infection Control Officer, Karen Swecker
614-734-8044 or kswecker@medflight.com

HealthNet Aeromedical Services

Mission. Ready.

Director of Safety, Jeff White
304-610-3666 or jeffrey.white@healthnetcct.com

Safety Officer, Justin Koper
330-469-0146 or justin.koper@healthnetcct.com

Infection Control Officer, Justin Browning
304-653-4025 or justin.browning@healthnetcct.com

Intranet Website Resources:

ninthbrain

NinthBrain can be accessed via the worldwide web at suite.ninthbrain.com.

*Safety*Matters

Do you have any ideas for *SafetyMatters*?
Let us know by emailing jeffrey.white@healthnetcct.com