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**STATE OF IDAHO**

**EMERGENCY MEDICAL SERVICES BUREAU**

**Review of Air Medical Criteria**

**July 2009**

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IDAHO DEPARTMENT OF  
**HEALTH & WELFARE**

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## **Acknowledgements**

The Idaho Department of Health and Welfare, Bureau of Emergency Medical Services (EMS Bureau) collects patient care report data (PCRs) from air medical agencies providing service in Idaho, licenses all EMS agencies in Idaho and conducts surveys regarding air medical agency capabilities. They also contract with and provide funding to the Idaho Hospital Association (IHA) for piloting and implementing a statewide trauma registry.

The following worked with the EMS Bureau to report air medical EMS service response data (January 1, 2008 – December 31, 2008), EMS service guidelines, patient treatment and outcome information and Trauma Registry data. It is because of their time and effort that the project has evolved.

### State Associations:

- Idaho Hospital Association

### Air Medical Agencies:

- Air Idaho Rescue
- Air St Lukes Magic Valley
- Air St Lukes
- Back Country Medic's
- Northwest Medstar
- Portneuf Life Flight
- Saint Alphonsus Life Flight

## Executive Summary

In December 2008, the EMS Bureau conducted a survey of air medical agencies to determine the data collection capabilities in preparation for this report. All eight agencies responded to the survey. Based on the results of that survey, the EMS Bureau conducted the Air Medical Survey in May of 2009. This survey queried the air medical agencies on the data points they indicated they would have the capability to collect in the December survey.

The EMS Bureau collects air medical information when agencies submit their patient care reports (PCRs). Information collected by both of these methods is self-reported and there is no mechanism for data validation of the self-reported data.

In 2007, the EMS Bureau required that each licensure application include EMS Air Medical Service Guidelines. IDAPA 16.02.03. Requires air medical agencies to notify StateComm of response to scene flight within 10 minutes of departure.

In October, 2005, the EMS Bureau contracted with the Idaho Hospital Association (IHA) to develop and implement a statewide trauma registry in compliance with Idaho Code §57-2003. The purpose of the registry was to collect data needed to analyze the incidence, severity, causes, costs and outcome of trauma in Idaho.

There are five sources of data for air medical agency criteria: licensed EMS air medical service response data via an online survey; licensed EMS Air Medical Service Guidelines in the annual licensure application for all licensed agencies; patient treatment and outcome information in Patient Care Reports; Trauma Registry data through the Idaho Trauma Registry; State Comm flight data.

Four agencies responded to and completed all questions in the on-line survey conducted in 2009. In addition, one agency attempted to respond twice and one agency completed only one question of the survey. All responses are included in the analysis. One hundred and ninety-seven agencies submitted license applications in 2007. Six air medical agencies submitted PCR data in 2008.

IHA has data sharing agreements with Idaho Transportation Department (ITD), Office of Highway Operations and Safety (OHOS) and Idaho Department of Health and Welfare, Bureau of Vital Records and Health Statistics (Vital Statistics). Fourteen hospitals submitted data including legacy data (cases collected by hospital with hospital-based registries prior to the pilot project), on-going submission by 10 hospitals, and 1 or more quarters of data submission by 4 additional hospitals.

Analysis revealed the following for data between January 1, 2008 – December 31, 2008 for survey results, PCR data, StateComm data and the Trauma Registry and 2007 data for EMS Air Medical service guidelines.

### **Analyses revealed results of the Air Medical Survey conducted in 2009:**

- 65% of air medical dispatches were for excessive ground time and 35% for back country locations of patients.
- Heart attacks and strokes were the greatest number of reasons for dispatch
- More than five times as many calls were cancelled by the agency at the scene after the rotor wing aircraft had lifted off than for all other reasons combined.
- at the scene reasons combined.
- The three leading reasons for interfacility transports were for cardiac, trauma and adult medical.
- Rotor wing aircraft used highway or a median as a landing zone one hundred and twenty-one times.

**Analyses revealed the following from StateComm data:**

- Forty-five percent of air medical incidents reported to StateComm were for Traffic/Transportation

**Analyses revealed the following from self reported Patient Care Reports:**

- Males (52%) were slightly more likely to be transported by air than females (48%).
- Falls were the leading cause of transports for 65+ population.
- Forty percent of all reasons for transport reported for 15-24 year olds were Motor Vehicle Crash traffic related incidents.
- Eighty percent of all calls, air medical was dispatched to medical facilities to take patients to other medical facilities for a higher level of care

**Analyses of Idaho Trauma Registry Data revealed the following:**

- The leading cause of patients transported to Idaho Trauma Registry Hospitals was motor vehicle collisions.
- The most severe injuries for air medical transports to ITR pilot hospitals were for motor vehicle collisions.
- Patient transports to ITR pilot hospitals by air ambulance were the longest from streets or highways.
- Known payers for patients transported to ITR pilot hospitals were private insurance; unknown payers were 15 times greater than private insurance.

**Analyses of Air Medical Guidelines submission data revealed the following:**

- Three-fourths of Idaho EMS agencies submitted Air Medical Service Guidelines with their licensure applications in 2007.

# Section I

## Air Medical Fundamentals

### Legislation

IDAPA 16.02.03.405-7 establishes STANDARDS FOR THE APPROPRIATE USE OF AIR MEDICAL AGENCIES BY CERTIFIED EMS PERSONNEL AT EMERGENCY SCENES

IDAPA 16.02.03.415 establishes AIR MEDICAL RESPONSE CRITERIA

IDAPA 16.02.03.420 establishes COMMUNICATIONS for Air Medical

IDAPA 16.02.03.425 establishes LANDING ZONE AND SAFETY

IDAPA 16.02.03.430 establishes PATIENT DESTINATION

IDAPA 16.02.03.435 defines the PERIODIC REVIEW OF EMS SYSTEM DATA

### Purpose

“The use of air medical services (AMS) has become an essential component of the health care system. Appropriately used air medical critical care transport saves lives and reduces the cost of health care. It does so by minimizing the time the critically injured and ill spend out of a hospital by bringing more medical capabilities to the patient than are normally provided by ground emergency medical services, and by quickly getting the patient to the right specialty care. Dedicated medical helicopters and fixed wing aircraft are mobile flying emergency intensive care units deployed at a moment’s notice to patients whose lives depend on rapid care and transport. While AMS may appear to be expensive on a single-case basis compared with ground ambulance service, individual examining the benefits behind the cost on an and system-wide basis shows that it is cost-effective. The picture of a helicopter at the

scene of a car crash evokes visions not only of the life-saving power of air medical services, but also of the risks of the environment into which they fly. Yet, air medical patient care and transportation actually promises less risk to the patient than does a patient’s hospital stay

‘Time is human tissue’ is a saying that means death and disability from severe injuries, heart attacks, strokes, medical and surgical complications, and other time-dependent conditions often can be avoided if the right care is provided quickly enough. AMS is a means to bridge geography and time. As technology provides new, time-sensitive care, the need for AMS will increase. As the costs of the health care system continue to rise, and the availability of even routine health care in rural communities is put at risk, AMS will play an increasingly important role in the delivery of health care.”<sup>1</sup>

Certified EMS personnel en route to or at the emergency scene summon air medical services providing coverage in Idaho. The primary responsibility and authority to request the response of air medical services is in accordance with the local incident management system and licensed EMS service written criteria. Air medical services do not respond to an emergency scene unless requested. Selection of an appropriate air medical service is not necessarily service driven but may be a function of an agency’s rotation schedule.

### Air Medical Response Criteria

Licensed EMS service certified personnel based on their patient assessment and transport time determine the need for an air medical request. The licensed EMS service

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<sup>1</sup> Air Medicine: Accessing the Future of Health Care. A Public Policy Paper by the Foundation for Air-Medical Research and Education

written criteria provides guidance to the certified EMS personnel for the following clinical conditions:

- a. The patient has a penetrating or crush injury to head, neck, chest, abdomen, or pelvis
- b. Neurological presentation suggestive of spinal cord injury
- c. Evidence of a skull fracture (depressed, open, or basilar) as detected visually or by a palpitation
- d. Fracture or dislocation with absent distal pulse
- e. A Glasgow Coma Score of ten (10) or less
- f. Unstable vital signs with evidence of shock
- g. Cardiac arrest
- h. Respiratory arrest
- i. Respiratory distress
- j. Upper airway compromise
- k. Anaphylaxis
- l. Near drowning
- m. Changes in level of consciousness
- n. Amputation of an extremity
- o. Burns greater than twenty percent (20%) of body surface or with suspected airway compromise

When associated with the above clinical conditions, the following complicating conditions require written guidance for EMS personnel:

- a. Extremes of age
- b. Pregnancy
- c. Patient "do not resuscitate" status

The licensed EMS service written criteria provides guidance to the certified EMS personnel for the following operational conditions

- a. Availability of local hospitals and regional medical centers
- b. Air medical response to the scene and transport to an appropriate hospital will be significantly shorter than ground transport time
- c. Access to time sensitive medical interventions such as percutaneous coronary intervention, thrombolytic

administration for stroke, or cardiac care;

- d. When the patient's clinical condition indicates the need for advanced life support and air medical is the most readily available access to advanced life support capabilities
- e. As an additional resource for a multiple patient incident
- f. Remote location of the patient
- g. Local destination protocols

### **Communications**

Service Guidelines: Each licensed EMS service establishes written criteria, approved by the EMS service medical director, to guide the decision of the service's certified EMS personnel to request an emergency scene.

The licensed EMS service establishes a uniform method of communication, in compliance with the local incident management system to request air medical response. Requests for an air medical response include the following information as it becomes available:

- a. Type of incident
- b. Landing zone location or GPS (latitude/longitude) coordinates, or both
- c. Scene contact unit or scene incident commander, or both
- d. Number of patients, if known
- e. Need for special equipment
- f. How to contact on scene EMS personnel
- g. How to contact the landing zone officer

The air medical service notifies the State EMS Communication Center within ten (10) minutes of launching an aircraft in response to a request for emergency services.

Notification includes:

- a. The name of requesting entity
- b. Location of the landing zone
- c. Scene contact unit an scene incident commander, if known

Upon receipt of a request for emergency services, the air medical service provides the requesting entity with an estimated time to arrival in hours and minutes at the location of the specified landing zone and any changes to that estimated time. Upon receipt of a request, the air medical service informs the requesting entity if the air medical service is not immediately available to respond.

The licensed EMS service in conjunction with the air medical service(s) has written procedures for establishment of landing zones. Such procedures are compatible with the local incident management system. The procedures for establishment of landing zones include identification of Landing Zone Officers with responsibility for the following:

- a. Landing zone preparation
- b. Landing zone safety
- c. Communication between ground and air agencies

The licensed EMS service assures that EMS certified personnel, designated as Landing Zone Officers, have completed training in establishment of an air medical landing zone based on the following elements. The air medical pilot may refuse the use of an established landing zone. In the event of pilot refusal, the landing zone officer will initiate communications to identify an alternative landing zone.

- a. The required size of a landing zone
- b. The allowable slope of a landing zone
- c. The allowable surface conditions

#### **Landing Zone and Safety**

The licensed EMS service in conjunction with the air medical service(s) has written procedures for establishment of landing zones. Such procedures are compatible with the local incident management system. The procedures for establishment of landing zones include identification of Landing Zone Officers (LZO) with responsibility for the following:

- a. Landing zone preparation
- b. Landing zone safety

- c. Communication between ground and air agencies

The licensed EMS service assures that EMS certified personnel, designated as Landing Zone Officers, have completed training in establishing an air medical landing zone based on the following elements:

- a. The required size of a landing zone
- b. The allowable slope of a landing zone
- c. The allowable surface conditions
- d. Hazards and obstructions
- e. Marking and lighting
- f. Landing zone communications
- g. Landing zone safety

Current EMS certified personnel, designated as Landing Zone Officers, complete required complete training as a component of required continuing education for recertification no later than June 30, 2010. The air medical pilot may refuse the use of an requested landing zone. In the event of pilot refusal, the landing zone officer will initiate communications to identify an alternate landing zone.

#### **Patient Destination**

The air medical service has written procedures for determination of patient destination. The air medical service written procedure considers the licensed EMS service destination protocol and medical direction received. The air medical service makes the written procedures available to licensed EMS services that utilize their services.

The air medical procedures for determination of destination honor patient preference if the requested facility is capable of providing the necessary medical care and if the requested facility is located within a reasonable distance not compromising patient care or the EMS system.

#### **Data Sources**

There are five sources of information about air medical service used in this report:

- Licensed EMS service response data via an online survey
- State Comm provided data from notification within 10 minutes of launching
- Patient treatment and outcome information in Patient Care Reports
- Trauma Registry data through the Idaho Trauma Registry Data.
- Licensed EMS Service Guidelines in the annual licensure application

## Section II

### Air Medical Data Report Overview

The following analyses of air medical service response data are based on:

- Air medical response to an on-line survey conducted in May, 2009, for the service period of January 1, 2008 through December, 31, 2008
- Idaho State Communications Center data January 1, 2008 through December 31, 2008
- Patient Care Reports for the reporting period of January 1, 2008 through December 31, 2008
- EMS agency license applications in 2007
- Idaho Trauma Registry from January 1, 2008 through September 30, 2008\*

In some cases, records were not segmented by rotor wing and fixed wing craft; therefore, exclusive rotor wing information was not analyzed.

John – address the reasons the response to survey data was so poor. The data collection tools they have, the inability to extract, the fact that they don't report data, etc. what we talked about.

Five separate agencies responded to the on-line survey. Four agencies completed all sixty-six questions on the survey, one agency attempted to complete the survey two times and one agency responded to only one question on the survey.

Seven agencies reported PCR data and no mechanism exists to determine the number of incidents that are not reported.

StateComm reported 689 incidents representing compliant agencies. No mechanism exists to measure the number of agencies that are not compliant.

ITR reported 511 hospital cases from patients transported by air ambulance to Idaho Trauma Registry Hospitals (ITR) and meeting ITR inclusion criteria. Forty-nine hospital cases reported patients transported by air ambulance to Idaho Trauma Registry Pilot Hospitals and meeting ITR inclusion criteria.

Hospitals providing data for this report are:

Clearwater Valley Hospital and Clinics	Portneuf Medical Center
Eastern Idaho Regional Medical Center	Saint Alphonsus Regional Medical Center
Franklin County Medical Center	St. Joseph Regional Medical Center – Boise
Gooding County Memorial Hospital	St. Luke's Regional Medical Center – Meridian
Kootenai medical Center	St. Luke's Wood River Medical Center
McCall Memorial Hospital	St. Mary's Hospital
Mercy Medical Center	

These analyses should not be interpreted as applying to Idaho overall, but rather are intended to provide information on basic types of analysis that can be conducted on air medical service data. Future analyses will not

be limited to the few categories containing data, but will also include analysis of other aspects of air medical criteria.

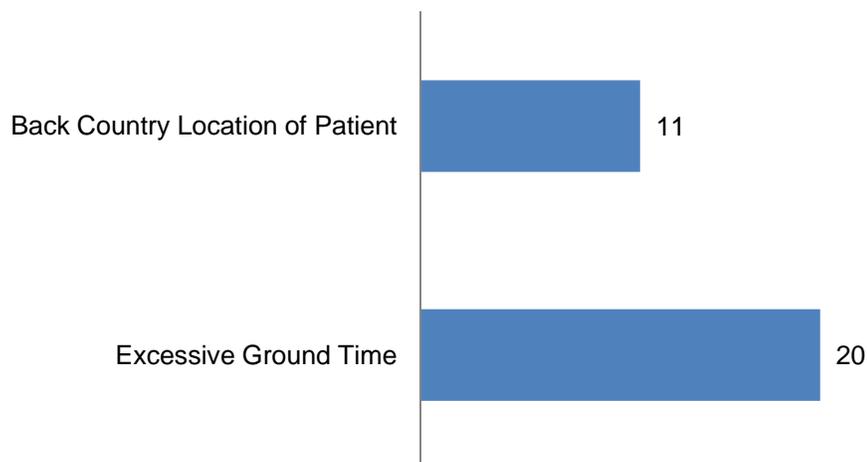
\*Hospitals have 90 days from the day of patient discharge to report to the Trauma Registry, resulting in a 6 months lag time for their data

## Air Medical On-line Survey Results

(Total Number of Rotor Wing Requests for Emergency Service = 1653)  
 (Not including auto launches, # of times agencies received calls for emergency service = 484)  
 n=3 agencies

### Dispatch

#### Operational Reasons for Dispatch



Responding agencies recorded operational reasons for dispatch for 31 dispatches.

The reason for operational dispatch was excessive ground time 65% of the time. The remaining 35% was for backcountry locations

Figure 1

“Reasons for dispatch” were consistent with “impression on scene” in all but the “Medical” and “Other” category. The reason for this may be that one agency combined all reasons for dispatch into one category that was medical.

Greatest number of reasons for dispatch/impression on scene was motor vehicle collision. Smallest number was for gunshot.

The “other” categories were not identified for specific type of injuries.

#### Clinical Reasons for Dispatch vs. Primary Impression on Scene

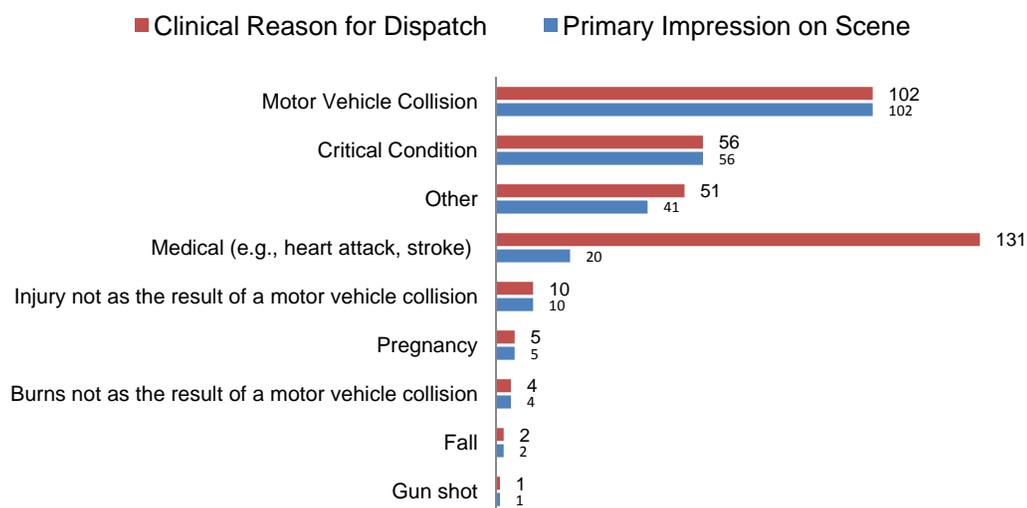
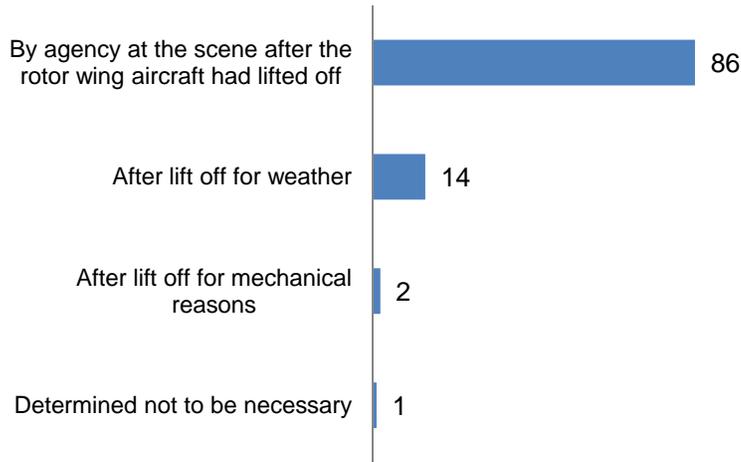


Figure 2

## Cancelled Calls

### Reasons for Cancelled Calls



Three agencies reported call cancellations. Two did not report any cancellations.

Greatest reason for call cancellations was by agency at the scene after rotor wing aircraft had lifted off, accounting for 83% of the reasons for cancelled calls.

Least reported reason for cancellation was when a call was "deemed not to be necessary."

Figure 3

## In Flight Procedures

One agency of four responding agencies reported records of in flight procedures.

Intubation was performed 3 times in flight. Performance of chest compression and Pericardiocentesis did not occur in 2008.

### In Flight Procedures

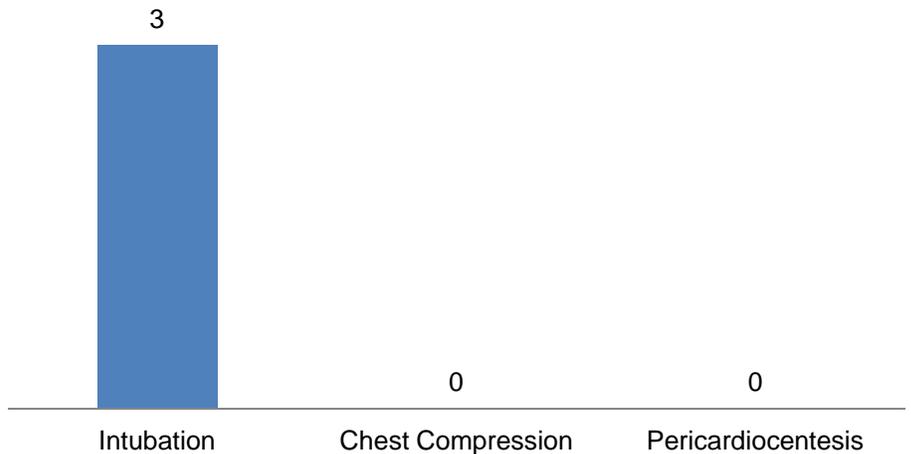
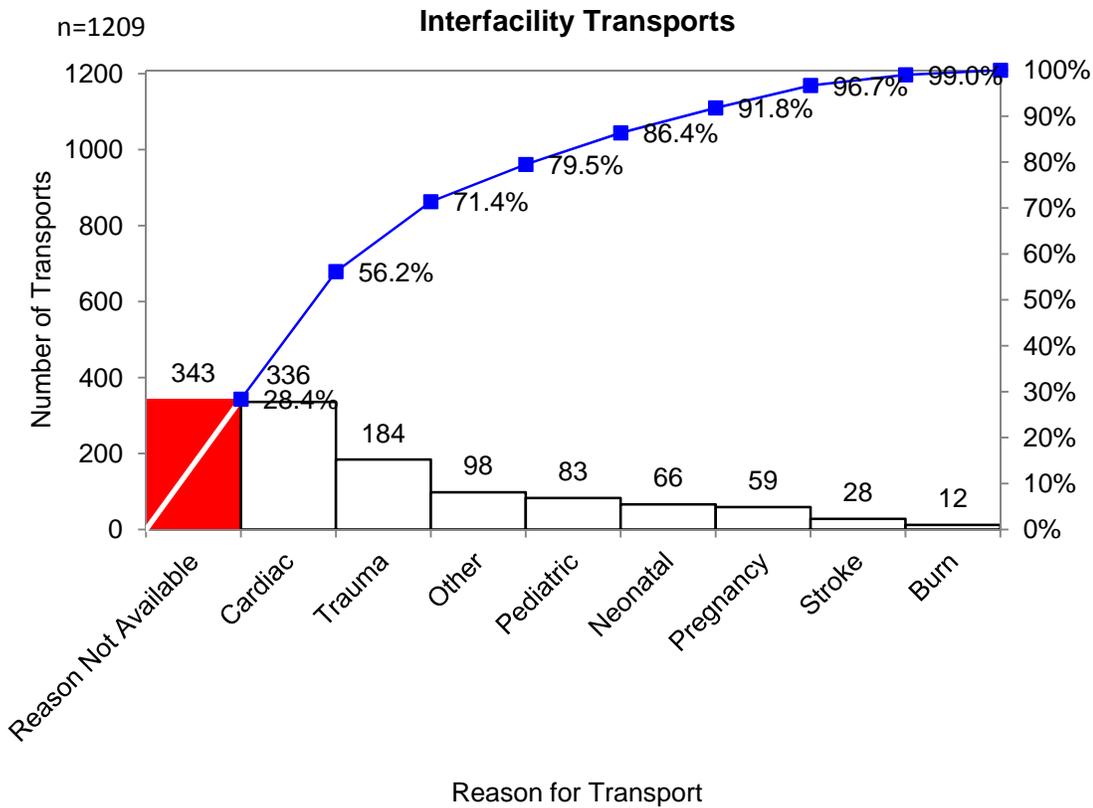


Figure 4

## Inter-facility Transports



Over one third of all inter-facility reasons for transports could not be identified or were unidentified "other."

Cardiac and trauma patients were 43% of all interfacility transports.

Figure 5

Table 1

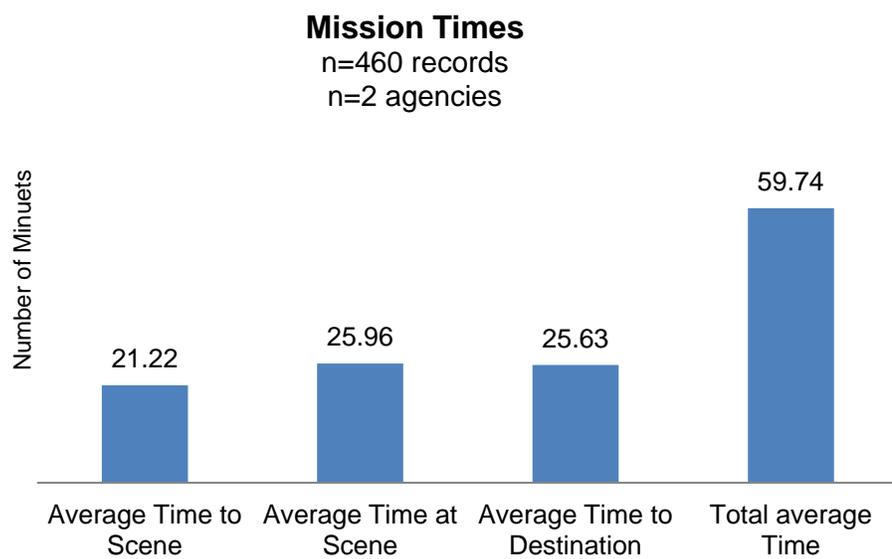
Remaining Categories of Survey Questions	Agency Response
Number of Auto Launch times for various reasons	0 or N/A
Calls not responded to for various reasons	0
Number of safety issues for various reasons	0 or N/A
Number of times multiple patients were flown	20
Number of times rotor wing aircraft used highway or median as landing zone	121

Reasons given for 0 or N/A to questions about autolaunch:

- We do not autolaunch in Idaho
- Cancelled by request
- We do not implement an autolaunch policy. All of our flights are the result of a request from external agencies.

The only reason given for flight cancellations was when the flight was cancelled by request.

## Air Transport Mission Times



Two agencies reported mission times. The average time for each segment of a mission as well as the overall average is reported.

The average total time for air medical calls was approximately 1 hour.

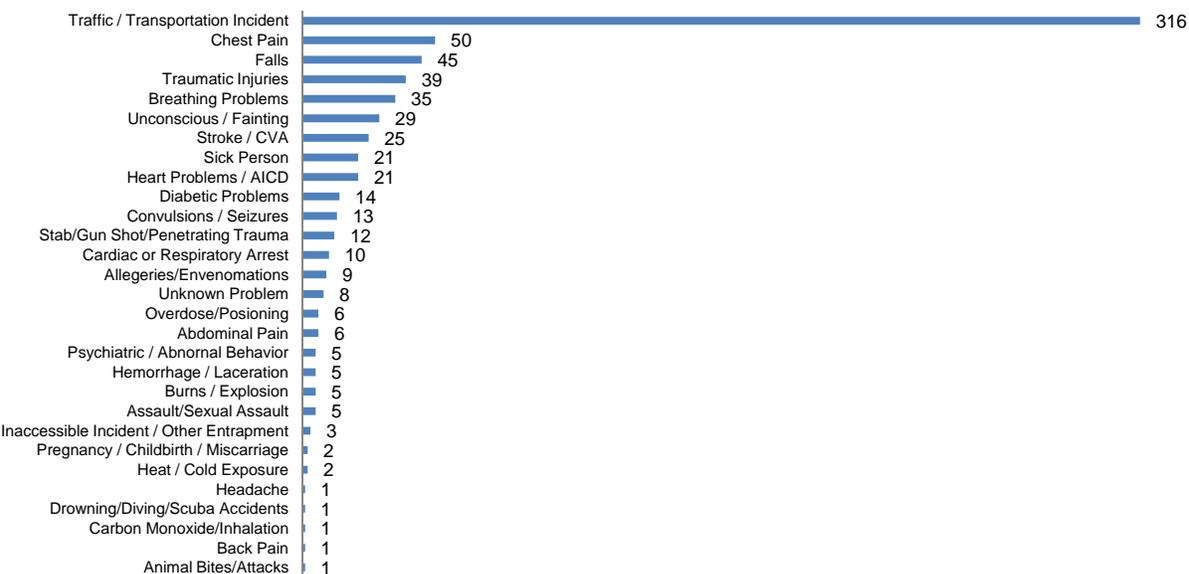
Figure 6

## State Comm

n=689 air medical incidents

### Air Medical Activity

#### Air Medical Dispatches CY2008



StateComm is not the primary dispatch center for any air medical unit. They receive calls from EMS and dispatch centers requesting assistance in sending an air medical unit to a scene. Reasons for dispatch are displayed in Fig 7.

Forty-six percent of dispatches by State Comm were for Traffic/Transportation Incident. All other categories combined were 54%. This is consistent with the data self reported in Figure 2.

Figure 7

StateComm conducts flight following of air medical agencies when the air medical agency will be out of range to speak with their own dispatch center. This is an infrequent occurrence.

#### Number of Flights Followed Monthly

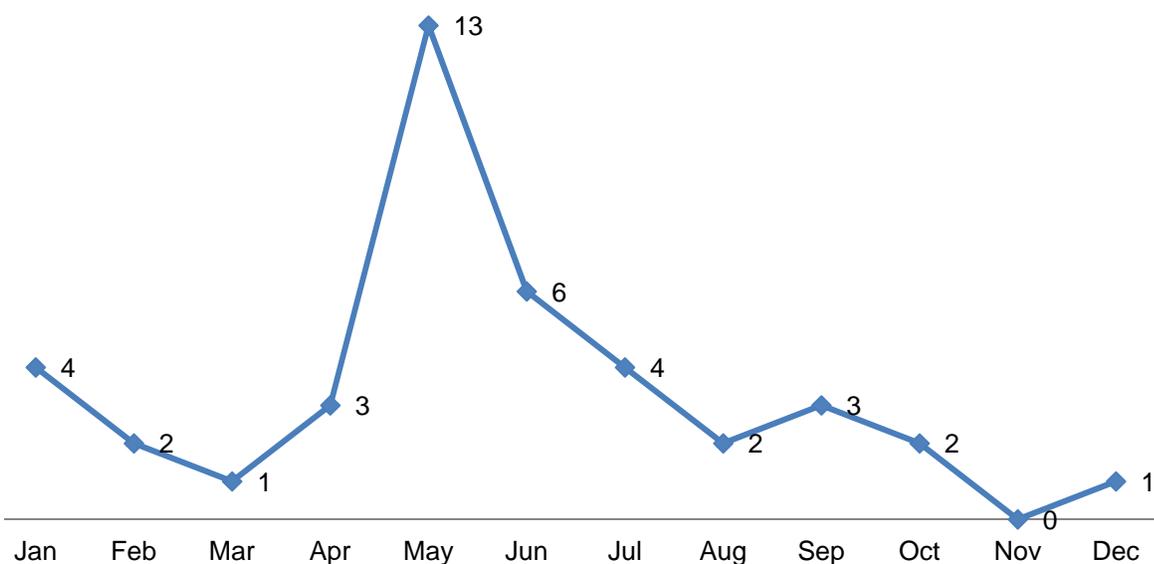
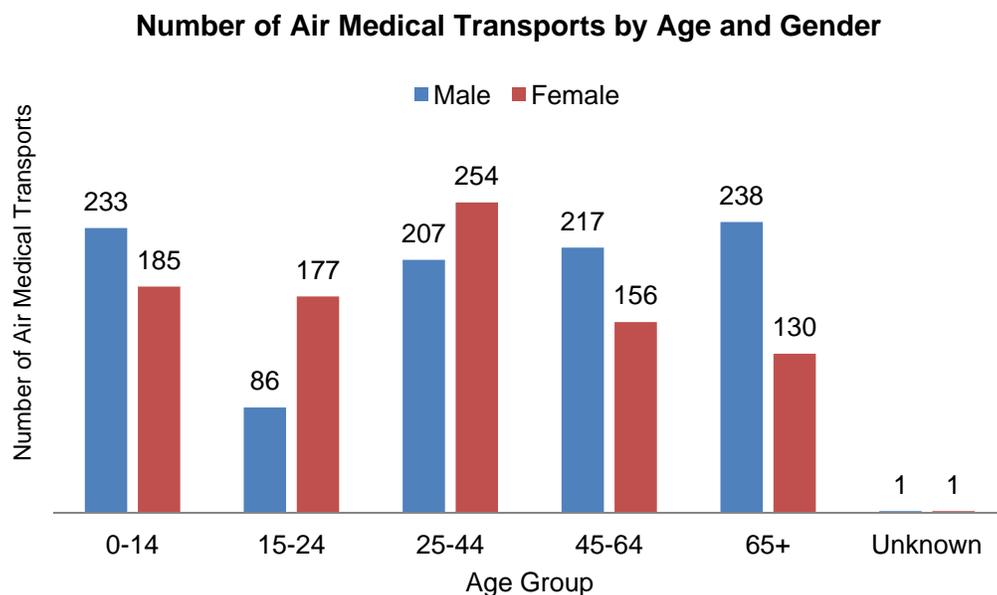


Figure 8

# Patient Care Reports from Prehospital Electronic Record Collection System (PERCS)<sup>2</sup> and Keydata<sup>3</sup>

n=7 agencies  
1885 patient records

## Air Medical Transports by Age and Gender



Air medical agencies that did not submit Patient Care Reports to the Idaho Emergency Medical Services Bureau are not included in this analysis.

Greater numbers of air medical transports occurred for males (982) and than for females (903).

Reported transports fell after 0-14 age group for males, but increased with each age group after.

Reported transports for females increase until age group 25-44 and decreased after.

Figure 9

Males were more likely to be transported by air than females (52% versus 48%). See Table 2

Males were transported at a higher rate in 3 age groups.

Nearly one-fourth of transports for males were among those aged 65 years or older, while only 14% of transports for females were those 65 years or older. See Table 2.

<sup>2</sup> PERCS: In 2001, NHTSA, Health and Human Services (DHHS) and Centers for Medicare & Medicaid Services (CMS) convened a group of federal partners and stakeholders to update and revamp the EMS data dictionary to improve data precision and expand the breadth of information collected. Once a data dictionary had been defined and adequately reviewed for breadth and clarity, the next step was for the federal government to begin to aggregate nationalized EMS data using the data dictionary and standard data format. The data dictionary currently defines four hundred twenty-five elements relating to typical pre-hospital EMS events. The event information is submitted by individual states and aggregated at the National EMS Information System (NEMSIS).

Today Idaho collects one hundred thirty-nine fields in the PERCS system with eighty agencies reporting directly through the PERCS system and another dozen currently in the validation phase for data exports to PERCS from their own proprietary data systems.

<sup>3</sup> Keydata: Initially was a paper based EMS data reporting system that evolved to include a PC based software program for data input and transmission to the state. The basis for this system was the 1992 National Highway Traffic Safety Administration (HTTSA) Uniform Prehospital Data System (UPDS) using eighty-one data fields. These eighty-one elements constituted the first generation HTSA data dictionary. Idaho collected forty-three data fields of the eighty-one fields defined.

The paper based portion of the system had inherent weaknesses due to the optical scanning technology used (ca.1993). These included rejection based on the manner in which the bubble was filled in (sloppy, or incomplete), and even the type of ink used – which if too glossy reflected the light back and was interpreted by the firmware to be incomplete or blank.

Table 2

<b>Percent of Transports by Air Medical Agencies by Age and Gender Patient Care Report Data (PERCS and Keydata)</b>				
	<b><i>Male</i></b>		<b><i>Female</i></b>	
Age (Years)	Number of Transports	Percent of Transports	Number of Transports	Percent of Transports
0-14	233	23%	185	20%
15-24	86	9%	177	20%
25-44	207	21%	254	28%
45-64	217	22%	156	17%
65+	238	24%	130	14%
Unknown	1	0%	1	0%

## Patient Care Reports from Keydata

n=6 agencies  
1632 patient records

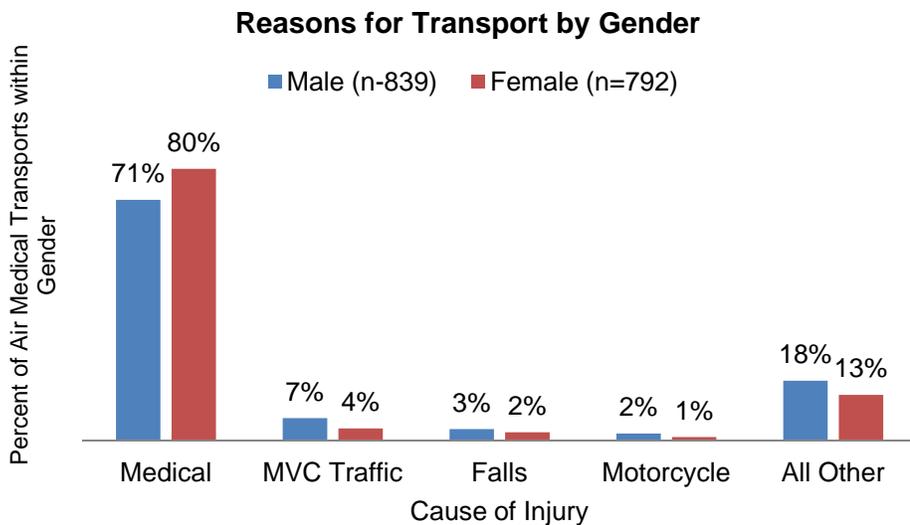
### Reason for Transport by Age and Gender

Table 3

Reason for Transport by Age and Gender Patient Care Reports – Keydata*											
Age (Years)	Medical		MVC Traffic		Falls		Motorcycle		All Other		Total
	M	F	M	F	M	F	M	F	M	F	
0-14	191	160	1	5	2	0	4	0	15	11	389
15-24	19	122	22	11	5	1	0	0	31	20	231
25-44	71	177	20	6	9	1	13	5	53	36	391
45-64	142	84	12	6	7	6	0	3	30	31	321
65+	169	88	0	0	5	11	0	0	18	7	298
Unknown	0	0	0	0	0	0	0	0	1	1	2
<b>Total</b>	<b>592</b>	<b>631</b>	<b>55</b>	<b>28</b>	<b>28</b>	<b>19</b>	<b>17</b>	<b>8</b>	<b>148</b>	<b>106</b>	<b>1632</b>

\*Patient Care Report data submitted by Idaho Air Medical Agencies Jan 1, 2008 – Dec 31, 2008

More air medical transports were for medical reasons than any other category of reason for transport, followed by motor vehicle collision (MVC) traffic injuries.



Females and males were more likely to be transported by air medical for medical reasons than for any other reasons combined.

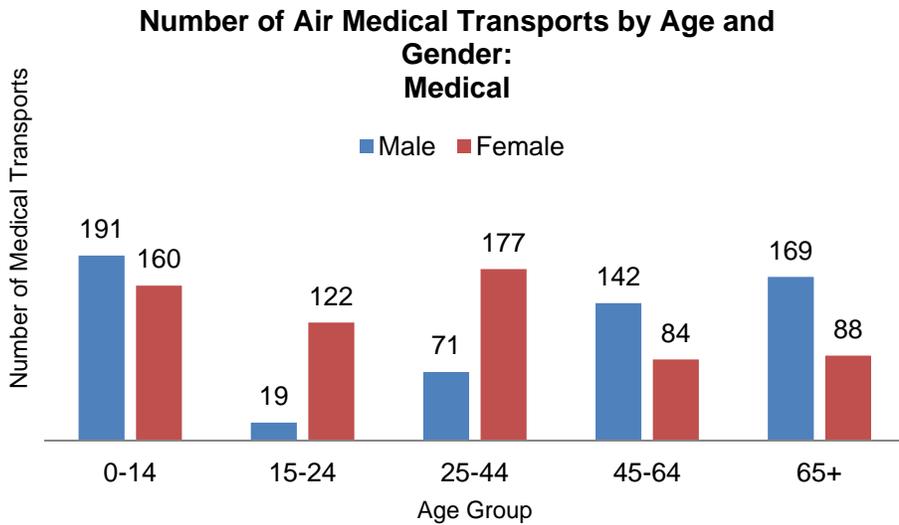
More than seventy percent of reported transports were due to medical reasons.

Twenty one percent as many males (247) were transported for the remaining reasons as females (161). See table 3.

Figure 10

## Medical Reasons for Air Medical Transports by Age and Gender

Nine percent more air medical transports were reported for females (631) than for males (592) among all age groups.



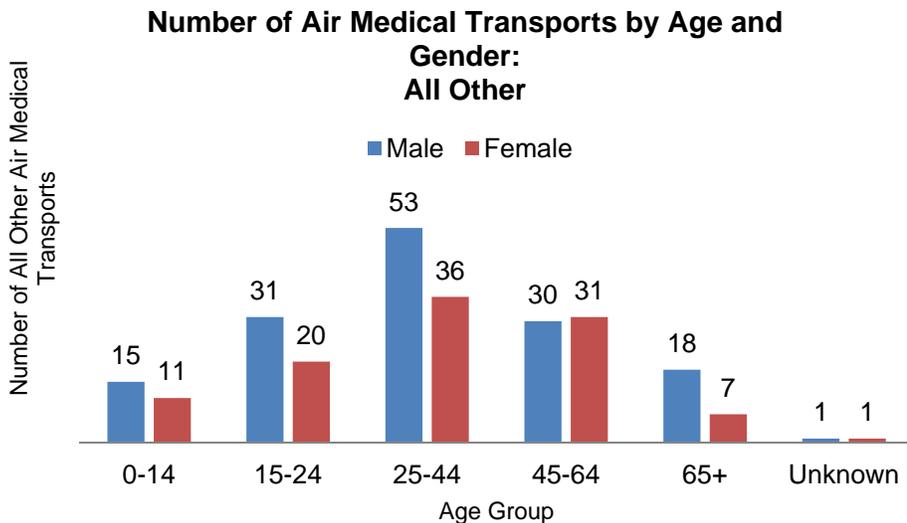
The greatest number of air medical transports for medical reasons was reported for males aged 0-14 (14 year age span), closely followed by males aged 65+ (40 year age span).

The greatest number of air medical transports for medical reasons for females was reported for ages 25-44.

Figure 11

## All Other Reasons for Air Medical Transports by Age and Gender

All other reasons for transports includes alcohol/drug, bite/sting, drown/near, bicycle, fire/burn, machinery, MVC non traffic, assault, shooting, stabbing, watercraft toxic exposures and unknown reasons.

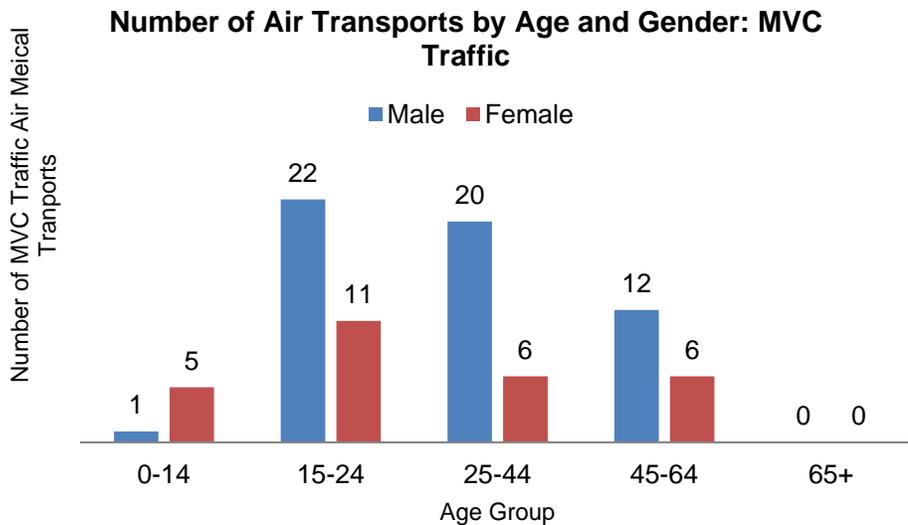


Males were more likely than females to be air medical transported for "All Other" reasons.

Figure 12

### MVC Traffic Reasons for Air Medical Transports by Age and Gender

Males were twice as likely to be transported by air medical for MVC Traffic for three age groups, although no air medical transports occurred for the 65+ age group.

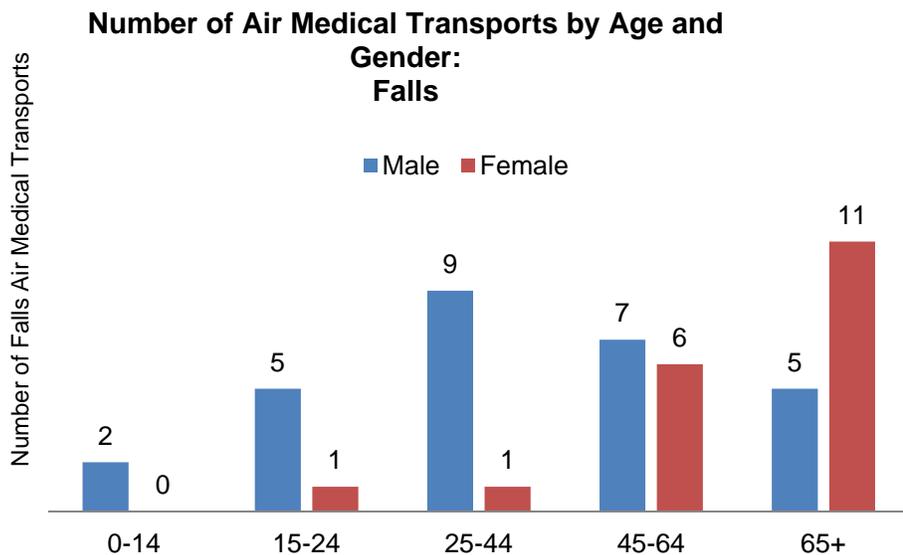


With the exception of ages 0-14, the number of MVC Traffic transports decrease with age.

Figure 13

### Fall Reasons for Air Medical Transports by Age and Gender

Males were more likely to be transported for falls, although two of three falls were reported for females ages 65 years and older. See Table 3.



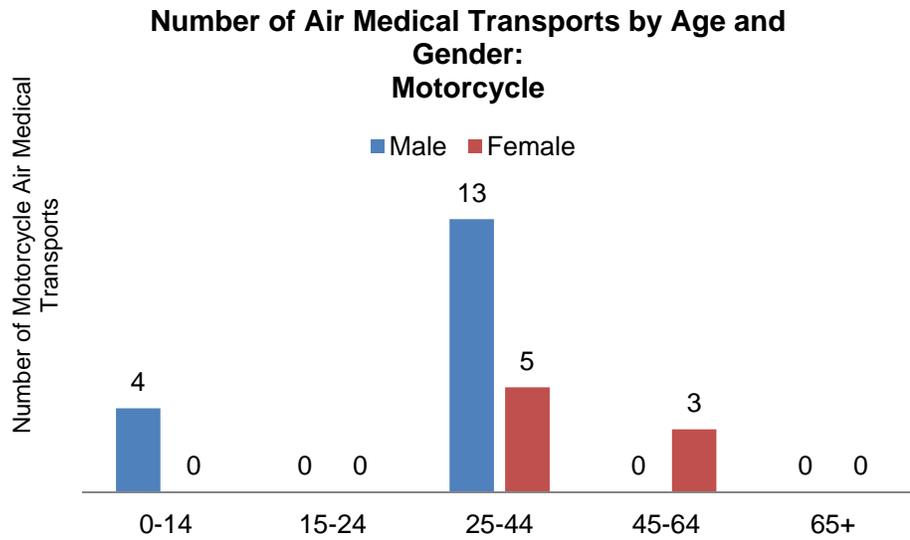
The number of falls transported increased with age for females.

The greatest number of air medical transports for falls for males was for ages 25-44.

Figure 14

## Motorcycle Reasons for Air Medical Transports by Age and Gender

The greatest number of air medical transports for motorcycle related incidents occurred in the age group 25-44.

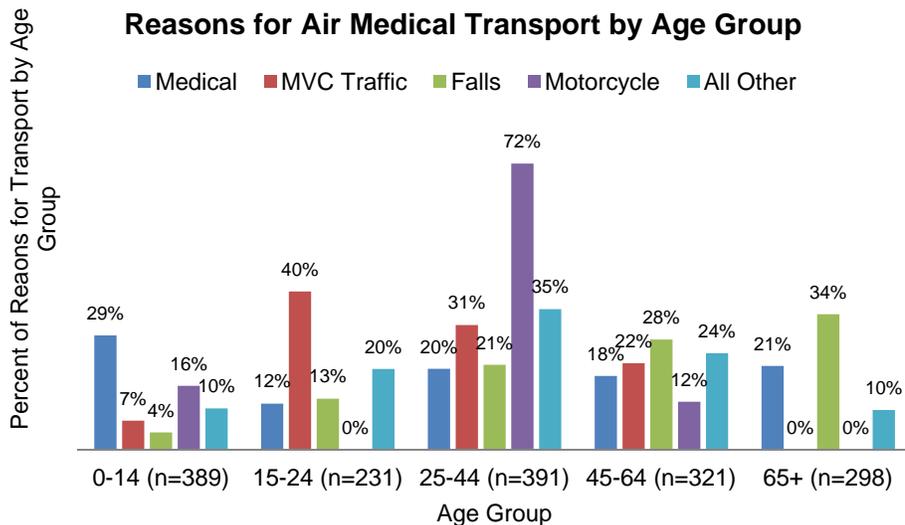


Approximately one in three motorcycle reasons for air medical transfers in the 25-44 age group was for males

Figure 15

## Reason for Transport by Age Group

Greater reasons for transport varied by age group.



Falls were the leading cause of injury for patients 65+ years. The trend is for an increasing number of transports for falls with each age group.

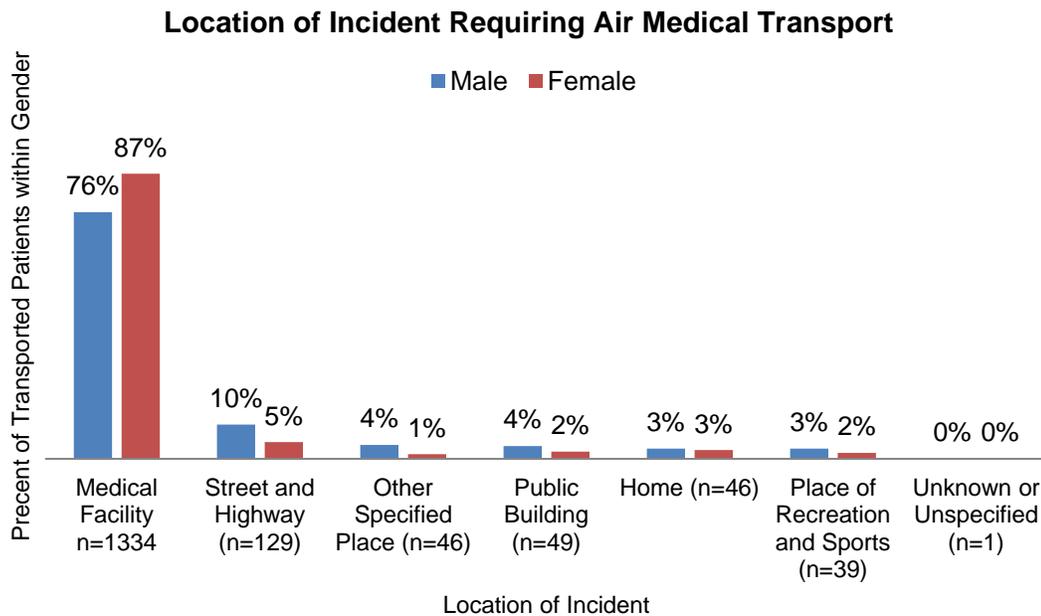
The leading reason for air medical transport in the 25-44 age group was motorcycle related.

Forty percent of all reasons for transport reported for 15-24 year olds were MVC traffic related.

Figure 16

## Location of Incident Requiring Air Medical Transport

Knowing where incidents occur is important for developing air medical operational improvements such as landing zones and deployment locations.



Eighty one percent of air medical transports originate at health care facilities.

One in twelve injuries that require air medical transport occurred on a public street or a highway.

Twice as many males required air medical transport because of injuries on a public street or highway.

Figure 17

Table 4

Location of Injury by Gender Patient Care Reports - Keydata*			
Place of Injury	Male	Female	Total
Medical Facility	655	679	1,334
Street and Highway	90	39	129
Other Specified Place	36	10	46
Public Building	33	16	49
Home	26	20	46
Place of Recreation	26	13	39
Unknown or Unspecified	1	0	1

\*Patient Care Report data submitted by Idaho Air Medical Agencies Jan 1, 2008 – Dec 31, 2008

## Trauma Registry

### Age, Gender and Cause

Table 5

Injury Cause by Age and Gender Patients Transported to Idaho Trauma Pilot Hospitals (ITR)* by Air Ambulance (and meeting ITR inclusion criteria) Hospital Cases (N=511) Injury Date January 1 – September 30, 2008									
	Motor Vehicle Collision (MVH)		Falls		Other Transport		All Other		Total
	M	F	M	F	M	F	M	F	
0-4	1	4	0	0	3	0	0	0	8
5-14	0	0	0	0	0	0	0	0	0
15-24	40	24	17	3	26	10	18	3	141
25-34	14	11	7	2	22	4	9	0	69
35-44	19	8	5	1	15	7	10	1	66
45-54	23	16	9	1	14	10	8	4	85
55-64	22	10	5	4	16	5	7	3	72
65+	16	2	21	13	7	4	6	1	70
<b>Total</b>	<b>135</b>	<b>75</b>	<b>64</b>	<b>24</b>	<b>103</b>	<b>40</b>	<b>58</b>	<b>12</b>	<b>511</b>

\*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Joseph Regional Medical Center, St. Luke's Regional Medical Center – Boise, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital

Table 6

<b>Injury Cause by Age and Gender</b> <b>Patients Transported to ITR Pilot Hospitals* by Air Ambulance</b> (and meeting ITR inclusion criteria) Hospital – EMS Linked Cases [N=49] Injury Date January 1 – September 30, 2008									
	Motor Vehicle Collision (MVH)		Falls		Other Transport		All Other		Total
	M	F	M	F	M	F	M	F	
0-4	0	0	0	0	1	0	0	0	1
5-14	0	0	0	0	0	0	0	0	0
15-24	6	2	0	0	3	0	0	1	12
25-34	2	1	0	1	2	0	2	0	8
35-44	2	2	1	0	1	0	1	0	7
45-54	2	2	2	0	0	0	0	0	6
55-64	3	0	1	0	3	0	1	0	8
65+	3	0	2	1	0	0	1	0	7
<b>Total</b>	<b>18</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>49</b>

\*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Joseph Regional Medical Center, St. Luke's Regional Medical Center – Boise, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital

### Injury Severity (ISS) by Cause

Table 7

<b>Injury Severity (ISS)* by Cause of Injury</b> <b>Patients Transported to ITR Pilot Hospitals** by Air Ambulance</b> (and meeting ITR inclusion criteria) Hospital Cases [N=511] Injury Date January 1 – September 30, 2008					
	MVC	Falls	Other Transport	All Other	Total
1-8	23	10	25	19	77
Minor					
9-15	50	39	54	27	170
Moderate					
16-24	61	26	39	12	138
Severe					
25+	75	13	25	12	125
Very Severe					
Unknown	1	0	0	0	1
<b>Total</b>	<b>210</b>	<b>88</b>	<b>143</b>	<b>70</b>	<b>511</b>

\*Hospital calculated ISS based on Abbreviated Injury Scale (AIS) coding.  
 \*\*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Joseph Regional Medical Center, St. Luke's Regional Medical Center – Boise, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital

Table 8

<b>Injury Severity (ISS)* by Cause of Injury</b> <b>Patients Transported to ITR Pilot Hospitals** by Air Ambulance</b> (and meeting ITR inclusion criteria) Hospital – EMS Linked Cases [N=49] <b>Injury Date January 1 – September 30, 2008</b>					
	MVC	Falls	Other Transport	All Other	Total
1-8	2	2	2	0	6
Minor					
9-15	6	2	5	1	14
Moderate					
16-24	9	2	3	3	17
Severe					
25+	8	2	1	1	12
Very Severe					
Unknown	0	0	0	0	0
<b>Total</b>	<b>25</b>	<b>8</b>	<b>11</b>	<b>5</b>	<b>49</b>

\*Hospital calculated ISS based on Abbreviated Injury Scale (AIS) coding.

\*\*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Joseph Regional Medical Center, St. Luke's Regional Medical Center – Boise, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital

### Transport Time by Injury Location

Table 9

<b>Transport Time by Injury Location</b> <b>Patients Transported to ITR Pilot Hospitals* by Air Ambulance</b> (and meeting ITR inclusion criteria) Hospital – EMS Linked Cases [N=49] <b>Injury Date January 1, - September 30, 2008</b>						
Time** (Minutes)	Street or Highway	Home	Place for Recreation or Sports	Other	Unknown	Total
<30	0	0	0	0	1	1
30-59	3	0	2	9	6	20
60-89	0	0	0	0	0	0
90+	10	2	1	4	11	28
<b>Total</b>	<b>13</b>	<b>2</b>	<b>3</b>	<b>13</b>	<b>18</b>	<b>49</b>

\*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Luke's Regional Medical Center – Boise, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital

\*\*Transport Time = Hospital Arrival Time less Dispatch Time

## Primary Payer

Tables 10&11

<b>Hospital Payment Source                      Primary Payer at Time of Case Submission                      Patients Transported to ITR Pilot Hospitals*                      By Air Ambulance                      (and meeting ITR inclusion criteria)                      Hospital Cases [N=511]                      Injury Date January 1 – September 30, 2008</b>		
	Number	Percent
Private Insurance	29	6%
Self pay	8	2%
Medicaid	3	1%
Medicare	7	1%
Worker's Compensation	2	0%
Other Government	0	0%
Not Billed	2	0%
Other	0	0%
Unknown	460	90%
<b>Total</b>	<b>511</b>	<b>100%</b>
*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Joseph Regional Medical Center, St. Luke's Regional Medical Center – Boise, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital		

<b>Hospital Payment Source                      Primary Payer at time of Case Submission                      Patients Transported to ITR Pilot Hospitals*                      By Air Ambulance                      (and meeting ITR inclusion criteria)                      Hospital – EMS Linked Cases [N=49]                      Injury Date January 1 – September 30, 2008</b>		
	Number	Percent
Private Insurance	6	12%
Self Pay	0	0%
Medicaid	0	0%
Medicare	1	12%
Worker's Compensation	0	0%
Other Government	0	0%
Not Billed	0	0%
Other	0	0%
Unknown	42	86%
<b>Total</b>	<b>49</b>	<b>100%</b>
*Clearwater Valley Hospital and Clinics, Eastern Idaho Regional Medical Center, Franklin County Medical Center, Gooding County Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Kootenai Medical Center, McCall Memorial Hospital, Mercy Medical Center, Portneuf Medical Center, Saint Alphonsus Regional Medical Center, St. Joseph Regional Medical Center, St. Luke's Regional Medical Center – Meridian, St. Luke's Wood River Medical Center, St. Mary's Hospital		

# Agency Licensure Applications

Air Medical Service Guidelines

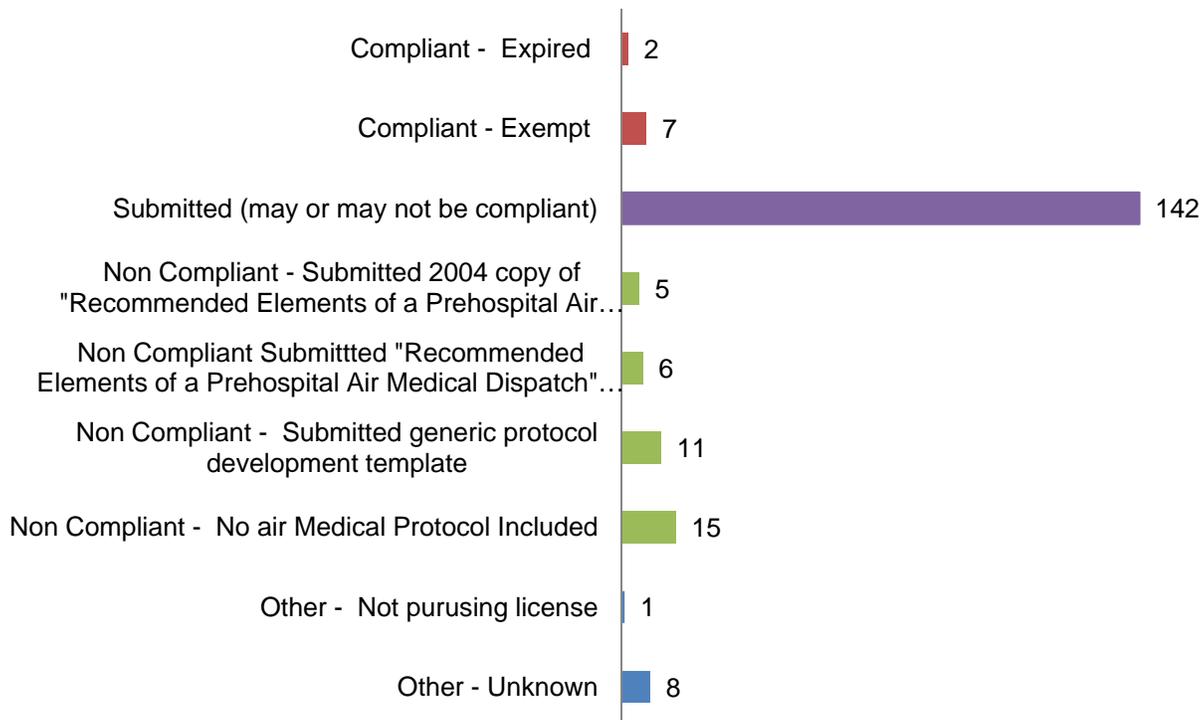
2007 Licensure Cycle

197 Agencies

## Air Medical Service Guidelines Compliance Level

All Idaho EMS agencies applying for licensure in 2007 were required to include Air Medical Service Guidelines

### Number of Agencies Compliant with Rule for EMS Air Medical Service Guidelines - 2007 Licensure Cycle



Five percent of agencies were compliant.

Seventy-two percent of all agencies submitted air Medical Services guidelines. The compliance level of the submissions was undetermined.

Eighteen percent of all agencies submitted incorrect documentation and were considered non compliant.

Figure 18

# Section III

## Systems Report

### Data Quality Assurance

Air Medical Survey, Patient Care Report and StateComm Data is self disclosed information provided by individuals and agencies and reflects only what they were willing and capable of providing.

Agency licensure applications and attachments are reviewed and recorded by EMS Bureau staff. Secondary reviews are not conducted except on an ad hoc basis.

Trauma Registry has several systems in place to assure data quality including: 1) case review, and 2) data review.

Case review:

- All cases entered into the web-based data collection system are reviewed to assure timelines are realistic, cause of injury codes are consistent with the injury type and location, injuries are coded appropriately, procedures performed are consistent for the injuries reported, hospital length of stay is reasonable for the injuries sustained, and all data fields are filled.

#### Database review:

- A data analyst reviews each quarterly database update to reveal data collection and transfer issues prior to report generation.

### Hospital Reports

A set of four hospital reports has been developed to provide feedback to hospitals on the types of trauma patients they treat and to improve data quality:

- The trauma patient profile report provides information on the types of trauma cases treated.
- The data entry quality report provides feedback on the timeliness, completeness, and quality of data submitted.
- The missing data report requests data fields left blank and additional injury detail for cases reported.
- The case listing report provides a record of all cases submitted to ITR.

### Idaho Statewide Trauma Network

Trauma nurse coordinators and trauma program managers from four Idaho hospitals joined with ITR staff persons to form the Idaho Statewide Trauma Network (ISTN) in order to provide a mentorship and training network for hospital trauma nurse coordinators, trauma program coordinators, emergency department nurse managers, and trauma registrars.

In addition to ongoing mentoring opportunities, hospital-hosted meetings will be held tri-annually, one each in northern, southeastern, and southwestern Idaho. A trauma registrar-specific training will be held annually just prior to one meeting.