Monitoring the Drive

By Brian Bates, Outreach Manager

Monitoring the Drive
management and communication system.
Blue-Sky Network’s Hawkeye 5500 onboard vehicle one of CareFlight’s five MICUs is outfitted with is through real-time vehicle monitoring. Each
Air and Mobile strives to ensure MICU crew safety times.
that safety is in the forefront of our minds at all and with so many hours on the road, it is imperative
MICU missions occurring any time, day or night,
equates to many hours driving on the roads. With
for a total of 264,879 miles traveled, which in turn
of the MICU cab, as well as the driver’s view of the facing drive camera that provides video monitoring
The Hawkeye 5500 has redundant data uplink capabilities (cellular and satellite) to ensure 100% braking and accelerating, and crash and rollover
detection.
Each Hawkeye device is capable of reporting
GPS position, speed, acceleration, g-forces, and
reporting. Miculek is a leading cause of ambulance
In the case of severe ARDS, including severe ARDS. Placing the intubated and
mechanically ventilated prone patient between ICU, as a tertiary referral critical care center,
has been “proning” select complex intubated patients for years. Transporting an intubated
this novel critical care transport process.
Prone Patient Transports: CareFlight Meets the Challenge
By Andrew C. Hawk, MD

Intubated and mechanically ventilated patients in the ICU are traditionally positioned in the supine (“face up”) position; however, in select cases, such as in the face of severe ARDS (acute respiratory distress syndrome) and persistently low oxygen levels despite standard interventions, transitioning to the prone (modified “face down”) position may be lifesaving. In fact, the Miami Valley Hospital ICU, as a tertiary referral critical care center, has been “proning” select complex intubated patients for years. Transporting an intubated mechanically ventilated prone patient between medical facilities is another story. Pre-pandemic, CareFlight had never been asked to transport a mechanically ventilated COVID-19 patient with severe ARDS in the prone position, as they were generally more often in ICU care. With those factors in mind, early in the pandemic CareFlight developed a defined protocol for transporting the intubated COVID-19 prone patient. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process. CareFlight met the challenge of transporting patients in the prone position. Providing a secure transition of the patient to the transport cot, maintaining appropriate patient positioning and padding while continuously monitoring and providing patient care in transport, and providing guidance in “Reverse CPR” were included in the prone patient transport educational process.

COVID-19 in its harshest form causes long injury including severe ARDS. Racing the intubated
and mechanically ventilated COVID-19 prone patient with severe ARDS in the prone position is urgent and more often in ICU care. With those factors in mind, early in the pandemic CareFlight developed a defined protocol for transporting the intubated COVID-19 prone patient. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process. CareFlight met the challenge of transporting patients in the prone position. Providing a secure transition of the patient to the transport cot, maintaining appropriate patient positioning and padding while continuously monitoring and providing patient care in transport, and providing guidance in “Reverse CPR” were included in the prone patient transport educational process.

2020 Trauma Annual Report

Premier Health is proud to provide comprehensive, nationally recognized trauma care for the communities we serve. The 2020 Trauma Annual Report provides a complete picture of our trauma care – from life-saving technologies and research to international trauma outreach and our response to COVID-19.

We invite you to view the report
Visit PremierHealth.com/TAR

2020 Trauma Annual Report
Premier Health is proud to provide comprehensive, nationally recognized trauma care for the communities we serve. The 2020 Trauma Annual Report provides a complete picture of our trauma care – from life-saving technologies and research to international trauma outreach and our response to COVID-19.

Prone Patient Transports: CareFlight Meets the Challenge
By Andrew C. Hawk, MD

Intubated and mechanically ventilated patients in the ICU are traditionally positioned in the supine (“face up”) position; however, in select cases, such as in the face of severe ARDS (acute respiratory distress syndrome) and persistently low oxygen levels despite standard interventions, transitioning to the prone (modified “face down”) position may be lifesaving. In fact, the Miami Valley Hospital ICU, as a tertiary referral critical care center, has been “proning” select complex intubated patients for years. Transporting an intubated mechanically ventilated prone patient between medical facilities is another story. Pre-pandemic, CareFlight had never been asked to transport a mechanically ventilated COVID-19 patient with severe ARDS in the prone position, as they were generally more often in ICU care. With those factors in mind, early in the pandemic CareFlight developed a defined protocol for transporting the intubated COVID-19 prone patient. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process. CareFlight met the challenge of transporting patients in the prone position. Providing a secure transition of the patient to the transport cot, maintaining appropriate patient positioning and padding while continuously monitoring and providing patient care in transport, and providing guidance in “Reverse CPR” were included in the prone patient transport educational process.

COVID-19 in its harshest form causes long injury including severe ARDS. Racing the intubated and mechanically ventilated COVID-19 prone patient with severe ARDS in the prone position is urgent and more often in ICU care. With those factors in mind, early in the pandemic CareFlight developed a defined protocol for transporting the intubated COVID-19 prone patient. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process. CareFlight met the challenge of transporting patients in the prone position. Providing a secure transition of the patient to the transport cot, maintaining appropriate patient positioning and padding while continuously monitoring and providing patient care in transport, and providing guidance in “Reverse CPR” were included in the prone patient transport educational process.

(continued on next page)
Critical Care Transport of ECMO Patients by Air and Ground

Michelle Balden, BSN, RN, CEN, Paramedic and Marcus Bower, MMS, RN, CEN, Paramedic

Transporting critically ill patients is nothing new for CareFlight, however in recent years, a growing treatment population has emerged in the transport world who require specialized care. The use of Extracorporeal Membrane Oxygenation (ECMO) and the facilities that provide it have increased with the onset of COVID-19. As a result, transfers to ECMO are more common, and the complexities of caring for ECMO patients are growing. A growing number of patients are critically ill and require ECMO as a life-saving intervention.

CareFlight provides life-saving support to patients with cardiac and/or pulmonary failure. It is a process where blood is pumped from the venous system and circulated through a machine to oxygenate the blood and remove carbon dioxide. That blood is then reinfused into either the venous system or the arterial system, depending on the level of support the patient requires.

CareFlight is a supportive therapy that can be initiated within a referring facility; however, in some instances, it would require patient transfer for ongoing management and treatment of severe cardiac or acute respiratory failure. For this transfer to occur, there must be a collaborative plan utilizing experts from multiple health care disciplines to ensure the safe and most stable transport possible.

When the decision is made to transfer a patient who is on ECMO, a call is placed to Premier Health’s Regional Referral Center (RRC). Information is then sent to the CareFlight Communication Center where the appropriate vehicle is dispatched to complete the transfer. Via air, this would include one of the four Dauphin helicopters in the CareFlight fleet. The Dauphin is unparalleled due to its larger size, dual engines, and spacious interior, which make it uniquely suited to transporting critically ill patients.

The CareFlight communication center will activate the closest CareFlight helicopter and then return to your location. In the Dauphin, the crew is equipped to perform vascular access, perform basic ventilator management, administer emergency medications, and continuously monitors the patient and his or her airway, intravenous drips, manages the equipment, and intervenes as necessary.

Transportation of patients requiring ECMO has changed throughout the years. Previously, ECMO systems were very large, and not suitable for transport especially by air. With modern technology, we not only have smaller, portable versions of earlier ECMO systems available, but many outlying facilities are now able to initiate this life-saving treatment followed by the transfer of patients to tertiary care facilities.

CareFlight Air and Mobile Services is proud to bridge that gap.

ECMO team members include left to right: Courtney Hinojosa, PT; Zack Goodbody, HSVN-RT; Michael Ayers, Flight Nurse; Vincent Nagy, DO; and Benjamin C. Post, Flight Nurse.

If you or your transport program have questions regarding prone patients, please contact Kristen Wright at krwright@premierhealth.com or myself.

Andy Hawk, MD
Director of Outreach, CareFlight Air and Mobile Services
(937) 208-6633
ahawk@premierhealth.com
Monitoring the Drive
By Brian Bates, Outreach Manager

Monitoring the Drive

Last year, CareFlight and Mobile completed over 4,400 Mobile Intensive Care Unit (MICU) transports for a total of 4,4,879 miles traveled, which in turn equates to many hours driving on the roads. With MICU missions occurring any time, day or night, and with as many hours on the road, it is imperative that safety is at the forefront of our minds at all times.

Crew fatigue is a leading cause of ambulance crashes across the country and a factor that can often go unnoticed without the proper checks and balances in place. One of the many ways CareFlight and Mobile strive to ensure MICU crew safety is through real-time vehicle monitoring. Each MICU is outfitted with a connectivity of each CareFlight MICU. Additionally, the Hawkeye 5500 has redundant data uplink capabilities (cellular and satellite) to ensure 100% connectivity of each CareFlight MICU. Additionally, each MICU is outfitted with a forward- and rear-facing camera that provides video feeds of the MICU cab, as well as the driver’s view of the road ahead. Together, these devices provide a type of safety that allows the CareFlight communication center to track each MICU in real-time and to receive alerts for excessive speed, harsh braking and accelerating, and crash androllover detection.

The Hawkeye 5500 has redundant data uplink capabilities (cellular and satellite) to ensure 100% connectivity of each CareFlight MICU. Additionally, each MICU is outfitted with a forward- and rear-facing camera that provides video feeds of the MICU cab, as well as the driver’s view of the road ahead. Together, these devices provide a type of safety that allows the CareFlight communication center to track each MICU in real-time and to receive alerts for excessive speed, harsh braking and accelerating, and crash and rollover detection.

The Hawkeye 5500 has redundant data uplink capabilities (cellular and satellite) to ensure 100% connectivity of each CareFlight MICU. Additionally, each MICU is outfitted with a forward- and rear-facing camera that provides video feeds of the MICU cab, as well as the driver’s view of the road ahead. Together, these devices provide a type of safety that allows the CareFlight communication center to track each MICU in real-time and to receive alerts for excessive speed, harsh braking and accelerating, and crash and rollover detection.

By Andrew C. Hawk, MD

CareFlight Meets the Challenge

Prone patient transports are a part of the core mission of CareFlight as a tertiary referral critical care center, as in the face of severe ARDS (acute respiratory distress syndrome) and persistently low oxygen levels despite standard interventions, transitioning to the prone ("face down") position may be lifesaving. In fact, the Miami Valley Hospital, K.I. C.H. as a tertiary referral critical care center, has been "proning" select complex intubated patients for years. Transporting an intubated and mechanically ventilated prone patient between medical facilities is another story. Pre-pandemic, CareFlight had never been asked to transport a patient in the prone position. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process.

Kristen Wright, RN

Intubated and mechanically ventilated patients in the ICU are traditionally positioned in the supine ("face up") position. However, in select cases, such as in the face of severe ARDS (acute respiratory distress syndrome) and persistently low oxygen levels despite standard interventions, transitioning to the prone ("face down") position may be lifesaving. In fact, the Miami Valley Hospital, K.I. C.H. as a tertiary referral critical care center, has been "proning" select complex intubated patients for years. Transporting an intubated and mechanically ventilated prone patient between medical facilities is another story. Pre-pandemic, CareFlight had never been asked to transport a patient in the prone position. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process.

Kristen Wright, RN

Prone Patient Transports: CareFlight Meets the Challenge
By Andrew C. Hawk, MD

We invite you to view the report
Visit PremierHealth.com/TAR

2020 Trauma Annual Report

Premier Health is proud to provide comprehensive, nationally recognized trauma care for the communities we serve. The 2020 Trauma Annual Report provides a complete picture of our trauma care – from life-saving technologies and research to international trauma outreach and our response to COVID-19.
Critical Care Transport of ECMO Patients by Air and Ground
Michelle Baldwin, BSN, RN, CDN, Paramedic and Marcia Roemer, MSN, RN, CEN, Paramedic

Transporting critically ill patients is nothing new for CareFlight. However, in recent years, a growing patient population has emerged in the transport world who require transport of ECMO. The use of Extracorporeal Membrane Oxygenation (ECMO) and the facilities that provide it have increased. With increasing numbers of patients requiring ECMO, the providers are finding they can care for ECMO patients on both air and land. The Dauphin helicopter is capable of transporting the additional caregivers and equipment required for these critically ill patients. These features, together with the ability to fly at speeds of up to 180mph, make the Dauphin one of the most capable helicopters in the industry for transporting critically ill patients. ECMO team members include cardiothoracic surgeons, operating room staff, critical care physicians, intensive care nurses, respiratory therapists, and perfusionists. When the decision is made to transfer a patient who is on ECMO, a call is placed to Premier Health’s Regional Referral Center (RRC). Information is then sent to the CareFlight Communication Center where the appropriate vehicle is dispatched to complete the transfer. Via air, this would include one of the four Dauphin helicopters in the CareFlight fleet. The Dauphin is unparalleled due to its larger size, dual engines, and spacious interior, which make it uniquely capable of transporting the additional caregivers and equipment required for these critically ill patients. ECMO is a supportive therapy that can be initiated within a referring facility. In such situations, many would require patient transfer for ongoing management and treatment of severe cardiac or acute respiratory failure. For this transfer to occur, there must be a collaborative plan utilizing experts from multiple health care disciplines to ensure the safest and most stable transport possible. In addition to the critical care transport team, these disciplines include cardiothoracic surgeons, operating room staff, critical care physicians, intensive care nurses, respiratory therapists, and perfusionists.

To detail, multiple isolated prone COVID-19 patients have been safely transported by both CareFlight air and MICU.

To date, multiple intubated COVID-19 patients have been safely transported by both CareFlight air and MICU. CareFlight transported more than 700 possible, probable, presumed, and COVID-19 positive patients by air and MICU in 2020. We continue to transport COVID-19 patients in 2021 and, when requested, CareFlight will transport by air or MICU intubated ventilator patients in the prone position.

Critical Care Transport of the Patients in the Prone Position

In some situations involving inclement weather and shorter out-of-hospital times, one of CareFlight’s four Dauphin Intensive Care Units (MICU) can also complete the transfer request. During the actual transport phase of care for a patient on ECMO, the perfusionist accompanies the patient onboard the aircraft or MICU and manages the ECMO system. All other aspects of the patient’s overall care, including the ventilator, intravenous medications, and any other equipment, such as the intra-aortic balloon pump and thrombolytic, are managed by the CareFlight medical crew. One on one mode, the crew closely and continuously monitors the patient and his or her airway, infuses drips, manages the equipment, and intervenes as necessary.

Transportation of patients requiring ECMO has changed throughout the years. Previously, ECMO systems were very large, and not suitable for transport especially by air. With modern technology, we not only have smaller, portable versions of earlier ECMO systems available, but many outlying facilities are now able to initiate this life-saving treatment followed by the transfer of patients to tertiary care facilities. These patients can present a logistical challenge, but with careful attention to detail, methodical movements, and an ever-present focus on safety, transfers are completed seamlessly.

CareFlight Air and Mobile Services is proud to bridge that gap.
Transporting critically ill patients is nothing new for CareFlight; however, in recent years, a growing treatment population has emerged in the transport world who require ECMO. The use of Extracorporeal Membrane Oxygenation (ECMO) and the facilities that provide it have increased with the spread of COVID-19. As our transport and continued care of these patients have evolved, a growing number of patients are critically ill and require ECMO as a life-saving intervention.

ECMO provides life-saving support to patients with cardiac and/or pulmonary failure. It is a process where blood is pumped from the venous system and circulated through a machine to oxygenate the blood and remove carbon dioxide. That blood is then reinfused either into the venous system or the arterial system, depending on the level of support the patient requires.

ECMO is a supportive therapy that can be initiated within a referring facility. However, in some instances, it would then require patient transfer for ongoing management and treatment of severe cardiac or acute respiratory failure. For this transfer to occur, there must be a collaborative plan utilizing experts from multiple health care disciplines to ensure the safest and most stable transport possible. In addition to the critical care transport team, these disciplines can include cardiothoracic surgeons, operating room staff, critical care physicians, intensive care nurses, respiratory therapists, and perfusionists.

When the decision is made to transfer a patient who is on ECMO, a call is placed to Premier Health’s Regional Referral Center (RRC). Information is then sent to the CareFlight Communication Center where the appropriate vehicle is dispatched to complete the transfer. Via air, this would include one of the four Dauphin helicopters in the CareFlight fleet. The Dauphin is a six-blade helicopter, making it uniquely capable of transporting the additional caregivers and equipment required for these critically ill patients. These features, together with the ability to fly at speeds of up to 180 mph, make the Dauphin one of the most elite helicopters in the industry for transfers. Once on scene, the medical crew closely and continuously monitors the patient and his/her environment, titrates drips, manages the equipment, and intervenes as necessary.

Transportation of patients requiring ECMO has changed throughout the years. Previously, ECMO systems were very large and not suitable for transport especially by air. With modern technology, we not only have smaller, portable versions of earlier ECMO systems available, but many outlying facilities are now able to initiate this life-saving treatment followed by the transfer of patients to a tertiary care facility. These patients can present a logistical challenge, but with careful attention to detail, methodical movements, and an ever-present eye on safety, transfers are completed seamlessly.

CareFlight Air and Mobile Services is proud to bridge the gap.
Monitoring the Drive
By Brian Bates, Outreach Manager

Blue-Sky Network’s Hawkeye 5500 onboard vehicle one of CareFlight’s five MICUs is outfitted with a forward-facing drive camera that provides video monitoring of the MICU cab, as well as the driver’s view of the road ahead. Together, these devices provide a layer of safety that allows the CareFlight communication center, along with our leadership team, to be alerted to any pre-cursor events, giving our team the ability to intervene prior to a catastrophic event.

The Hawkeye 5500 has redundant data uplink capabilities (cellular and satellite) to ensure 100% connectivity of each CareFlight MICU. Additionally, each MICU is outfitted with a forward- and rear-facing drive camera that provides video monitoring of the MICU cab, as well as the driver’s view of the road ahead. Together, these devices provide a type of safety that allows the CareFlight communication center, along with our leadership team, to be alerted to any pre-cursor events, giving our team the ability to intervene prior to a catastrophic event.

Last year, CareFlight Air and Mobile completed over 4,400 Mobile Intensive Care Unit (MICU) transports for a total of 14,879 miles traveled, which in turn equates to many hours driving on the roads. With MICU missions occurring any time, day or night, and with as many hours on the road, it is imperative that safety is at the forefront of our minds at all times.

Crew fatigue is a leading cause of ambulance crashes across the country and a factor that can often go unnoticed without the proper checks and balances in place. One of the many ways CareFlight ensures the safety of our teams is through real-time vehicle monitoring. Each MICU is equipped with the Hawkeye 5500, which in turn equates to many hours driving on the roads. With MICU missions occurring any time, day or night, it is imperative that safety is in the forefront of our minds at all times.

Here at CareFlight Air and Mobile, we are one team with one mission: to provide safe critical care transport, 24/7, 365!

We invite you to view the report
Visit PremierHealth.com/TAR

2020 Trauma Annual Report
Premier Health is proud to provide comprehensive, nationally recognized trauma care for the communities we serve. The 2020 Trauma Annual Report provides a complete picture of our trauma care – from life-saving technologies and research to international trauma outreach and our response to COVID-19.

In this issue
Prone Patient Transports: CareFlight Meets the Challenge
P-C-CFT13231-4/21

Intubated and mechanically ventilated patients in the ICU are traditionally positioned in the supine (“face up”) position in select cases, such as in the case of severe ARDS (acute respiratory distress syndrome) and persistently low oxygen levels despite standard interventions, transitioning to the prone (modified “face down”) position may be lifesaving. In fact, the Miami Valley Hospital ICU, as a tertiary referral critical care center, has been “proning” select complex intubated patients for years. Transporting an intubated mechanically ventilated prone patient between medical facilities is another story. Pre-pandemic, CareFlight had never been asked to transport a mechanically ventilated COVID-19 patient with severe ARDS in the prone position in such an early and more often in ICU cases. With those factors in mind in the pandemic, CareFlight developed a defined protocol for transporting the intubated prone patient. With her ICU experience, Kristen Wright, RN, CareFlight clinical operations manager, spearheaded the development and implementation of this novel critical care transport process.

CareFlight met the challenge of transporting patients in the prone position. Providing a secure translation of the patient to the transport cot, maintaining appropriate patient positioning and padding while continuously monitoring and providing care in transport, and providing guidelines in “Reverse CPR” were included in the prone patient transport educational process.

(continued on next page)