Pre-Course Orientation for EHS LifeFlight

EHS
Emergency Health Services
LifeFlight

EHS LIFEFLIGHT

Pre-Course Orientation Objectives

- Orientate to EHS LifeFlight and how the service fits within Emergency Health Services.
- Describe the benefits of air medical transport (AMT).
- Outline each component within the EHS LifeFlight Critical Care Transport system.
- Provide information about the EHS LifeFlight helicopters, fixed wing and ground transport vehicles.
- Describe launch criteria / response / landing options and flight following.
- Orientate to scene and remote scene responses and the types of helipads.
- Provide information on what to expect during your upcoming on-site training course.

Our Focus

Safety and Teamwork

EHS LIFEFLIGHT
PROGRAM STRUCTURE

NOVA SCOTIA'S PROVINCIAL
CRITICAL CARE TRANSPORT PROGRAM

Why do we need air medical transport in Nova Scotia?

- The medical community recognizes air medical transport as a vital component of delivering quality emergency medical care.

- EHS LifeFlight supports communities with critical care for ill and injured patients, usually requiring treatment from specialists located at the QEII, IWK or regional hospitals.

- Critical Care transport brings the specialty team directly to the patient, dramatically increasing the speed at which the patient begins receiving critical care.

- Additionally, air medical transport supports both hospital personnel and ground ambulance paramedic teams which helps to keep these valuable resources in Nova Scotia communities.

Our Mission Statement

To provide critical care to ill and injured patients; immediate clinical expertise, decision-making support, and safe, timely transport via rotor wing, fixed wing or ground ambulance.

Team Components

- Critical Care Paramedics, Nurses, Respiratory Therapists
- Medical Control Physicians
- Aviation Support Staff (Pilots and Engineers)
- Operational Support Staff
- Clinical Support Staff
- Administration Support Staff
- Air Medical Transport Communication Officers

Infrastructure Components

- 1 base (Halifax Stanfield International Airport)
- 1 satellite base (IWK)
- 2 Sikorsky S-76 C+ helicopters
- 1 King Air 200 fixed wing
- Province-wide system of ground ambulance vehicles
- Province wide system of hospital helipads, community helipads and airports

EHS LifeFlight Transport Options

Helicopter

Ground Ambulance

Fixed Wing

The AMT Communications Officer, MCP, EHS LifeFlight Duty Manager and sending site work together to provide the best transport solution given the limits set by the patient's clinical condition, the EHS system status, and weather limitations.

EHS LifeFlight Helicopters: Fast Facts

- Model: Sikorsky 76 C+ twin turbine
- Non-Pressurized
- Cruising speed: 140 Knots (260 km/hr)
- 100% Dual Pilot Operations
- Maximum lift: 11,700 pounds
- 3 Hrs Flight Duration
- Twin Engine VFR/IFR Operations

What's different in a helicopter?

- Cabin Space
  - 4.5 ft high, 5.5 ft wide, 7 ft long
  - 1 -2 stretchers, 4 medical crew seats and medical equipment bags
- Noise
  - AMC helmets, patient-headsets, earplugs
- Weight
  - Influence of warm temperatures
- Equipment
  - All equipment is assessed for Size, weight, altitude, temperature , vibration, etc.
  - Full Critical Care Specialized Equipment rated for the flight environment
- Landing Zone:
  - Airport, Hospital Helipad, Community Helipad, Scene

Helicopter Medical Interior

- The helicopter can be configured for one or two patients.
- Critical care equipment is required for all transports
- Dual oxygen and suction systems
- The AMT stretcher is not the same as ground and has a different locking system.

Helicopter Avionics & Control Systems

- This picture is of the inside of the EHS LifeFlight helicopter cockpit.
- All avionics and control systems are operational from either seat (Dual Pilots).
- The level of instrumentation on board surpasses many AMT operations in North America.

Helicopter Launch Time

- 10-minutes to wheels-up for 16-hours/day.
  0700-2300
- 60-minutes to wheels-up
  2300-0700
- Above response times apply to all calls.

- Neonatal / Pediatric RN, Obstetrics RN and RRT (based at the IWK) are picked up at the hospital heliport, Point Pleasant Park Helipad or the Halifax International Airport.

EHS LifeFlight Helicopter Flying Times

Nova Scotia

- Transport of the patient to the closest hospital with the ability of handling a patient's treatment from start to finish (Definitive Care).

Helicopter Landing Options

- Daylight hours:
  - Scene
  - Hospital helipads
  - Community helipads
  - Airports
- Nighttime hours
  - Hospital helipads
  - Community helipads
  - Airports

Helipad Information

Hospitals:

Hollow circle ○

Day / Night Approved Helicopter Pad:

White cross (+)

King Air 200

LZ Airport:

Pink circle ●

Benefits of Helipads

- Shortened patient transfer times.
- Especially true if both sending and receiving communities / hospitals have helipads.
- Most hospitals in Nova Scotia have helipads.

What happens in bad weather?

- Severe and changing weather does affect flight safety.
- EHS LifeFlight pilots always make the final decision to fly a mission based on safety and not on patient condition.
- Other options for transporting the air medical crew to patients include using the fixed wing airplane or ground ambulance.
- Option to meet patient enroute .

EHS LifeFlight Fixed Wing Fast Facts

- Model: Beech King Air 200 Twin Turboprop
- Pressurized
- Cruising speed: 260 Knots (482 km/hr)
- 100% Dual Pilot Operations
- Maximum lift: 12,500 pounds
- 5 Hrs Flight Duration
- Twin Engine IFR Operations

Fixed Wing Avionics & Communications

- This picture is of the inside of the EHS LifeFlight fixed wing cockpit.
- All avionics and control systems are operational from either seat (Dual Pilots).
- The level of instrumentation on board surpasses many AMT operations in North America.

Fixed Wing Launch Time

- 60-minutes to wheels-up 24 Hrs./Day
- Above response times apply to all mission types.
- Neonatal / Pediatric RN, Obstetrics RN and RRT (based at the IWK) are picked up at the hospital by ground ambulance and transported to the Halifax International Airport.

What's different in a fixed wing?

- Cabin Space
  - 4'9" high, 4'6" wide, 16'6" long
  - 1 -2 stretchers, 5 crew seats and medical equipment bags
- Noise
  - AMC headsets, patient-headsets, earplugs
- Equipment
  - All equipment is assessed for Size, weight, altitude, temperature , vibration, etc.
  - Full Critical Care Specialized Equipment rated for the flight environment
- Landing Zone:
  - Airport

What happens in bad weather?

- Severe and changing weather does affect flight safety.
- EHS LifeFlight pilots always make the final decision to fly a mission based on safety.
- Other options for transporting the air medical crew to patients include using the ground ambulance.
- Option to meet patient enroute at designated airports.

EHS LifeFlight Ground Ambulance Facts

- EHS LifeFlight Medical Critical Care Transport Teams routinely transport patient by EHS Ground Ambulances

- Access to over 150 ambulances in the province
- Response by Ground Ambulance is immediate
- LifeFlight brings their own specialized equipment for these transports

Ground Ambulance Medical Interior

- Cabin Space
  - 5’ high, 6’ wide, 10’ long
  - 1 stretcher, 4 crew seats and medical equipment bags
- Equipment
  - All equipment is assessed for size, weight, temperature , vibration, etc.
  - Full Critical Care Specialized Equipment

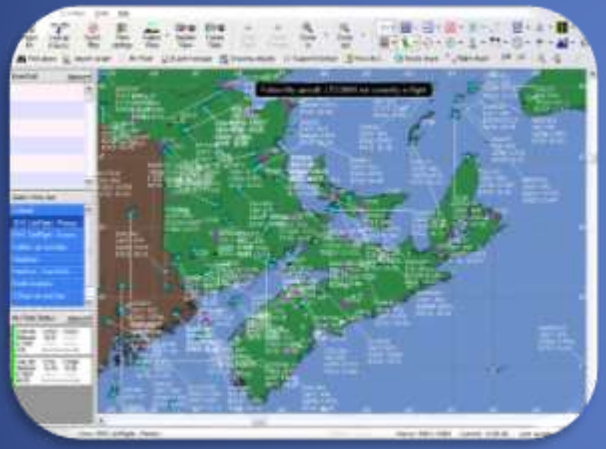
AMT Communications / Dispatch

- The EHS Medical Communications Centre is located in Dartmouth.
- There is a dedicated Paramedic AMT Communications Officer 24 / 7 / 365.
- Coordinates all aspects of an EHS LifeFlight Mission request.

EHS Medical Communications Centre Capabilities

- Receives both emergency and non-emergency calls for medical assistance.
- Paramedic trained communications officers.
- Digital mapping and dynamic system status planning.
- Flight following, Radio Communications, etc.

Flight Following



- No matter what aircraft EHS LifeFlight flies in, the EHS Medical Communications Centre can track in several different ways.
- This is all done for safety purposes.

MEDICAL OVERSIGHT

Medical Director

- Dr. George Kovacs
  - Overall responsibility for quality medical care of the program
  - Development of treatment protocols
  - Participation in research, education, medical administration and strategic management of the program
  - Quality of MCP's

Medical Control Physicians

1. Emergency Physicians
2. Pediatric Intensivists
3. Neonatologists
4. Maternal Fetal Medicine Specialists

- On-call 24 / 7 / 365 for each of the above specialties
- Online support for air medical crew, sending physicians and pre-hospital providers

Medical Elements

- Critical care scope of practice
- Protocols, procedures
- Online and offline medical control
- Hospital interface / communication
- Education and training
- Quality assurance
- Research and program evaluation

Air Medical Crew Configuration

- At Airport 24-hours:
  - Adult Flight CCP
  - Adult Flight RN
- At IWK 24-hours:
  - Obstetric RN
  - Neonatal / Pediatric RN
  - Neonatal / Pediatric RRT
- On-line Medical Control Physicians 24-hours

Air Medical Crew Training

- Hospital Partnerships
- Transport Course
- OR / ED / ICU / Case Room Training / etc.
- Simulator: Training
- Air Crew Safety and Aviation Training:
  - Underwater Egress
  - Winter Survival
  - Fire Suppression
  - Scene and Land Survival Training,
  - etc.

Adult, Neonatal, Pediatric and Obstetrics Protocols

- Direct medical control.
- Delegated medical functions (acts).
- Some procedures covered include:
  - IV medications
  - Blood product transfusion
  - RSI and advanced airway management
  - Central line insertion - femoral, UA and UV lines
  - Chest tubes, NG tubes and urinary catheter insertions

Critical Care Medical Equipment

- Advanced Airway Adjuncts
- Ventilators
- Invasive Monitoring
- Infusion Pumps
- Incubators
- Fetal Monitors
- Nitric Oxide, etc.

Interfacility Transfer of Care

- At the sending facility there is a transfer of care between the hospital and EHS LifeFlight teams.

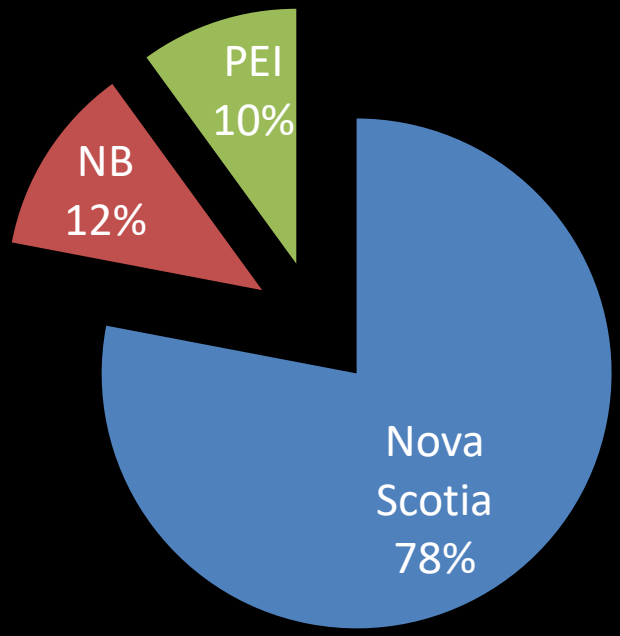
- Patient Care transferred to EHS LifeFlight MCP

EHS LifeFlight Coverage Area

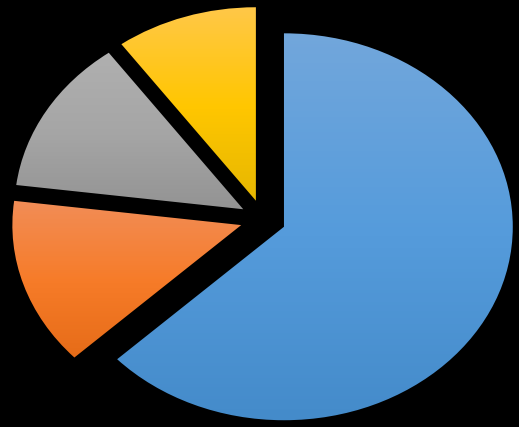
All Maritime Provinces

Over 2 LifeFlight Missions per Day

Where Do We Transport From



Annual Mission Profile



EHS LifeFlight Scene Response Program

- 100% of Nova Scotia
- Over 15,000 emergency service personnel have been trained province-wide including:
  - Paramedics
  - Firefighters
  - Police
  - GSAR, etc.

Scene Stand-by Criteria

- Any Ground Emergency Agency (Fire Fighters, Police, Paramedics, GSAR, etc.) may put EHS LifeFlight on “stand-by” while assessing the patient.
  - Life or limb time-dependent injury.
  - Critical care or ALS required beyond ground pre-hospital capabilities.
  - Critical care personnel and equipment may be needed to enhance care.
  - Weather or road conditions may delay patient access to hospital.
  - Extrication and ground transport time of greater than 30-minutes.

Standby Information Required by the EHS Medical Communications Centre

- Location of Scene:
  - GPS (Lat / Lon)
  - Closest Civic Address
  - Highway Numbers
  - Closest Town / Distances (N,S,E,W)
- HAZMAT Identification
- Number and weight of patients requiring AMT.

Ground Paramedic Response <20 Mins

- Ground Paramedics follow a trauma launch process for major trauma.
- Day or night launch.
- EHS LifeFlight goes airborne towards scene.
- Ground paramedics call conference with EHS LifeFlight Medical Control Physician (MCP) and provide a patient update.
- EHS LifeFlight MCP has final say and specifies patient rendezvous location (Daylight versus night options) and provides medical oversight

Paramedic Scene Launch Indications

Launch LifeFlight if the patient is a victim of penetrating and/or blunt trauma, with one or more of the following indications present.

Anatomic Criteria

- **Amputation proximal to elbows or knees**
- **Two or more suspected long bone fractures**
- **Suspected spinal cord injury**
- **Severe facial injuries with possible airway compromise**
- **Burns greater than 15% Body Surface Area**
- **Pediatric Trauma Score ≤ 8**

Paramedic Scene Launch Indications

Physiologic Criteria:

- Glasgow Coma Scale ≤ 12
- Respiratory rate < 10 or > 29 breaths per minute
- Shock, or significant hypotension (BP < 90 SYS)

Logistical Criteria:

- Simultaneous occurrence of three or more trauma patients, and/or local resources are overwhelmed with victims

Mechanism Criteria:

- Gunshot wound proximal to elbows or knees
- Any significant penetrating wound to the head, neck chest, abdomen or groin

Other:

- Paramedic Judgment

Ground Paramedic Response >20 Mins

- On scene caller will be call conference with the EHS LifeFlight MCP.
- Medical / Trauma / Cardiac Patients
- MCP approval required prior to launch.
- MCP provides online medical directives.
- Please notify if Hoisting may be required.

Is there a fee for EHS LifeFlight?

- There is no fee for service for Nova Scotia residents, sending hospitals or agencies using EHS LifeFlight as a critical care transport service within the province of Nova Scotia.
- A service fee will be charged to non-Nova Scotian and non-Canadian residents.
- Other provinces that contract this service may charge a fee to their residents.

Outline for the Scene Safety Course

- Daylight Scene LZ Selection
- Daylight Scene LZ Set-up
- Daylight Scene LZ Control
- HAZMAT Scene LZ Procedures
- Nighttime Operations
- Safety Rules Around the Helicopter
- Fire Suppression and Crew Evacuation
- Patient Preparations
- Mission Reviews
- Reference Materials Review
- Scenarios

Outline for the Helipad Safety Course

- Helipad Operations Overview
- LifeFlight Mission Plans
- Security Procedures
- Pre-Landing Checks
- Night Operations
- Pilot Report
- Communications
- Helipad LZO Procedures
- Safety Around the Helicopter
- Post Take-Off Checks
- Fire Suppression & Crew Evacuation
- Maintenance & Other Procedures
- Helipad Inspection

EHS
Emergency Health Services
LifeFlight

See you at the course!

Thank you!

EHS LifeFlight and Trauma Hotline

1-800-743-1334

www.ehslifeflight.ca

Visit our Base at the Airport

Call 873-3657 to book a tour!