Appendix – J

FALL 2016 UNIVERSITY ACADEMIC CALENDAR

All deadlines are due by the close of business on that date. Information in this handbook may be subject to change.
If you have any questions, contact Registrar Services at 509-963-3001.

REGISTRATION AND CLASSES

April 25	Registration Assignment	Log into MyCWU to view enrollment appointment for web registration
April 25	Schedule Goes Live	View in MyCWU
April 25	Advising Begins	FALL 2016 advising
May 9-June 10	Registration	For continuing students (*During the assigned enrollment appointment)*
August 1	OPEN ENROLLMENT	Students may add/drop classes until change of schedule period ends.
September 7	Leave of Absence	Students not attending FALL quarter must submit request
September 19	**Faculty Development Day**	**Before classes start**
September 21	**CLASSES BEGIN**	**First day of classes for FALL**
September 27	Change of Schedule Period Ends	Add/Drop classes-*Drops completed prior to this date or by the close of business on this date will not appear on transcripts or have tuition assessed.*
September 27	TUITION AND FEES DUE	Check with the Cashiers Office or view your statement online for amount due. Student has 100 percent tuition liability if classes are not dropped by this date.
September 27	Audit and Credit/No Credit	Deadline to declare audit and credit/no credit
Sept 27-Oct 3 until midnight	CWU Payment Plan - Open Enrollment Period	Students may split their quarter charges in three easy payments instead of one. A $50 enrollment fee applies.
Sept.28-Oct.4	$25 Late Registration Fee	Instructor signature required to enroll
October 4	$50 Fee - Unpaid Tuition and Fees	A $50 late fee will be assessed on unpaid tuition-and-course-fee balances. Student has 100 percent tuition liability.
Oct. 5-Nov. 1	$50 Late Registration Fee	Instructor and Department Chair signatures required to enroll
October 18	$100 Fee-Unpaid Tuition and Fees	A $100 late fee will be assessed on unpaid tuition-and-course-fee balances. Student has 100 percent tuition liability.
Nov. 2-Dec. 2	$75 Late Registration Fee	Instructor and Department Chair signatures required to enroll
Nov. 7-Dec. 2	Registration for WINTER	See Winter 2017 calendar
November 11	Veterans Day	No classes/administrative offices closed
November 23-25	Thanksgiving and Native American Heritage Day Recess	No classes/administrative offices open November 23 No classes/administrative offices closed November 24-25
December 2	Course Challenge Form Deadline	Deadline to submit course challenge forms to Registrar Services
December 2	Classes End	Last day of class instruction
December 5	**Study Day**	**Study Day**
December 6-9	**FINAL EXAMS**	**See exam schedule**
December 9	End of Quarter	End of Quarter (last day of finals)
December 13	Grades Due	10:00 p.m. deadline for instructors to submit grades via MyCWU
54	Instructional Days per Quarter	Includes final exams and study days

WITHDRAWAL DEADLINES

Oct. 20	Deadline for 50 percent refund with complete withdrawal
Nov. 4	Uncontested withdrawal period deadline
Dec. 2	Hardship withdrawal petition deadline
Dec. 2	Complete university withdrawal

GRADUATION DEADLINES

July 1	Deadline to apply for baccalaureate degree for FALL 2016
Sept. 21-27	Master's degree final folder check for FALL needs to be requested during first week of classes
Sept. 30	Deadline to apply for baccalaureate degree for WINTER
Nov. 28	Complete all master's degree requirements for FALL graduation

WINTER 2017 UNIVERSITYACADEMIC CALENDAR

All deadlines are due by the close of business on that date. Information in this handbook may be subject to change.
If you have any questions, contact Registrar Services at 509-963-3001.

REGISTRATION AND CLASSES

October 24	Registration Assignment	Log into MyCWU to view enrollment appointment for web registration
October 24	Schedule Goes Live	View in MyCWU
October 24	Advising Begins	WINTER advising
Nov. 7- Dec. 2	Registration	For continuing students (*During the assigned enrollment appointment)*
December 12	OPEN ENROLLMENT	Students may add/drop classes until change of schedule period ends.
December 21	Leave of Absence	Students not attending WINTER quarter must submit request
January 4	**CLASSES BEGIN**	**First day of classes for WINTER**
January 10	Change of Schedule Period Ends	Add/Drop classes-*Drops completed prior to this date or by the close of business on this date will not appear on transcripts or have tuition assessed.*
January 10	TUITION AND FEES DUE	Check with the Cashiers Office or view your statement online for amount due. Student has 100 percent tuition liability if classes are not dropped by this date.
January 10	Audit and Credit/No Credit	Deadline to declare audit and credit/no credit
Jan. 10-Jan. 17 until midnight	CWU Payment Plan - Open Enrollment Period	Students may split their quarter charges in three easy payments instead of one. A $50 enrollment fee applies.
January 11-17	$25 Late Registration Fee	Instructor signature required to enroll
January 16	Martin Luther King Jr. Holiday	No classes/administrative offices closed
January 18	$50 Fee - Unpaid Tuition and Fees	A $50 late fee will be assessed on unpaid tuition-and-course-fee balances. Student has 100 percent tuition liability.
Jan. 18-Feb. 15	$50 Late Registration Fee	Instructor and Department Chair signatures required to enroll
February 1	$100 Fee -Unpaid Tuition and Fees	A $100 late fee will be assessed on unpaid tuition-and-course-fee balances. Student has 100 percent tuition liability.
Feb. 13-Mar. 10	Registration for SPRING	See SPRING 2017 Calendar
Feb. 16-Mar. 10	$75 Late Registration Fee	Instructor and Department Chair signatures required to enroll
February 20	President's Day	No classes/administrative offices closed
March 10	Course Challenge Form Deadline	Deadline to submit course challenge forms to Registrar Services
March 10	Classes End	Last day of class instruction
March 13	**Study Day**	**Study Day**
March 14-17	**FINAL EXAMS**	**See exam schedule**
March 17	End of Quarter	End of Quarter (last day of finals)
March 21	Grades Due	10:00 p.m. deadline for instructors to submit grades via MyCWU
51	Instructional Days per Quarter	Includes final exams and study days

WITHDRAWAL DEADLINES

Feb. 2	Deadline for 50 percent refund with complete withdrawal
Feb. 17	Uncontested withdrawal period deadline
March 10	Hardship withdrawal petition deadline
March 10	Complete university withdrawal

GRADUATION DEADLINES

Sept. 30	Deadline to apply for baccalaureate degree for WINTER
Jan. 4-10	Master's degree final folder check for WINTER needs to be requested during first week of classes
Jan. 13	Deadline to apply for baccalaureate degree for SPRING
March 10	Complete all master's degree requirements for WINTER graduation

SPRING 2017 UNIVERSITY ACADEMIC CALENDAR

All deadlines are due by the close of business on that date. Information in this handbook may be subject to change.
If you have any questions, contact Registrar Services at 509-963-3001.

REGISTRATION AND CLASSES

January 30	Registration Assignment	Log into MyCWU to view enrollment appointment for web registration
January 30	Schedule Goes Live	View in MyCWU
January 30	Advising Begins	SPRING advising
Feb. 13-March 10	Registration	For continuing students (*During the assigned enrollment appointment)*
March 14	Leave of Absence	Students not attending SPRING quarter must submit request
March 20	OPEN ENROLLMENT	Students may add/drop classes until change of schedule period ends.
March 28	**CLASSES BEGIN**	**First day of classes for SPRING**
April 3	Change of Schedule Period Ends	Add/Drop classes-*Drops completed prior to this date or by the close of business on this date will not appear on transcripts or have tuition assessed.*
April 3	TUITION AND FEES DUE	Check with the Cashiers Office or view your statement online for amount due. Student has 100 percent tuition liability if classes are not dropped by this date.
April 3	Audit and Credit/No Credit	Deadline to declare audit and credit/no credit
April 3-7 until midnight	CWU Payment Plan - Open Enrollment Period	Students may split their quarter charges in three easy payments instead of one. A $50 enrollment fee applies.
April 4-10	$25 Late Registration Fee	Instructor signature required to enroll
April 11	$50 Fee - Unpaid Tuition and Fees	A $50 late fee will be assessed on unpaid tuition and course fee balances. Student has 100 percent tuition liability.
April 11-May 8	$50 Late Registration Fee	Instructor and Department Chair signatures required to enroll
April 25	$100 Fee -Unpaid Tuition and Fees	A $100 late fee will be assessed on unpaid tuition and course fee balances. Student has 100 percent tuition liability.
May 1-June 21	Registration for SUMMER	See SUMMER Calendar
May 8- June 23	Registration for FALL	See FALL 2017 Calendar
May 9-June 2	$75 Late Registration Fee	Instructor and Department Chair signatures required to enroll
May 17-18	Source Days	Instructional days - Research projects
May 29	Memorial Day	No classes/administrative offices closed
June 2	Course Challenge Form Deadline	Deadline to submit course challenge forms to Registrar Services
June 2	Classes End	Last day of class instruction
June 5	**Study Day**	**Study Day**
June 6-9	**FINAL EXAMS**	**See exam schedule**
June 9	End of Quarter	End of Quarter (last day of finals)
June 10	COMMENCEMENT	Commencement Ceremonies - Ellensburg
June 11	COMMENCEMENT	Commencement Ceremonies - Kent
June 13	Grades Due	10:00 p.m. deadline for instructors to submit grades via MyCWU
53	Instructional Days per Quarter	Includes final exams and study days

WITHDRAWAL DEADLINES

April 26	Deadline for 50 percent refund with complete withdrawal
May 12	Uncontested withdrawal period deadline
June 2	Hardship withdrawal petition deadline
June 2	Complete university withdrawal

GRADUATION DEADLINES

Jan. 13	Deadline to apply for baccalaureate degree for SPRING
Mar. 28-Apr. 3	Master's degree final folder check for SPRING needs to be requested during first week of classes
April 7	Deadline to apply for baccalaureate degree for SUMMER
June 2	Complete all master's degree requirements for SPRING graduation

SUMMER SESSION 2017 UNIVERSITY ACADEMIC CALENDAR

All deadlines are due by the close of business on that date. Information in this handbook may be subject to change.
If you have any questions, contact Registrar Services at 509-963-3001.

REGISTRATION AND CLASSES

March 27	Schedule Goes Live	View in MyCWU
March 27	Advising Begins	SUMMER advising
May 1-June 21	Registration	Summer Session
June 19	**CLASSES BEGIN**	**Classes begin for six-week and full session**
June 21	Change of Schedule Period Ends	Add/Drop classes-*Drops completed prior to this date or by the close of business on this date will not appear on transcripts or have tuition assessed.*
June 21	TUITION AND FEES DUE	Check with the Cashiers Office or view your statement online for amount due. Student has 100 percent tuition liability if classes are not dropped by this date.
June 26-30	$25 Late Registration Fee	Instructor signature required to enroll
July 1-31	$50 Late Registration Fee	Instructor and Department Chair signatures required to enroll
July 3	$50 Fee - Unpaid Tuition and Fees	$50 fee will be assessed on unpaid tuition and course fee balances. Student has 100 percent tuition liability.
July 4	Independence Day holiday	No classes/administrative offices closed
July 17	$100 Fee -Unpaid Tuition and Fees	$100 fee assessed on unpaid tuition and course fee balances. Student has 100 percent tuition liability.
July 28	**Six-week Session Classes End**	Last day of class instruction for six-week session
August 1	Grades Due	10:00 p.m. deadline for instructors to submit grades via MyCWU
August 18	**Full Session Classes End**	Last day of class instruction for full session
August 22	Grades Due	10:00 p.m. deadline for instructors to submit grades via MyCWU.

WITHDRAWAL DEADLINES

July 14	Deadline for 50 percent refund with complete withdrawal
July 14	Uncontested withdrawal period deadline
July 21	Hardship withdrawal petition deadline for six-week session
July 21	Complete university withdrawal for six-week session
Aug. 11	Hardship withdrawal petition deadline for full session
Aug. 11	Complete university withdrawal for full session

GRADUATION DEADLINES

April 7	Deadline to apply for baccalaureate degree for SUMMER
June 19-23	Master's degree final folder check for SUMMER needs to be requested during first week of classes
June 30	Deadline to apply for baccalaureate degree for FALL 2017
Aug. 4	Complete all master's degree requirements for SUMMER graduation

Central Washington University

EMS PARAMEDICINE PROGRAM

2016 – 2018

"We are what we repeatedly do;
excellence is then not an act, but a habit"
- Aristotle

Paramedic Student Manual

Table of Contents

Paramedic Manual

Introductory Content

EMS PARAMEDICINE PROGRAM

Welcome to the 2016-2018 EMS Paramedicine Class

On behalf of the administration, faculty, and staff of Central Washington University, welcome to CWU and the EMS Paramedicine Program. Your entry into this program is a testament to your motivation and talent as well as your professional and life credentials. Congratulations on being accepted into the Program and prepare yourself for a very challenging, but rewarding journey of becoming a paramedic. We at CWU pride ourselves in graduating some of the very best, most highly-skilled EMS providers and leaders throughout the nation – welcome to that elite group.

This journey is not easy. It will require from you considerable sacrifices, unwavering dedication and motivation, as well as a highly disciplined approach. The administration, faculty, and staff of the EMS Paramedicine Program are here to support you along the way, but only if you are willing to commit 100% of your time and effort toward the ultimate goals of the Program. ***It is not enough to simply "get by" in this Program.*** You must consistently make every effort to do your best in the most professional and courteous manner each and every day you are a student to truly reap the benefits of your entry into this prestigious program. The way in which this is best accomplished is outlined in this Paramedic Manual, as well as through the advisement of the EMS Program faculty – please heed their advice.

Although the Program has been carefully structured with appropriate goals and timelines set forth throughout, you must remain flexible during your participation in the Program. There will be times that you will be expected to modify your schedule, meet additional clinical or field internship requirements, satisfy additional didactic sessions and performance evaluations, and make additional sacrifices not described in this manual. The judgment and advisement of the Program Director and the senior faculty members, along with the endorsement of the Program Medical Director, will dictate what specific goals must be accomplished for each individual student.

This Program is designed to exceed the national, state, and regional expectations of paramedic education. It is the visionary belief of the administration, faculty, and staff of the Program that in order to "grow" the EMS profession and assure professional autonomy, we must breach established limitations. However, to do so requires considerable discipline, restraint, and humility of all who participates in this endeavor. Please never lose sight of the altruistic purpose of this profession and the unselfish character demanded of this career and the cohort members. Expect to learn and practice beyond that of others within the profession, but maintain the respect, courtesy, and humility deserving for your peers.

We expect that you will now embark on one of the most challenging endeavors of your lifetime, but one that will have a positive impact for you and so many other people. Best wishes to each and every one of you.

The faculty and staff of the EMS Paramedicine Program

EMS PARAMEDICINE PROGRAM

Mission and Vision for Central Washington University EMS Paramedicine Program

The EMS Paramedicine Program at Central Washington University is committed to excellent education and promotion of the EMS profession. To guide the Program in the pursuit of excellence, the Program adopts the following Mission and Vision Statements and the associated Core Values:

Mission Statement: The EMS Paramedicine Program's mission is to prepare students to possess the knowledge, skills, and attitudes to practice competently, under medical direction, the art and science of paramedicine with exceptional acumen and professional leadership.

Vision Statement: The EMS Paramedicine Program will be recognized regionally and nationally as one of the most exceptional academic programs, graduating paramedics that consistently exceed the expectations of the public and the discipline in all domains of practice while leading the profession into the future of healthcare and the promising, developing field of community paramedicine.

Core Values

As a Program, we are committed to:

- Graduating students that have, first and foremost, the best interest of the patients in mind
- A rigorous curriculum with contemporary cognitive content and extensive clinical education
- Encouraging students to achieve their greatest potential in life and in their profession
- Graduating students that provide safe, progressive, and competent care
- Graduating students who have exceptional decision-making, critical-thinking and leadership skills, even in adverse conditions
- Graduating students who are responsible and accountable to medical direction, the public, employers, and their peers
- Graduating students who are committed to life-long professional development, peer evaluation, and who participate in the development of other EMS providers
- Graduating students who are involved in public education, health promotion, and who participate in injury and illness prevention programs

Goals

The primary goal of the EMS Paramedicine Program is:

To prepare competent entry-level paramedics in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains with or without exit points at the Advanced EMT and/or EMT and/or Emergency Medical Responder levels.

The secondary goals of the EMS Paramedicine Program are:

To prepare highly-skilled practitioners of paramedicine in contemporary and evidence-based cognitive knowledge, progressive and comprehensive clinical practices, exceptional professional behaviors of prehospital care, and to engender leadership qualities through simulation and scenario-based education.

To advance the profession of paramedicine through an expanded scope of didactic education in areas of research, pathophysiology, contemporary topics of emergency medicine, advanced clinical skills, health policy, and community paramedicine/mobile integrated healthcare.

Skill Development and Progress Summary

This is a guideline to describe the progressive areas of knowledge the paramedic students at CWU will attain on a quarter by quarter basis. This is useful to facilitate the integration of knowledge from the classroom into the experience in the clinical areas. The students will also provide a skills attainment checklist that certifies what skills they are permitted to perform in the clinical settings.

FIRST QUARTER - SEPTEMBER THROUGH DECEMBER

Instructional Topics:

- Introductory Topics in Paramedic training: Medical Terminology, EMS Systems, Well-being of the paramedic, roles and responsibilities, ethics, life-span development, therapeutic communications, and medical-legal aspects of EMS
- Patient Assessment: History taking and patient interviewing, chief complaint determination, vital signs, Review of Systems, advanced physical examination techniques, SOAP documentation, medical documentation, and clinical decision-making
- Public health in EMS
- Airway Management and ventilation: Bag-Valve-Mask, oropharyngeal airways, nasopharyngeal airways, oral suctioning, endotracheal intubation & suctioning, dual-lumen airways (LMA, King LT, Combitube), nasotracheal intubation & suctioning, etc.
- Parenteral and non-parenteral medication routes; medication administration and dosing
- Cardiology: Dysrhythmia interpretation, essentials of myocardial disease
- Pharmacology: pharmacodynamics, pharmacokinetics, drug profiles, administration techniques, dosing and medical mathematics, and therapeutic decision-making
- Elements of adult education and principles of adult learning in the EMS profession
- Concepts of team membership, team leadership, formative scenario development, summative scenario development, appreciative inquiry, principles of crew resource management, closed-loop communication, EMS culture of safety, and TeamSTEPPS practices and principles

Skills:

- Physical examination skills and techniques; interviewing skills, and assessment equipment skills
- Cardiopulmonary Resuscitation
- Drug Dosage Calculation
- Charting and Documentation
- Sterile Technique
- Sterile Dressing Applications and Wound Cleansing (Review)
- Intramuscular, subcutaneous, intradermal, intraosseous, and other routes of medication administration
- Intravenous Catheterization
- Urinary Catheterization
- Phlebotomy
- Direct Laryngoscopy and Endotracheal Intubations
- Rapid Sequence Intubation (medication administration and procedure)
- Medication Administration
- Nasogastric Tube Insertion
- Basic principles of ultrasonography in the emergency setting
- All EMT-B Appendix H skills checklists and assist teaching practical skills in an EMT-B course

SECOND QUARTER - JANUARY THROUGH MARCH

Instructional Topics:

- Medical Emergencies: Pulmonary, Neurology, Endocrinology, Allergies and Anaphylaxis, Gastrointestinal, Urology and Nephrology, Toxicology and Substance Abuse, Hematology, Environmental, Infectious, Psychiatric, Behavioral, Obstetrical and Gynecological topics
- 12-Lead Electrocardiography and Management of Cardiovascular Emergencies
- Trauma Emergencies: Trauma and trauma system, blunt and penetrating trauma, kinematics of trauma, neurologic trauma, hemorrhage and shock, soft tissue and burns, musculoskeletal, head, facial and neck trauma, spinal, thoracic, abdominal, and extremity trauma
- Basic Life Support Obstetrics (BLSO) course content and certification
- Concepts of team membership, team leadership, formative scenario development, summative scenario development, appreciative inquiry, principles of crew resource management, closed-loop communication, EMS culture of safety, and TeamSTEPPS practices and principles

Skills:

- All Skills Previously Listed
- Pericardiocentesis
- Positive Pressure Ventilation; autovent; CPAP, BiPAP, and Peak Flow
- Needle Thoracentesis
- Defibrillation, Synchronized Cardioversion and Transcutaneous Pacing
- McRoberts, Woods Screw, and Leopald's Maneuvers
- Bimanual uterine massage and Doppler fetal heart tone monitor application
- Continuing Intubations
- Continuing Intravenous Catheter Insertions
- Continuing IM and SQ Injections
- Continuing Medication Administration
- Continuing Physical Assessments skills (Lung Sounds & Heart Sounds)
- Continuing refinement of physical examination and history-taking skills
- Cardiac Resuscitation, critical thinking, problem-solving, and decision-making skills
- 12-lead electrocardiography interpretation skills
- Development of Team Leadership skills

THIRD QUARTER - APRIL THROUGH JUNE

Instructional Topics:

- Neonatology
- Pediatrics
- Geriatric Emergencies

- Abuse and Assault
- The Challenged Patient
- Child/Adult Abuse
- Communicable Diseases
- Patients with Special Considerations and Needs
- Acute intervention for the Chronic-Care Patient
- Ambulance Operations
- Rescue Operations
- Medical Incident Management
- Hazardous Materials Awareness
- Responding to Terrorist Attacks
- Rural EMS
- Research in EMS
- Concepts of team membership, team leadership, formative scenario development, summative scenario development, appreciative inquiry, principles of crew resource management, closed-loop communication, EMS culture of safety, and TeamSTEPPS practices and principles

Skills:

- All Skills Previously Listed
- Pediatric Patient Assessment
- Assessment-based Management skills
- Administration of Pediatric Medications under Supervision.
- Team Leaders in Medical, Cardiac, Trauma
- Advance Airway Skills Training: (Lab only) needle and surgical cricothyrotomy, lighted stylet, and digital
- Central Venous Catheter Placement
- Umbilical Vein Cannulation

FOURTH QUARTER - JUNE THROUGH AUGUST

Health Topics:

- Clinical Decision Making
- Progressive Integration of Clinical Findings with Knowledge of Pathophysiology to Arrive at Differential and Provisional Diagnoses
- Team Leadership Development

Skills:

- All Skills Previously Listed
- Integration of cognitive, psychomotor, and affective domain skills
- Team Leadership Development
- Independent Practice of Paramedicine

CLINICAL AND FIELD SITES

WITH CLINICAL UNITS

Clinical Sites:

- Providence Regional Medical Center (Everett): OB
- Kittitas Valley Community Hospital: ED, ICU, OB, Airway Management (OR)
- Yakima Valley Memorial Hospital: ED, ICU, OB, Respiratory Therapy, Psychiatric
- Yakima Regional Medical Center: ED, ICU, Airway Management (OR)
- Mary Bridge Children's Hospital: Pediatric ED
- Valley Medical Center: ED
- Confluence Health (formerly Central Washington Hospital): Airway Management (OR)
- Evergreen Medical Center: OB

Field Experience Sites:

- Region 1
  - Walla Walla Fire Department (1)
  - Kennewick Fire Department (1)
  - Sunnyside Fire Department (1)
- Region 2
  - Advanced Life Systems Ambulance (Yakima) (3)
  - American Medical Response (Yakima) (2)
- Region 3
  - Kittitas Valley Fire & Rescue (1)
  - Medic 1/Kittitas County Hospital District #2 (1)
  - Grant County/AMR (1)
  - Spokane County/AMR (1)
- Region 4
  - Lifeline Ambulance (Wenatchee) (2)
  - Ballard Ambulance (Wenatchee) (2)
- Region 5
  - Monroe Fire Department(1)
  - Arlington Fire Department (1)
  - Lake Stevens Fire Department (1)
  - Goldbar Fire Department (1)
- Region 6
  - Snohomish County Fire District #1 (1)
  - West Pierce Fire Department (2)
  - City of Tumwater Fire Department (1)
  - Clallam County/Fire District #3 (1)

2016 – 2018 PARAMEDIC (TENTATIVE) CLASS SCHEDULE

First Year

Summer Quarter				
Time	**Days**	**Course**	**Course Title**	**Credits**
0900-1100	F	EMS 440	Medical Mathematics and Medical Terminology	2
			Total:	**2**
Fall Quarter				
Time	**Days**	**Course**	**Course Title**	**Credits**
0800 – 1030	M, W	EMS 335	Paramedicine – I	4
1100 – 1300	M,W	EMS 443	Myocardial Disease & Electrocardiography	4
1410 – 1710	M	EMS 335LAB	Advanced Clinical Practice-I (Part A)	2
1410 – 1710	W	EMS 335LAB	Advanced Clinical Practice-I (Part B)	
0800 – 1000	T, Th	EMS 441	General Pharmacology for Paramedics	3
1100-1400	T, Th	EMS 350	Paramedicine Instructional Methodologies	2
1300 –1500	F	EMS 493 Prep	Clinical Recitation Session	0
			Total:	**15**
Winter Quarter				
Time	**Days**	**Course**	**Course Title**	**Credits**
0800-0930	W, Th	EMS 451	Advanced Trauma Care	3
0930-1130	W, Th	EMS 336	Paramedicine – II	4
1230-1430	W, Th	EMS 444	12-Lead Electrocardiography	4
1430-1730	W	EMS 336LAB	Advanced Clinical Practice – II (Part A)	2
1430-1730	Th	EMS 336LAB	Advanced Clinical Practice – II (Part B)	
FISDAP	Intern.	EMS 493.A	Paramedicine Internship – I	3
			Total:	**16**
Spring Quarter				
Time	**Days**	**Course**	**Course Title**	**Credits**
0830-1000	W, Th	EMS 459	Emergencies in Pediatric/Geriatric Care	3
1000-1130	W, Th	EMS 337	Paramedicine – III	3
1300-1600	W	EMS 337LAB	Advanced Clinical Practice – III (Part A)	2
1300-1600	Th	EMS 337LAB	Advanced Clinical Practice – III (Part B)	
FISDAP	Intern.	EMS 493.B	Paramedicine Internship – II	4
			Total:	**12**
Summer Quarter				
Time	**Days**	**Course**	**Course Title**	**Credits**
FISDAP	Intern.	EMS 493.C	Paramedicine Internship – III	5
			Total:	**5**
			Year Total:	**50**

N.B.: In each quarter, each student must take both parts of the Lab course.

Second Year

(Distance Education)

Fall Quarter		
Course	**Course Title**	**Credits**
EMS 430	Problem-Based Learning – I	4
EMS 455	Introduction to Pathophysiology	3
EMS 460	Research in EMS – I	3
EMS 480	Financial Analysis of EMS Systems	3
	Total:	**13**
Winter Quarter		
Course	**Course Title**	**Credits**
EMS 431	Problem-based Learning – II	4
EMS 461	Research in EMS – II	3
EMS 470	Current Topics in Emergency Medicine	3
EMS 475	EMS Response to Terrorism	3
EMS 481	Quality Improvement & Administration in EMS	3
	Total:	**16**
Spring Quarter		
Course	**Course Title**	**Credits**
EMS 465	Educational Methodologies in EMS	3
EMS 482	System Analysis of EMS	4
EMS 485	Strategic Planning for EMS	3
EMS 488	Health Policy in EMS	3
EMS 489	Leadership in EMS	3
	Total:	**16**
	Year Total:	**45**
	2-Year Total:	**95**
	Credits in major with entry required courses:	**105**

Note: With EXSc 350 and EXSc 351, the total credits in the Paramedicine Major is: 105

Paramedic Program 2016 – 2017 Academic Year

Please note: Information Below is Subject to Change Without Advanced Notice

Required Texts			ISBN
Summer Quarter			
	EMS 440	Allan and Lockyer, *Essentials of Medical Language,* 2nd Edition, McGraw-Hill Publisher, 2012.	**ISBN-13:** 978-0073374611
	EMS 440	Booth and Whaley, *Math and Dosage Calculations for Health Care,* 5th Edition, McGraw-Hill Publisher, 2016.	**ISBN-13:** 978-0073513805
Fall Quarter			
	EMS 335	AAOS, Nancy Caroline's, *Emergency Care in the Streets,* 7th Edition, JBLearning Publishing, 2013. **2 Volume Text, with Workbook and Navigate 2 Premier access**	**ISBN- 13:** 978-1449645861 **ISBN- 13:** 978-1449609245
	EMS 441	Lehne, Richard *Pharmacology for Nursing Care,* Elsevier Publisher, **9th Edition (2016)**.	**ISBN-13**:978-0323321907
	EMS 335	Bickley, *Bates' Guide to Physical Examination and History Taking,* 11th Edition, Lippincott Williams & Wilkins Publisher, 2012.	**ISBN-13:** 978-1609137625
	EMS 443	Garcia, Tomas *Arrhythmia Recognition: The Art of Interpretation,* Jones and Bartlett Pub., 2004.	**ISBN-13:** 978-0763722463
Winter Quarter			
	EMS 444	Garcia, *12-Lead ECG: The Art of Interpretation,* 2nd Edition, Jones & Bartlett Publisher, 2015.	**ISBN-13:** 978-0763773519
	EMS 451	NAEMT, *PHTLS: Prehospital Trauma Life Support,* 8th Edition with Navigate 2nd Advantage Access, Jones & Bartlett Publisher, 2010.	**ISBN-13:** 978-1284041736
	EMS 336	American Heart Association, *2010 ACLS Provider Manual,* **Newest Edition**, Item #90-1014	
	EMS 336	American Heart Association, *2010 Handbook of Emergency Cardiovascular Care,* **Newest Edition**, Item #90-1000	
Spring Quarter			
	EMS 459	Ralston, Hazinski, et.al., *PALS Provider Manual* and *PALS Course Guide,* American Heart Association, **2015 edition**, Item #80-1434	**ISBN-13:** 978-0874935288
	EMS 459	American Academy of Pediatrics, *PEPP: Pediatric Education for Prehospital Professionals (AAP),* Jones and Bartlett Publisher, **2014**.	**ISBN-13:** 978-1449670436
	EMS 459	Kattwinkel, *Neonatal Resuscitation,* 7th Edition, American Academy of Pediatrics, Gary M. Weiner, **2016**.	**ISBN-13:** 978-1610020244

Recommended Texts:

EMS 335	*Mosby's Dictionary of Medicine, Nursing, and Health Professions,* **Newest Edition**, Mosby/Elsevier.	**ISBN-13:** 978-0323049375
EMS 335	Skidmore-Roth, *Mosby's 2015 Nursing Drug Reference,* 28th Edition, Mosby-JEMS Elsevier Publisher, 2015	**ISBN-13:** 978-0323278010
EMS 335	Bickley, *Bates' Guide to Physical Examination and History Taking,* Handbook, 7th Edition, 2013.	**ISBN-13:** 978-1451173222

Clinical Guidelines - General

SCHEDULING CLINICAL AND FIELD EXPERIENCE TIME

All scheduling of Clinical (hospital) and Field (ambulance) shifts will be done through FISDAP. FISDAP is a web-based data collection system used by many paramedic schools (the design of FISDAP parallels accreditation requirements and standards) across the US and Canada to track EMS students' progress in their clinical and field activities. FISDAP measures experiential learning, sparks critical thinking, organizes shift schedules, and collects data used in multi-institutional educational research. Various reports and graphs are available to display the collected data including a report that tracks the National EMS Education goals.

The FISDAP process is simple. Every time a paramedic student makes contact with a new patient, that student uses a computer or digital tablet to enter information about the nature of the experience that just occurred. It is the EMS Paramedicine Program's policy that this activity occur after each patient contact. FISDAP tracks the patient's chief problem and demographic information, and the scope and nature of the skills performed by the student, preceptor, and ambulance crew/hospital staff on the particular encounter. FISDAP also tracks learning and skills development in the laboratory setting.

FISDAP History:
FISDAP was the brainchild of a couple of Emergency Health Services instructors at Inver Hills Community College's (IHCC) "EHS Degree Program." Frustrated by the unrealistic hour-based requirements of previous paramedic field internship programs, the IHCC faculty and medical director began seeking objective ways to measure the experiential learning that occurs during ambulance shift ride-alongs. FISDAP is the process by which IHCC has attempted to begin tracking that learning.

The project began in September of 1996 in San Antonio, at the National Association of EMS Educator's (NAEMSE) first annual conference. IHCC staff attending the conference discussed the problems with collecting accurate data on field internships with other educators. In particular Century College and Northwest Technical College faculty, as well as Youngstown State University faculty were interested in participating and helped create the first data sets. The first data collection began in September of 1996 by using a Microsoft Access database over a Novell network within the IHCC campus. Subsequently, the IHCC staff had an interest in using the project to collect data from multiple institutions. We wanted to increase the scope of the project to increase its applicability and significance. We also wanted to encourage multi-institutional research by EMS education agencies. This type of research is unfortunately scarce in our profession.

Thanks to a grant from the Minnesota State College and University System (MnSCU) in 1997, IHCC was able to get funding to expand FISDAP via the Internet. IHCC teamed up with the founders of Headwaters Software to develop the web version of FISDAP. Now that the MnSCU grant period has ended FISDAP has become a fee-for-service system. Student accounts are charged a one-time account fee to cover maintenance and improvements to the system.

Buying Your FISDAP Accounts Online:
You will buy your account directly from the FISDSAP web site (www.fisdap.net) with a credit card (one time cost of $126.00). You must purchase both the *FISDAP Skills Tracker* and the *FISDAP Scheduler* for paramedic. You must also purchase the *FISDAP Comprehensive Paramedic Exam Account*. Registration will need to be completed within the first 2 weeks of school. You will need the following number to register: Program Order ID **CWU0082-RHSY.** At the website, click on ***I am a student*.** Note: You MUST have a working CWU email address before purchasing your FISDAP account. Otherwise, you will not receive your account serial number and will be unable to setup your account. FISDAP also offers "Paramedic Study Tools" ($36.75) as an option for you to consider – this is not required, but recommended.

Breakdown of costs:

FISDAP Skills Tracker		$57.75
FISDAP Scheduler		$42.00
FISDAP Paramedic Test Account		$26.25
	FISDAP Skills Tracker, Scheduler, and Test Account Combined	**$126.00**

Important FISDAP Information:

The EMS Paramedicine Program has transitioned to digital recordkeeping. Entry of information via the electronic, web-based platform (FISDAP) for all clinical activity is the primary means of data collection in the Program. For select circumstances, an additional hardcopy recording process will be maintained as directed by the Program. This will be accomplished with skill performance log forms that will be made available electronically for downloading and printing. These hardcopy documents will serve as a secondary means of skill performance verification. They will be made available electronically on the Program website and will be downloaded and printed by the student as needed. It is the responsibility of each student to download these forms, print them and have them available to the preceptor prior to the time of the skill activity. These manually-recorded, hardcopy skill log forms serve two purposes: (1) to provide a means of data reference and (2) to serve as a back-up or verification of activity data. Therefore, it is imperative that both sources of data reconcile one another. That means that what is recorded in FISDAP must be exactly the same as what is recorded on your hardcopy forms. Any discrepancies between the two may result in neither data source counting toward your goals and rendering the records in FISDAP as invalid. All hardcopy forms will be maintained by the student until a periodic review is conducted by the Clinical Coordinator. Additionally, students are required to scan all supplemental documentation and attach them electronically to FISDAP.

The Program uses the hardcopy data to assure compliance and veracity of the data entered into FISDAP. The data entered into FISDAP are what is used to determine goal attainment and accreditation compliance. Be sure it is accurate and complete. The Clinical Coordinator will conduct initial and periodic FISDAP tutorial and remedial sessions throughout the academic year – be sure you understand the process and the expectations. Understanding of the clinical recording process through FISDAP is critical and may be verified through assessments. A full inventory of your clinical activity will be conducted with detailed scrutiny at the conclusion of the final clinical course.

Data Entry Requirements:

1. All patient contacts (PCRs), clinical and field skill performances and experiences are required to be entered into FISDAP at the completion of each clinical activity and consequently available for review by the clinical preceptors. Periodic reviews will be conducted by the Clinical Coordinator and failure to comply with timely data entry may result in the suspension of clinical activities. FISDAP will be accessible to students for additional thirty hours at the completion of the clinical activities to upload files (skill sheets, ECG's, and additional documentation). All preceptor signatures must be signed by the completion of the clinical activity and include electronic (FISDAP) and hardcopy skill forms.

2. All paper copies of patient contacts, clinical and field skill sheets, and clinical experience logs will be maintained by the student and made available to the Clinical Coordinator upon request. You will be responsible for the safe maintenance of the hardcopy records and assuring delivery of those forms to the Clinical Coordinator. It is prudent that all students maintain copies of all submitted documents.

3. As detailed in the Fall Orientation, all components of the forms and FISDAP data entry fields must be completed in their entirety prior to submission. This includes all signatures (including the student's) and all pertinent information.

4. During your FISDAP orientation / training the list of benchmarks for each skill / experience will be reviewed. We will be monitoring your progression using these benchmarks. Failure to meet established benchmarks may result in your schedule being adjusted (including site designations) by the faculty at their discretion to keep you on pace to complete the course on time. It may also result in an unsatisfactory grade in the clinical course (EMS 493).

Hospital and Field Documentation Form Guidelines

- Be sure to list on every log sheet the name of the hospital or ambulance agency, the date, and shift.

- Students are responsible for having all necessary forms in their possession at each clinical shift (hospital or field) for completion, recording of information, and signatures. Loose forms should be kept in the Program-approved metal clipboards and accessible as necessary during shifts.

- You must have in your possession, and present to the clinical preceptor, your personalized Student ALS Skills Approval Form (see page 19). This form is used to indicate to the preceptor what skills you are approved to perform in the clinical setting.

- You must enter the data into the electronic tracking system within 30 hours of the conclusion of the shift and note the run number and report number on all forms. If you are not staying current with this expectation, the data will ***not*** count towards your totals and it will affect your grade for clinical/field experience (EMS 493).

- Every time you complete ambulance or hospital experience time ***you must print your preceptor's first and last name on the form, and have your preceptor sign*** the clinical sheets at the bottom indicating that you have successfully completed the time or procedure involved and the date this was completed. You must complete an online PCR for all patient contacts throughout the time you are riding.

- You must complete the *Preceptor Evaluation Form* for **every** clinical shift, regardless of patient contacts. This applies to hospital as well as field clinical shifts.

- You are ***not*** permitted to seek or receive credit for paramedic skills while under the employment of an EMS agency, whether the agency is affiliated or not. Under such conditions, you are ***not*** a student and you do not have the protected rights of a student. **There are no exceptions to this rule.**

- **Preceptors are not to sign a blank evaluation or clinical sheet**. You must have the log sheet filled out before the supervisor's signature is applied. Any unsigned sheets will NOT be counted toward the requirements.

- You must submit your clinical and field experience sheets as required. The Clinical Coordinator may request a meeting for any discrepancies between written and electronic records, the use of non-approved field preceptors, issues with PCR documentation, incorrect data entry, or failure to meet clinical benchmarks. The meeting with the Clinical Coordinator must occur within a 7-day time period. Your notebook can be requested for review at any time.

- In the field setting, any time a patient is connected to an ECG monitor while under your care, a copy of that ECG must be attached to the PCR and ECG interpretation information documented.

- All field internship shifts must be with EMS agencies contracted by the Central Washington University EMS Paramedicine Program, otherwise legal consequences may ensue.

- Each student will be provided with a current list of approved field preceptors that will be updated

periodically and available upon request electronically. ONLY the preceptors listed on the document may be used for any form of clinical supervision. Should a student utilize a clinical preceptor that is not on the approved list, the activity will not count and the student shall be required to attend a counsel session with the Clinical Coordinator and Program Director.

- Any approved clinical skill opportunities that present themselves, and are within your current scope of practice, are not to be deferred or declined – this is an educational opportunity, not a work demand subject to evasion or circumvention.

- If a student accepts for documentation a clinical skill performance that he or she did not actually perform (falsification of documentation), the student will be subject to immediate dismissal from the Program and the incident will be referred to the Washington State Office of EMS and Trauma Care as well as the Office of the Attorney General for investigation and disposition. In other words, do not document ***any*** skill as one that you performed if, in fact, you did not perform it.

- Failure to document any missed attempts or unsuccessful attempts at ***any*** clinical skill that you performed will also result in immediate dismissal from the Program and referral to the Washington State Office of EMS and Trauma Care as well as the Office of the Attorney General for investigation and disposition

Central Washington University – EMS Program
Student ALS Skills Approval Form

____Student's Name___ has successfully completed the instructional requirements for the following skills and is approved to perform those skills in the clinical/field setting under preceptor supervision. Each skill approved for clinical or field performances by the student is permitted only at the discretion of the preceptor for each individual clinical situation. To be approved to perform the skill listed below, the Program instructors' signature must appear in the box.

Instructor Initials	Effective Date	Skill
		Patient Assessment – Adult
		Patient Assessment - Pediatric
		Advanced Airway Management (endotracheal intubation under direct laryngoscopy; Supreme LMA; King LT Airway and Combitube)*
		Advanced Airway Management (digital; lighted stylet, nasotracheal; in-line stabilization; endotracheal introducer)
		Rapid Sequence Intubation Medication Administration
		Advanced Airway Management – Pediatric
		Positive Pressure Ventilation with Transport Ventilator
		CPAP and BiPAP Devices; Peak Flow Assessment
		Needle Thoracentesis (anterior approach only)
		Surgical Cricothyrotomy/Needle Jet Insufflation
		12-lead Acquisition
		Defibrillation; Cardioversion; and Transcutaneous Pacing
		Intravenous Therapy (venipuncture; cannulation; blood sampling; piggy-back set-up; and phlebotomy)
		Medication Administration (oral, nasal, otic, ophthalmic, buccal, nebulization, inhalation, endotracheal, sublingual, transdermal, subcutaneous, intramuscular, intravenous bolus, and infusion)
		Intraosseous Access
		Central Line Placement
		Pericardiocentesis
		Nasogastric/orogastric tube insertion
		Obstetrics – McRobert's, Leopold's and Wood's Maneuvers; Bimanual Uterine Massage; Doppler Heart Tone Monitoring
		Umbilical Vein Cannulation (UVC)

- *Does not require previous OR experience

Clinical Guidelines - Hospital

Clinical-Hospital Experience Scheduling and Performance Guidelines

1. You may not sign up for more than 8 hours of clinical-hospital experience at a time. It is the Program policy that clinical hospital shifts ***not*** exceed 8 hours per shift. The ***only*** exception to this 8-hour rule for hospital shifts is for obstetrics. This does not mean you cannot schedule several consecutive days at a time. You may schedule 8 hours one day, and 8 hours the next day when you are designing your schedule. However, it *does* mean that your total length of time in terms of consecutive hours at one type of experience should not be longer than 8 hours. You may not spend 8 hours in one clinical area and then spend another 8 hours in a back-to-back shift in different clinical department (i.e., 8 hours ED then 8 hours CCU). You must have a minimum of 8 hours between clinical shifts. **There are further restrictions related to combined field shifts and clinical shits (see #3 and #4 under, *"Field [Ambulance] Experience Scheduling Guidelines." on page 26*).**

2. **Completion of O.R. (intubation) requirements:** Intubation skill competency requirements are intended to be met in EMS 493A and EMS 493B. Once the required number of intubations are met (see Program Clinical Minimum Requirements) during these two clinical courses, continued scheduling in the O.R. for intubation skill development is no longer necessary. If the required number of intubations is not satisfied by the conclusion EMS 493B, the student shall receive an "Incomplete-In Progress" (IP) grade for EMS 493B. This is the only permissible reason for a student to earn an IP grade in EMS 493B. The student is then expected to complete the requirements of EMS 493B in the summer. Following successful completion of the intubation requirements for EMS 493B, the student may then proceed with fulfilling Team Lead requirements during the summer for EMS 493C. For more information, see the sections, *Skill Clarification* on page 23 and *Program Completion* guidelines beginning on page 51.

3. If you are in the hospital for assigned time in one area, you cannot transfer to another area for clinical experience without the expressed permission from the Clinical Coordinator. Due to insurance requirements, all scheduling will be done as set forth in this manual and as instructed by the Clinical Coordinator. You must be scheduled for the clinical area that you are in and you may not leave early without the Clinical Coordinator's permission.

4. If you are scheduled for a particular clinical unit (e.g., ED, OR, ICU, OB, etc.), you should not leave that unit to go to another clinical unit (e.g., radiology, hematology, etc.) even temporarily, unless accompanied by a clinical preceptor or his/her designee. You are a student, not an employed care-giver for the healthcare institution and must be supervised at all times.

5. Lunch breaks during clinical rotations should be limited to no more than 30 minutes and must be approved by the clinical preceptor assigned to your clinical activity.

6. ***All*** clinical interventions observed or performed ***must*** be fully documented ***without exception.***

7. Clinical Preceptor Evaluation Forms must be completed for each clinical shift regardless of number of patient contacts and a *Clinical Site Evaluation Form* must be completed for each and every hospital clinical shift.

8. Students cannot negotiate any opportunities for additional clinical activity with any clinical site outside of the guidelines of the Program.

9. See *Clinical Attendance and Tardiness Policy* for information regarding attendance guidelines.

Skill Clarification

- The clinical terminal objective for Advanced Airway is 12 live intubations (depending upon success rates in consistent, sequential intubations).
- Post-mortem intubations are acceptable forms of education ***if under the direction of clinical preceptors and in accordance with accepted bioethical principles and patient privacy rights.*** They ***may*** contribute toward the count of "live" intubations if performed in the E.D. and ***only*** to a maximum of 2 intubations. ***Post-mortem intubations in the field are prohibited.***
- Attempts at intubation are defined by performing direct laryngoscopy with the intent of passing the endotracheal tube – successful or otherwise. Performing direct laryngoscopy alone without the intention of passing an endotracheal tube (e.g., for foreign body removal) does not count as an attempt, but should be documented as direct laryngoscopy. Blind intubation attempts (nasotracheal intubation, digital intubation, lighted-stylet intubation, etc.) can be considered intubation attempts.
- Successful intubations must be recorded for separate patients – no single patient can yield two or more intubations unless the patient was intentionally extubated only to require subsequent intubation due to unanticipated status deterioration.
- Operating Room shifts are for airway management training. Since you will be accompanying the anesthesiologist or nurse anesthetist for the majority of the surgical cases to learn airway management skills on the paralyzed unconscious patient, this is the emphasis for your role in the O.R. It is not acceptable to participate in any other surgical activity, even if requested to do so. However, you will be permitted to observe surgical procedures if it does not interfere with your airway management training.
- If a patient is being managed in the prehospital environment (field) by a student and arrives at the E.D. where another student is on rotation, if the need to intubate that patient arises, it becomes the prerogative of the E.D. student to perform that skill and not the field student. Once the patient crosses the threshold of the E.D. entrance, it becomes the E.D. student's option to acquire skills with that patient.
- If you have attained the required number of live intubations, and your performance rate is less than desirable, the Clinical Coordinator may schedule you for additional O.R. activity for the purposes of obtaining additional live intubations in an effort to improve performance and to offset skill deterioration. This is at the discretion of the Clinical Coordinator and the Medical Director and is not subject for negotiation.
- When documenting patient encounters (Clinical Experiences) you ***must*** document: (1) the age group of that patient (e.g., adult, geriatric, adolescent, etc.), (2) the nature of illness for that patient (e.g., medical, trauma, psychiatric, etc.), (3) all assessments and their findings, and (4) all interventions (e.g., ventilatory assistance, I.V., meds SQ, etc.) on the appropriate form ***without exception.***
- ***Any clinical skill opportunities that present themselves, and are within your current scope of practice, are not to be deferred or declined – this is an educational opportunity, not a work demand that is subject to evasion or circumvention.***

Clinical Guidelines - Field

Field (Ambulance) Experience Scheduling Guidelines

1. Students **must** ride a minimum of 48 hours with **one** of the field site agencies in each of the following six regions in the winter quarter.
   - Region 1: Walla Walla Fire Department, Kennewick Fire Department, and Sunnyside Fire Department.
   - Region 2: Advanced Life Systems (ALS), American Medical Response (Yakima AMR).
   - Region 3: Kittitas Valley Fire and Rescue, Medic 1/KCHD 2, Grant County AMR, Spokane AMR.
   - Region 4: Lifeline Ambulance (Wenatchee, Omak), Ballard Ambulance (Wenatchee).
   - Region 5: Monroe Fire Department, Arlington Fire Department, Lake Stevens Fire Department, and Goldbar Fire Department.
   - Region 6: Snohomish County Fire District #1, West Pierce Fire Department, Tumwater Fire Department, and Clallam County Fire District 3.

2. During the spring quarter, students will be encouraged to ride at a limited number of field sites in preparation for agency selection for team leads in the summer. The rationale for this limitation is that during EMS 493C (Field Internship for Team Leads), students will be performing team leads and will be limited to evaluations by no more than two preceptors. It is important that students pre-select their preferred ride sites for EMS 493C. Team leads will be limited to availability of both agencies and preceptors. Sites and preceptors will be selected ***only* after successful completion** of all other clinical requirements (other than team leads). Therefore, the selection process for both site and preceptors will be based on the timely completion of clinical requirements.

3. You may not sign up for more than 48 hours of field experience at a time. You may complete 48 hours of field experience, then have one day off (24 hours), and then complete another 48 hours of field experience. However, no one will be allowed to ride on an ambulance for more than 48 hours consecutively without at least 24 hours off the ambulance before the next field experience. **No exceptions.**

4. For safety reasons, you are not permitted to schedule a hospital rotation immediately before or following a 48 hour field rotation without at least 8 hours off between rotations.

5. Should any significant event occur (e.g., absence from a scheduled shift, significant body substance exposure, patient or preceptor confrontation, or similar events) during any clinical shift (hospital or field), you ***must*** report the incident to the Clinical Coordinator immediately and complete an appropriate report form, and submit that form by the next class session.

6. If you are not wearing a Program-approved uniform jacket during any field activity involving a hazardous or potentially hazardous environment, you ***must*** wear the Program-provided reflective, safety vest. ***There are no exceptions to this requirement***. Failure to wear the vest during any hazardous or potentially hazardous situation will result in disciplinary action.

7. During your final field internship shifts when you are conducting team leads, you will be assigned preceptors to supervise your team leads in a consecutive and continuous manner. This will enable a more thorough assessment and leadership development opportunity.

Participation Guidelines

GENERAL PROGRAM GUIDELINES

1. **Attitude and behavior are critical in this program.** You will be dealing with many different people including not only your fellow students, but the Program Director, faculty, nurses, physicians, x-ray and lab technicians, and ambulance personnel, not to mention the most important of all - the patient. Your attitude and approach in dealing with these individuals are extremely important both during the time you are a student and also later in life once you complete this Program. Your attitude and behavior affects everyone with whom you come in contact. Please try to always be on your best behavior and never act arrogant or superior to those around you. In addition, do not display a confrontational or defiant attitude toward any clinical or field preceptors at any time. Remember: you are guests at the EMS agencies and hospital clinical units. Your demeanor has a direct influence on the quality of your clinical experience and the opportunities which may be made available to you – *and your fellow students!* You are expected to keep the best interests of the patient foremost in all that you do as a student. In this Program, your grade (and successful completion) is determined by a combination of your cognitive performances, psychomotor skill performances, and your affective (behavioral) performances.

2. Everyone has their own particular role in the delivery of healthcare. Although one job may be more difficult than another, it does not mean it is more important. It is the whole team working together that reaches the final goal. *Remember this, even when others don't!* Contemporary healthcare relies on a coordinated, integrated team approach. It is imperative that you are successful in your role as a participating team member. Paramedicine also demands a leadership role which will become the final focus in the first year of this Program.

3. **This Program requires an enormous amount of study time on your own.** Do not expect to come to class and learn what you need to know there. You ***must*** arrive to class prepared, well-rested, and with all assignments complete. The classroom is where the content and concepts are explained, refined, and consolidated. The amount of time allotted to classroom work is simply not enough to cover all the subject matter – you ***must*** do a great deal of studying outside of the classroom. Make sure you read all the assigned material before coming to class. There are no excuses for being unprepared – all content and assignments are prescribed in advance. As has been emphasized repeatedly, this is an academically rigorous program. You must commit all of your available time toward studying and preparation. It is prudent to take your textbooks and other study materials with you to clinical/field sites to maximize the opportunities to study during idle times.

4. In the clinical environment (hospital and field) you **must** carry with you at **all** times:

    a. the Paramedic Manual (digital or hardcopy)
    b. your personal digital electronic device (tablet)
    c. the ALS Skills Approval form (hardcopy only)
    d. the approved metal clipboard
    e. the assigned biohazard kit
    f. the assigned reflective safety vest
    g. your Program I.D.
    h. necessary clinical equipment (e.g., stethoscope, Snellen eye chart, etc.)
    i. all necessary paperwork to all field and clinical sites, and allow your preceptors to review the stated policies and procedures should the need arise.

5. Be sure to be prepared and on time for any in-class quizzes or scheduled exams. Academic honesty is of paramount importance and cheating in any form will result in immediate action. Electronic devices are not permitted during exams unless express permission is issued by the instructor. *All make-up exams must be completed within two consecutively scheduled class sessions and evidence for justifiable absence from exams may be required*. Make-up quizzes or exams may be of a completely different version than that administered in class.

6. If there is any unusual incident in the clinical setting, either at the hospital or at a field site, you must contact the Clinical Coordinator immediately. An unusual incident is any event that occurs outside of normal clinical or academic activities. ***Anything*** that you deem unusual should be reported as soon as possible – it doesn't matter how trivial it may appear initially. You must also obtain an incident report form and fill it out promptly – it must be submitted to the Program Office within 24 hours of the incident. We want to keep a record of any abnormal incidents which happen. Of course, each hospital in which you work also has an incident report form and it should be filled out if an incident, such as a medication error or a mistake of some type is made in the hospital. This includes significant exposures.

7. Continued participation in the Program requires all students to remain actively engaged in all aspects of the Program. If any student is absent for a prolonged period of time, that student is subject for review by the Program Director and possible dismissal from the Program. This includes injuries. If a student sustains an injury that prohibits an expected level of participation in didactic, psychomotor, or clinical activities or is limiting to the extent that a standard level of participation is not possible, that student will be reviewed for possible dismissal or deferment.

8. All sections of the curriculum in the first-year EMS Paramedicine Program must be successfully completed in the prescribed sequence of delivery. Failure to successfully complete any section requires either the section to be repeated at the next academic annual cycle or dismissal from the Program – whichever is deemed appropriate by the Program Director.

9. Students that are required to repeat a course or course section in a subsequent year must also complete all necessary clinical skills assessments and demonstrate proficiencies in requisite psychomotor skills just prior to continuing in the Program. These requirements will be detailed for each individual student on a case-by-case basis by a special committee comprised of the Program Director, Clinical Coordinator, faculty members, and Medical Director. Determined demonstrations of skill proficiencies by this committee are final and not subject to appeal or negotiation.

10. For any clinical or scheduling issues at clinical and field sites, you should first contact the Clinical Coordinator, Steve Chrisman. For all other issues, you should contact the Program Director, Dr. Keith Monosky. It is imperative that the Program faculty be apprised of any unusual or potentially troublesome circumstances as early as possible. It is in your best interest to alert the Clinical Coordinator or Program Director to any problems before anyone else does. The preferred method of communication between you and the Clinical Coordinator is via either texting or email. Reserve direct phone calls to the Clinical Coordinator for only truly urgent matters.

Contact information is as follows:

- Steve Chrisman - Clinical Coordinator: (509) 607-1082 or Steven.Chrisman@cwu.edu
- Jim Pierce: (509) 899-7077 or James.Pierce@cwu.edu
- Keith Monosky: (509) 963-1145 or Keith.Monosky@cwu.edu
- Program Office: (509) 963-1098 or EMS@cwu.edu

11. There will be times in which class schedules must be changed to accommodate guest lecturers, content expansion, or other didactic circumstances. There may also be circumstances that require longer class times than what was scheduled. **You must be flexible to the changing schedules of the program.** Your commitment during this academic year must be to the Program – any distractions for social or family matters (unless emergencies) should not interfere with the Program goals and timelines. Time schedules for the courses in the catalog may NOT be the final schedule and actual classroom time may exceed that posted in the catalog.

12. It is recommended that you **not** be employed during this first academic year. Experience has demonstrated that the time and attention demands of the paramedic education preclude the opportunity to be employed during that time. **The program must come first if you expect to complete this education successfully.**

13. Similarly, you should not participate in any organized sports or extra-curricular activities during the first year of the major – the demands of the Program are too great to accommodate other interests. Participating in high-risk activities could result in injuries or similar consequences that may preclude your continued participation in the Program.

14. Our training sites require you to have current medical and auto insurance. Each paramedic student will be required to carry health and auto insurance and provide documentation of such. Student medical malpractice insurance is required for participation in the Program and must be paid prior to the first day of clinical activity. Medical malpractice and health insurance acquisition and maintenance are the responsibility of the student and must be maintained during any and all clinical activity in the Program.

15. All health concerns, issues, and limitations must be disclosed at the time of the health assessment for entry into the Program.

16. You are prohibited to photograph, video-record or audio-record any patients or patient encounters at any clinical location at any time.

17. You are not to have any material of questionable nature (i.e., magazines, photos, and unauthorized reading material) at your clinical field training sites.

18. Consumption of alcoholic beverages or recreational substances prior to any scheduled didactic, clinical or field activity is prohibited. Impaired judgment or substandard performances due to alcohol or drugs, or any evidence of intoxication during any program-related activity, whether due to recreational or prescription substances, is strictly prohibited.

19. Pursuant to the guidelines within the Central Washington University Student Judicial Code (http://www.cwu.edu/~saffairs/StudentJudicial.pdf), possession of any weapons and / or illegal substances on campus, or at any of the clinical and / or field sites, is a direct violation of the Student Judicial Code and will be dealt with as outlined within.

ATTENDANCE, CONDUCT AND APPEARANCE

Attendance, conduct, and appearance are important student behavioral parameters of performance in the EMS Paramedicine Program. For this reason, they will be closely monitored and controlled in the clinical and didactic settings. The following policies outline the expectations of the students in the clinical and classroom settings separately. These guidelines are not inclusive of all behavior expectations and are subject to review, emphasis, and the discretion of the faculty and Program Director. Certain policy violations of attendance, conduct, and appearance are more egregious than others and will be dealt with accordingly. For example, if you are asked to leave a hospital or ambulance shift by hospital or ambulance personnel, the incident will be immediately investigated and, if significant, may result in you being dismissed from the Program. In the event such a circumstance should occur, be sure to notify the Clinical Coordinator or the Program Director immediately. It is under the discretion of the Program Director, based on the individual circumstances, to restrict your clinical or field experience for a period of time due to behavioral concerns.

Clinical Attendance and Tardiness Policy

Clinical Add/Drop and Shift Trade Policy -
Clinical shifts may be added, dropped, or traded without notifying the Clinical Coordinator, ambulance agency or hospital site ***only*** if they occur **at least** ten (10) days prior to the scheduled shift. Excessive drop requests may result in the suspension of self-scheduling privileges and possibly suspension of all clinical activities.

A shift that is dropped with less than a ten (10) day notice is deemed either an:

1) Excused absence (see page 32)
2) Unexcused absence (see page 32)

Clinical Absence Policy
An absent shift is regarded as those dropped or missed with less than a ten (10) day notice. In the event of an absent shift, the following ***must*** occur:

1. The Clinical Coordinator must be notified via text message or email as soon as possible.
2. The applicable hospital department or ambulance station must be contacted via phone to advise them of your absence. You ***must*** document the name of the person you contacted, along with the date and time. If you are unable to reach anyone via phone, you must document when a message was left with that department.
3. An *Absence Form* must be completed in its entirety and submitted to the EMS Office directly and time-stamped by the next regular day of class.

Even if the absence meets the criteria for an “excused absence,” failure to comply with the above requirements will result in the absence being declared an “unexcused absence.”

Excused Absence:

The determination of an excused absence is at the discretion of the Clinical Coordinator and must be the result of one of the following:

1. Sickness (you ***must*** either include a doctor's note when submitting your *Absent Shift Form* or obtain approval from a faculty member)
2. Death of a loved one or a legitimate family emergency with subsequent Clinical Coordinator approval.
3. Severe weather conditions - Students must make every effort to arrive at the shift safely. This should include: leaving to go to the shift the day before, leaving in ample time to compensate for traffic and weather, taking alternative routes, and similar efforts.
4. Benchmarks completed prior to expected completion date. If you were successful in completing the required benchmarks prior to fulfillment of scheduled shifts, you ***must*** notify the site of your expected absence. As an example: You have two OB shifts scheduled in the same week; at the first OB shift you completed your benchmark requirement for that shift, so you no longer need another OB shift. You must notify the OB department of your expected absence. If your next OB shifts falls in less than 10 days, and, if you complete the *Absence t Form,* report your expected absence to the Clinical Coordinator, and miss your second OB shift, this will be considered excused.

Unexcused Absences, Tardiness, and Misconduct:

Unexcused absences are those that do not meet the above criteria or those absences whereby the student failed to follow the "Clinical Attendance and Tardiness Policy." The following action plan applies to students who receive an unexcused absence, are tardy to a shift, or who committed alleged minor misconduct during clinical activity:

1. First Offense: The student will receive a verbal warning and must meet with the Clinical Coordinator.
2. Second Offense: The student will receive a written warning and must meet with the Clinical Coordinator.
3. Third Offense: The student will receive a written warning, will be suspended from all clinical shifts for (1) week, and will have to meet with both the Clinical Coordinator and Program Director.
4. Fourth Offense: The student will receive an incomplete/unsatisfactory for their clinical internship class at the discretion of the Clinical Coordinator and Program Director.

Failure to notify the Clinical Coordinator of an absent or tardy shift, or attempting to "hide" the absent or tardy shift, or falsifying documents to make it appear the shift was completed, or committing an egregious act of misconduct at a clinical site, are grounds for an unsuccessful or incomplete grade for the student's clinical internship class and ***immediate removal*** *from the EMS Paramedicine Program on the* ***first offense*** *at the sole discretion of the Program Director.*

It is important to note that all offenses are cumulative throughout the academic year – they are not limited to quarterly assessments.

Tardiness

Students are expected to show up to clinical shifts on time and in full uniform. Tardiness to shifts will not be tolerated. The following action plan must take place in the event of tardiness:

1. The Clinical Coordinator must be notified via phone, text message or email as soon as possible.
2. The applicable hospital department or ambulance station must be contacted via phone to advise them that you will be late. You ***must*** document the name of the person you contacted, along with the date and time. If you are unable to reach anyone via phone, you must document when a message was left with that department.
3. An *Incident Report Form* must be completed in its entirety and submitted to the Clinical Coordinator's mailbox at the next regular day of class.

Breaks During Clinical Shifts

During Clinical Shifts, students may take a meal break for no longer than 30 minutes per 8 hour clinical shift. Students must obtain permission from the assigned clinical shift preceptor (nurse, RT, etc.) prior to taking a break.

Leaving Early

Students may not leave a clinical shift early without permission from the Clinical Coordinator. The only exception to this is an OR/Airway shift when there are no more patients for the day.

Transferring Clinical Units

Students may not leave an assigned clinical unit to serve clinical time at another clinical unit without the expressed permission of the Clinical Coordinator.

Accompanying Patients in the Clinical Setting

Students may not leave an assigned clinical unit to accompany a patient to another clinical unit (e.g., radiology, bed assignment, hematology, pre-operative unit, etc.) without a properly credentialed healthcare provider employed by that healthcare institution. As a student, you must be supervised in the clinical environment at all times.

Changing Assignments:

At times, ambulance agencies may assign you to a different medic unit in a different location and/or station. This is at their sole discretion and is allowable - you do not need to seek permission from the Clinical Coordinator if you are reassigned to an alternative location.

Double Medic Student:

At no time may more than one medic student be assigned to a single ambulance, unless there are two approved paramedic preceptors on-board the ambulance. Should this occur, the Clinical Coordinator must be notified immediately.

Classroom Attendance and Conduct

Attendance and conduct in the classroom may vary somewhat from expectations in the clinical setting. The following apply specifically to the classroom setting ***only:***

- You are a member of a "closed" cohort of students. This means that you are a member of a special group of students of which no one else can enter (with very limited exceptions). As such, you will most likely establish close solidarity and trust with each other. These relationships are expected and encouraged, but they should never interfere with your educational goals. You are expected to be RESPECTFUL of your instructors and peers at all times. ***"Sidebar" conversations or food preparation activity while faculty and speakers are lecturing are not permitted at any time.*** Cell phones are prohibited in the classroom during lectures and practical lab sessions. In the event that you are expecting an important phone call (of an emergency nature), you must advise the faculty member in advance and seek their permission to have your phone accessible to you in the classroom. Otherwise, all cell phones are to be silenced or turned-off and placed in your mailbox upon entering the classroom. Laptop computers and electronic tablets are allowed only for note-taking – not surfing the Web during class. Disciplinary action or program probation may be invoked for repeated misconduct. A list of classroom rules (see Classroom Rules on page 36) will be posted in the classroom for your review – compliance is expected.

- Food preparation in the classroom must occur before class starts or during breaks. ***No food preparation is allowed during active classroom instruction.*** You are permitted to obtain a cup of coffee (or other beverage) during lecture if you are quiet and respectful of others. You are not permitted to make coffee during lecture. Consumption of snacks or prepared drinks is permitted during lecture as long as it is not disruptive. All dishes and cups must be washed by the end of the day. If dirty dishes/cups remain in the sink, on the counter, or on the tables at the end of the day, food preparation privileges will be revoked for the entire class.

- Wandering around the classroom, standing in the back of the classroom, and frequent trips to the restrooms are strongly discouraged. If you feel the need to stand in the back of the classroom during lecture, you may do so occasionally with minimal disruption. Standing makes note-taking nearly impossible, so this practice is not encouraged. Trips to the restroom should be coordinated with breaks and minimized during lectures.

- If trips to the bathroom during lecture become excessive, a policy of signing out and signing in from the classroom will be instituted.

- Breaks are scheduled periodically to allow opportunities for visiting restrooms, stretching, checking cell phones, and any similar personal matters. Use your break time wisely – do not spend your entire break talking with one another or using your cell phone and then expect to leave the classroom during lecture to use the restroom. Leaving the class during lecture is disruptive to the teacher and students alike and should be minimized. If a break is necessary, alert the instructor.

- Recording of lectures with audio recorders is allowed with permission of the instructor only.

- Attendance will be recorded for all class sessions through a sign-in form. Be sure that you sign your name in the space provided for each course. Signing another person's name is considered forgery and constitutes fraudulent documentation – grounds for immediate dismissal from the Program. Failure to sign-in at any class will result in an unexcused absence.

- Expect the classroom door to be shut and locked at the start time of class, especially if tardiness becomes an issue. It will also be closed and locked between classes.

- Repeated absences, chronic tardiness, and ongoing class disruptions will result in a counsel session with the faculty and Program Director.

- You will not be permitted to schedule any hospital or ambulance shifts during scheduled classroom lectures and labs. Do not schedule clinical shifts in the late afternoon or evening of a class day. There is little opportunity for you to adequately prepare and be well-rested prior to beginning your hospital clinical or field clinical shift immediately following a day of lectures.

- Instructors have the option of dismissing you from class for disruptive or inappropriate behavior and referring you to the Program Director, Department Chair, or Department of Student Affairs for disciplinary action.

- Be respectful of your fellow students during examinations. Any occurrences of academic dishonesty will be dealt with promptly according to the University policies and guidelines. Exam questions are not subject for debate in class. If you are unclear regarding an element or concept related to the question, you are encouraged to ask the faculty member for clarification or explanation. If you disagree with an exam question or grading decision, ***you must present your argument in writing with ample references and details***. Only then will the faculty member consider your appeal. Exam questions are not to be debated during class sessions.

- Unprofessional and discourteous behavior in class will not be tolerated and will result in a counseling session at a minimum. All students are evaluated in each quarter within the affective domain of education, which has equal value as the cognitive and psychomotor domains in grade determination.

Classroom Attendance Guidelines:

Attendance in class is essential to a full understanding of the curricular content and successful completion of the education and terminal assessment, not to mention necessary for effective paramedical practice. For this reason (and in order to comply with state and federal requirements), attendance must be taken at every class session and students are not permitted excessive absenteeism or tardiness. As such, the following parameters will guide disciplinary and administrative action:

- Unexcused absences of less than 10% of class sessions will result in a counseling session.
- Unexcused absences of more than 10% of class sessions will result in a counseling session and possible grade change.
- Unexcused absences of more than 20% of class session will result in a counseling session and a reduction of grade with a probationary status.

- Excused **or** unexcused absences of more than 30% of class sessions will result in either an "unsatisfactory" or "incomplete" grade for that course and a counseling session.

All absences from class requires each student to complete an *Absence Form* in its entirety and submitted to the Program Office directly and time-stamped by the next class day.

CLASSROOM RULES

1. It is important that you arrive on time for class–if you expect to be tardy or absent, contact the instructor of record prior to the start of class either by phone or text message or by talking directly to the Program Assistant who will relay the information to the instructor. Notification by email is not acceptable. Chronic tardiness and absenteeism will be addressed as per Program policy.

2. Absolutely no talking or distracting behavior during an instructor's lecture/presentation – this includes food preparation, wandering around the classroom, and sidebar conversations. Disruptive behavior is cause to be removed from class and reported to the Office of Student Affairs.

3. Arriving to class, labs, clinical sites, or internship agencies intoxicated and/or under the influence of recreational drugs is strictly prohibited. Do not consume any alcohol or recreational drugs prior to class that may result in impairment or undesirable behaviors. Do not consume alcohol the night before class in quantities enough to cause a hangover. Coming to class exhibiting behavior secondary to intoxication or with a hangover are grounds for dismissal from class. Warning: If your alcohol consumption interferes with your progress or disrupts class in any way, you will be reported to the Office of Student Affairs and risk dismissal from the Program.

4. Treat your fellow students and instructors with respect and show consideration for each other. Any defamatory or undue critical remarks or gestures will not be tolerated.

5. Food or beverage ***preparation*** during formal instruction ***is not permitted***. It is acceptable to pour yourself a cup of coffee or tea during lecture if every effort is made to be least disruptive. Please do not abuse this privilege. Please assure that your personal space is neat and clean at all times and be sure to wash and dry any dishes you use prior to leaving the classroom. No dirty dishes left in the sink! The counter-top in the rear of the classroom must be properly maintained.

6. Standing in the back of the classroom during lecture should be kept to an absolute minimum. Walking about and distracting behavior will result in a restriction of privileges.

7. No electronic devices will be used during formal instruction except for note-taking. Cell phones are to be silenced and placed in your mailbox upon entering the classroom. ***Faculty may grant exception to this rule on an individual basis/request (e.g., family emergency).*** If a computer is used for anything other than note-taking during formal instruction, a counselling session and disciplinary action will follow for that student. These restrictions do not apply to Program faculty.

8. Visits to the restrooms should occur during breaks to the extent possible. Breaks are scheduled to allow you time to visit the restroom, make coffee, prepare food, or check cell phones. Use the break time wisely to avoid disruption during lecture.

9. Students will not be permitted access to ***any*** storage cabinet without the express permission and direct supervision of the faculty.

10. Following each lab rotation within a lab session, the student team is responsible for reassembling equipment, cleaning up the station, restocking the supplies, and preparing the station for the next student group. ***All equipment must be returned to its original location neatly and in proper working order. It is also the responsibility of each student to ensure that the appropriate skill form is complete and signed by the faculty member prior to leaving the station.***

11. Training equipment will be handled carefully and with respect. Should a piece of equipment break, you must report this to the faculty before leaving the classroom. All training equipment will be returned to its proper place in clean and neat order prior to leaving the classroom. Do not "experiment" or "trial" the use of laboratory equipment prior to the instructor demonstrating its proper use. The use of laboratory equipment must be at the direction of the faculty at all times.

12. You will not remove anything from the classroom that is not explicitly yours without the consent of the faculty or Program Director.

13. The area at the front of the classroom (behind the instructor's desk) is restricted to instructors only. The computer is for instructor use only. This area contains private student information, instructor personal items, and expensive equipment. Do not enter this area without express permission by the instructor and do not use the computer unless requested by the instructor.

14. During didactic instruction, students are not permitted entry into the lab stations unless expressed permission is given by an instructor.

15. Please refer to ***Attendance, Conduct, and Appearance*** in the Paramedic Manual for more information and a detailed description of Classroom Rules and conduct.

Lab Guidelines

The following applies specifically to the practical labs and is supplemental to the classroom guidelines:

- Students will report on time to the lab sessions, maintain participation to the assigned group, bring all necessary equipment to each lab session, and remain in the lab throughout the session. Trips to the restroom should be kept to an absolute minimum.
- The following equipment will be brought to each and every lab session: personal electronic tablet, stethoscope, ECG calipers, timepiece, any pharmacology reference or other learning aids, the required skill performance sheet for that particular session, and any other equipment required for that particular session.
- Switching between lab groups is severely restricted. Exceptions can be made on a case-by-case basis with reasonable explanations of need and permission from the lab instructors.
- Students are not to access the drug and equipment cabinets at any time without the specific permission and supervision from a lab instructor – at which time only the items needed will be retrieved.
- Absolutely no medications or lab equipment will be taken from the lab area for any reason – no medications or I.V. fluids or equipment are permitted to be taken home whatsoever.
- Students are to refrain from handling the equipment and "experimenting" at the start of the lab session before the instructor begins the session.
- Handle all equipment (especially the manikins) with gentle care. If any equipment or instructional aids is damaged during the course of the lab session, it must be reported to the lab instructor at once.
- All equipment must be maintained to a professional level – it must be clean, arranged neatly in their designated space, and replenished at the completion of each lab session. This includes the lab areas. All equipment must be returned to its original storage space and all used medications and soft supplies will be replaced at the end of each lab group session.
- It is the student's responsibility to ensure that all skill sheets and performance assessments are completed successfully and all documentation is signed by the instructor and submitted.
- **Each student's electronic record of lab skills must be maintained at all times for currency, completeness, and instructor signatures**. It is the responsibility of each student to ensure that any lab session that requires a psychomotor skill sheet to be completed electronically and presented to the instructor for evaluation and signatures. Failure to complete necessary skill sheets or obtain instructor signatures may result in the need for the student to repeat that lab session. Lab manuals may be audited at any time.

Dress Code

You are expected to be dressed professionally and neatly at all times. Uniforms will be worn during all Program activities both inside and outside of the classroom. This includes Program events, clinical, and field activities (the only exception is for the Psychiatric Department for hospital rotations). The uniform is intended for, and limited to, wear for Program-related activities ***only. You are not permitted to wear the uniform for activities not directly related to or sponsored by the Program.***

Classroom – the following are guidelines for clothing to be worn during class sessions:

- Uniforms are to be worn during all class sessions. The appropriate uniform is comprised of a Program-approved uniform shirt, trousers, and appropriate black socks, shoes/boots, and belt.
- During cold and inclement weather, it is acceptable for Program-approved, quarter-zip jerseys to be worn during class. Anytime a uniform is required to be worn, the uniform jacket is the only acceptable jacket to be worn in addition to the uniform.
- EMS-related attire that is not Program-sponsored is not permitted.

Clinical Rotations – the following are permitted to be worn during clinical rotations.

Hospital Rotations:

- Only **approved** uniform shirts, trousers, and hats will be allowed ***(not quarter-zipped jerseys)***. They must be neat and clean with the CWU Program patch on the left shoulder and the appropriate EMT patch on the right shoulder.
- Scrubs in designated areas of the hospital only (leave on site): Intubations, OR and OB. You are to wear your uniform to and from these areas and change into and out of the scrubs. **DO NOT TAKE SCRUBS HOME…IF THIS OCCURS, DISCIPLINARY ACTION WILL BE TAKEN AS THIS CONSTITUTES THEFT OF PROPERTY.**

Field Rotations:

- Standard, Program-approved uniforms are required during EMS agency field site activities. This includes the Program-approved uniform jacket. Program-approved quarter-zip jerseys can be worn as substitution for the jacket if it has the required patches affixed and the correct identification name appears on it and the EMS agency will allow wearing of the quarter-zip jersey. If the quarter-zip Program jersey is worn during clinical field rotations, a Program-provided reflective, safety vest must be worn over it for safety when in hazardous or potentially hazardous conditions.

General Guidelines:

- Uniform Jackets are the **ONLY** jackets to be worn during clinical (hospital or field) rotations – **no exceptions!**
- No jeans, open-toed shoes, sneakers, revealing clothing, or EMS apparel are permitted.
- Black boots or work shoes are required. Footwear must be clean and in good repair.
- All students must maintain a cleanly-shaven face or neatly-kept moustache or hair at all times. Fingernails are to kept clean, closely trimmed, and without colored nail polish.
- No long, dangling earrings are allowed. Any noticeable rings and body piercing jewelry are to be removed while you are in clinical or field settings.
- The approved baseball caps or knit hats with logo are optional.

- Black socks and black belts must be worn with the uniform.
- While in clinical settings, you shall always wear a name tag which gives your first name and last name and underneath, the words, "Paramedic Student - Central Washington University". Picture I.D is also required. The ***only*** exception is the psychiatric department.
- Wearing of jump suits is strictly prohibited under normal circumstances.
- Avoid wearing clothing beneath the uniform shirts and jerseys that are not dark in color.
- Avoid wearing any offensive clothing, jewelry, or fragrances. Many people are allergic or have untoward reactions to strong fragrances. In addition, be sure to cover any body markings (tattoos) while in the clinical setting.

Personal Equipment Needs:

- Timepiece with the seconds function
- Scissors
- Stethoscope (of the recommended type)
- EKG calipers
- Pen Light
- Snellen Eye Chart (handheld)
- BioHazard Kit (consisting of gown, cap, shoe covers, N95 masks, and gloves)
- Program-approved metal clipboard
- Eye protection is required and the responsibility of the student
- Reflective Safety Vest (if necessary)

During any hospital rotation, clinic, lab, or workshop, you will dress to meet professional standards. In general, this means that you must wear your uniform while on rotations. When reporting to an OR, OB or any other shift that requires you to wear a scrub suit, you must arrive in the approved uniform. The only exception is during psych rotations, which requires you to wear non-uniform, professional attire (e.g., button-down shirt, slacks, shoes and no tennis shoes, sandals, jeans or shorts). Please refer to the *"Uniform/Dress Standards for Clinical and Field Sites"* for more details. Poor personal hygiene and/or dirty or unkempt clothes and shoes are prohibited! Remember - you are part of a medical profession and you represent the profession as well as this program. T-shirts, of any type, are not considered in compliance with the uniform policy for field or hospital sites. Under select circumstances (cold weather), you are permitted to wear the Program-approved quarter-zip sweatshirt with the appropriate patches at field sites only (NOT hospitals).

Code of Conduct

The following is the Code of Conduct, which all students are expected to acknowledge the understanding and compliance by signing a separate form:

We, the students of the 2016 – 2018 CWU EMS Paramedicine Program, recognize the selfless efforts of the field and clinical staffs and preceptors who share their time, experience, and knowledge with us during our rotations, and we hereby pledge to adhere to the following code of conduct during all field and clinical rotations:

PROMPTNESS:

- We will be in uniform, ready to begin our shift at the designated site and on time.
- We will notify the field / hospital agency and program faculty in the event we are going to be absent or late.
- We will complete all paperwork promptly, thereby allowing our preceptor as much time as possible to review it before the end of each field / hospital experience.

PARTICIPATION:

- We will participate fully in all activities with the field / hospital staff from which we are gaining experience, as directed by our shift preceptor.
- We will assist with daily ambulance and equipment checks and station cleaning duties at field sites without fail.
- We will exercise sound judgment of downtime during field / hospital rotations and will arrive for each shift with appropriate study materials.

PROFESSIONALISM:

- We will be dressed in accordance with CWU EMS Paramedicine Program Uniform Standards at all times.
- We will behave in a considerate, polite, and respectful manner towards our patients, our preceptors, our host agencies, and the program faculty at all times.
- We will take every opportunity to learn from those around us, and will exercise humility in accepting constructive feedback.
- We will promote the EMS Paramedicine Program and the principles for which it stands in the advancement of the profession both in personal and social communications and will refrain from rendering any derogatory or defamatory statements that may be harmful to the Program, faculty, fellow classmates, or to the profession.

Student Conferences:

The Program Director or Medical Program Director may request a meeting with each student throughout the academic year. These will be general conferences in which the performance of a student and any questions you may have will be discussed.

The Affective Domain Assessment

The EMS Paramedicine Program at Central Washington University has adopted the three domain assessment practices in the assessment of student performance. The three domains are cognitive, psychomotor, and affective. The cognitive domain represents the traditional academic performance assessment often referred to when describing student performance. It typically consists of assessment tools such as multiple choice exams, short-answer exams, completion questions, essay questions, and similar cognitive assessment instruments.

The psychomotor examination evaluates the student's ability to transfer cognitive knowledge into practice, with some emphasis on motor skill performances. In EMS, this is often translated into skill-intensive practices such as airway management, intravenous therapies, defibrillation, and similar skills. However, it also includes applying the cognitive knowledge into an integrated assessment and treatment approach, such as case-based scenarios and simulated patient conditions.

The affective domain is less commonly assessed in education and is often unrecognized by students, practitioners, employers, and even some educators. Nonetheless, it represents an equally important and relevant domain of student performance and skill mastery. With the ultimate goal of developing highly-skilled, entry-level competent paramedics with abilities of practice, management, education, research, and leadership beyond that of most paramedic student graduates, the EMS Paramedicine Program at Central Washington University places considerable emphasis on student performances in the affective domain. This domain often represents the most important component in predicting student successes within a professional environment. The affective domain is discussed hereafter and references are made to the form on page 44.

There are two primary purposes of an affective evaluation system: 1) to verify competence in the affective domain, and 2) to serve as a method to change behavior. Although affective evaluation can be used to ultimately dismiss a student for unacceptable patterns of behavior that is not the primary purpose of these forms. It is also recognized that there are some behaviors that are so serious (abuse of a patient, gross insubordination, illegal activity, reporting for duty under the influence of drugs or alcohol, etc.) that it would result in immediate dismissal from the educational program. The two forms included in the EMT-Paramedic: National Standard Curricula were developed by the Joint Review Committee on Educational Programs for the EMT-Paramedic. They represent extensive experience in the evaluation of each student's affective domain. The nature of this type of evaluation makes it impossible to achieve complete objectivity, but these forms attempt to decrease the subjectivity and document affective evaluations.

In attempting to change behavior it is necessary to identify, evaluate, and document the behavior that is desired. The fourteen affective characteristics that form the basis of this evaluation system refer to content in the Roles and Responsibilities of the Paramedic unit of the curriculum. Typically, this information is presented early in the course and serves to inform the students what type of behavior that is expected of them. Cognitive and psychomotor objectives are relatively easy to operationalize in behavioral terms. Unfortunately, the nature of the affective domain makes it practically impossible to enumerate all of the possible behaviors that represent professional behavior in each of the fourteen areas.

The affective evaluation instrument is the Professional Behavior Evaluation. The Professional Behavior Evaluation will be completed regularly (at least once a quarter) by faculty and possibly

also by preceptors for each student. Like any other assessment instrument, it becomes part of the student's record.

The only two options for rating the student on this form are "competent" and "not yet competent." For each attribute, a short list of behavioral markers is listed that indicates what is generally considered a demonstration of competence for entry-level paramedics. This is not an all-inclusive list, but serves to illustrate to the student what is expected and to help the evaluator in making judgments. Clearly there are behaviors that warrant a "not yet competent" evaluation that are not listed. Any ratings of "not yet competent" require explanation in the space provided.

Affective domain assessment are regarded equally as cognitive and psychomotor domain assessments. As such, a negative affective domain assessment ***can lower your grade.*** That is, if significant affective domain concerns arise, the letter grade in that course can be lowered as detailed in the following:

- Either two or three consecutive negative assessments (not yet competent) of any one category of the Professional Behavior Evaluation will result in a grade reduction of 5 percentage points
- More than three and less than five consecutive negative assessments of any one category of the Professional Behavior Evaluation will result in a grade reduction of 10 percentage points.
- More than two and less than three consecutive negative assessments of any two or more categories of the Professional Behavior Evaluation will result in a grade reduction of 15 percentage points
- More than five consecutive negative assessments of a single category or more than three consecutive negative assessments in any two categories of the Professional Behavior Evaluation will result in a formal meeting with the faculty and Program Director and possible dismissal from the Program.

For all affective evaluations, the faculty member will focus on patterns of behavior, not isolated instances that fall outside the student's normal performance. For example, a student who is consistently on time and prepared for class may have demonstrated competence in time management and would not be penalized for an isolated emergency that makes him late for one class. On the other hand, if the student is constantly late for class, they will be counseled and if the behavior continues, rated as "not yet competent" in time management. Continued behavior may result in disciplinary action.

It is important to recognize that each student's success in the Program is dependent upon adequate performances in ***each of the three domains***. Students that perform well on exams (cognitive domain), demonstrate skill mastery in lab sessions with leadership and participatory traits (psychomotor domain), but exhibit poor behavior (affective domain) in class or clinical environments on more than one occasion, may fail the course due to inadequacies in the affective domain.

The following page depicts the Affective Domain Assessment template. This is the basic format that will be used to evaluate students in the affective domain throughout the Program. A copy of the form is available for review in the Program's Office.

Professional Behavior Evaluation Form

1	**Integrity**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Consistent honesty; being trusted with the property of others; being trusted with confidential information; complete and accurate documentation of patient care and learning activities.		
2	**Willingness to Accept Criticism**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Receptivity to constructive feedback and advisements from faculty and preceptors; earnest and sincere responsiveness without verbal retorts or disapproving gestures		
3	**Empathy**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Showing compassion for others; responding appropriately to the emotional response of patients and family members; demonstrating respect for others; demonstrating a calm, compassionate, and helpful demeanor toward those in need; being supportive and reassuring to others.		
4	**Being Nonjudgmental**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Maintaining an open mind to possibilities and variances to human ideals and values; not altering care to nonstandard patients; showing just and equitable regard for all		
5	**Self-Motivation**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Taking initiative to complete assignments, to improve and/or correct behavior; taking on and following through on tasks without constant supervision; showing enthusiasm for learning and improvement; consistently striving for excellence in all aspects of patient care and professional activities; accepting constructive feedback in a positive manner; taking advantage of all learning opportunities		
6	**Appearance and Personal Hygiene**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Clothing and uniform is appropriate, neat, clean and well maintained; good personal hygiene and grooming; no excessive jewelry or colognes; and clean shaven face.		
7	**Self-confidence**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Demonstrating the ability to trust personal judgment; demonstrating an awareness of strengths and limitations; exercises good personal judgment.		
8	**Communications**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Speaking clearly; writing legibly; listening actively; adjusting communication strategies to various situations		
9	**Time Management**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Consistent punctuality; completing tasks and assignments on time		
10	**Teamwork and Diplomacy**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Placing the success of the team above self-interest; not undermining the team; helping and supporting other team members; showing respect for all team members; remaining flexible and open to change; communicating with others to resolve problems.		
11	**Respect**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Being polite to others; not using derogatory or demeaning terms; behaving in a manner that brings credit to the profession.		
12	**Patient Advocacy**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Not allowing personal bias to or feelings to interfere with patient care; placing the needs of patients above self-interest; protecting and respecting patient confidentiality and dignity.		
13	**Careful Delivery of Service**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Mastering and refreshing skills; performing complete equipment checks; demonstrating careful and safe ambulance operations; following policies, procedures, and protocols; following orders		
14	**Exhibiting Professional Values**	❑ **Competent**	❑ **Not Yet Competent**
	Examples of professional behavior include, but are not limited to: Holding altruistic values; putting others well-being before one's own (outside of safety); maintaining professional morals and code of professional conduct in EMS.		

PATIENT CONFIDENTIALITY

Any information regarding a patient treated in either the prehospital or the hospital settings is strictly confidential. It should not be discussed with your spouse, friends, or other persons not involved in the medical care of that patient. However, you may discuss the patient's problems with other EMS personnel involved in the call, the program instructors, or your classmates, if it serves an instructional purpose. When doing this, you must **not** use the patient's name, but refer only to the patient by age and sex (for example: a 51 year-old white male). This format is also to be utilized when writing patient narratives on your clinical forms. Please use only identifying data such as a patient's age and sex, and the hospital or ambulance number on your log sheets. The patient's name should **not** be written down, nor should you identify the physician by name.

- Any patient documentation, such as the chart, should never be taken out of the hospital. Any information asked of you by law enforcement personnel or the news media should not be released. You should simply say that you are a paramedic student and not allowed to legally divulge information to either the news media or law enforcement personnel. There are other sources where this information is available.

- Another important item is conversation in the vicinity of patients, either in the ambulance, in the hospital setting, or outside the hospital. You must be extremely careful of what you say around the patient, whether you are talking to the patient or whether you are discussing his case with a nurse, physician or other medical personnel. Make certain that you do not say things patients can overhear which might harm them emotionally. If you need to discuss a patient's problem or case with someone else, move a distance from that patient so you are certain they cannot hear you. You should also be careful that others cannot overhear your conversation. Remember, anything you say about the patient is strictly confidential.

- HIPAA training will be conducted for all students in the fall quarter before clinical rotations start. You cannot start your clinical and field training without this training. All students must follow HIPAA guidelines concerning patient confidentiality at all times during any discussion of patient contacts during field or clinical rotations.

GRADING, EXAMINATIONS AND GRIEVANCES

Grading and Exams:

- Details of grading, attendance, course guidelines and objectives, teaching methods, and class schedules are described in each individual course syllabus. These syllabi denote when and how examinations are administered; however, **you may expect cognitive or psychomotor assessments at any time without notice**.

- Cognitive and psychomotor examinations require strict control and close supervision by the Program faculty and staff. All written (cognitive) examinations will be numbered uniquely, that number recorded on any answer sheet, and the exam returned to the instructor or exam proctor upon completion of the examination. Exams will not be returned to the student. Should you want to review your exam, you may do so at the Program Office under direct supervision and within a specific area. Students may not review exams together and all exams must be returned to the Program upon completion of the review. Integrity of the assessment instruments must be maintained at all times and any incident of retaining an exam or revealing exam content will result in disciplinary action and possible dismissal from the Program.

- The supplemental certification exams (ACLS, PHTLS, PALS, etc.) are offered outside of the standard curriculum of this program during the summer quarter. Details of those examinations are provided separately.

- The State of Washington has adopted the National Registry EMT-P Exam. You must pass the exam to be certified in the State of Washington. You must pass Central Washington University's comprehensive exams before you are eligible to take the national exam. The NREMT-P practical exam customarily costs between $300 and $400, and the NREMT-P written exam typically costs approximately $150. The CWU EMS Paramedicine Program is under no obligation to offer the NREMT Practical Exam.

- **To be eligible to take the National Registry Written Exam, you must have completed all of the requirements of the program and returned all Program possessions (e.g., Program-specific Student I.D., safety vest, lab manual, etc.). You cannot be certified until all exams and terminal objectives have been satisfactorily completed.** However, you may be eligible to "sit" for the National Registry *Practical* Exam prior to completion of all Program Requirements.

- The EMS Paramedic Program conforms to the University General Grading Scale (see below). Please note that an "A+" does not exist on the General Grading Scale. All scores occurring on the cusp of the grade will be "rounded-up" in accordance with generally accepted mathematical rules of rounding (scores of 0.5 or greater will be rounded up to the next whole integer).

General Grading Scale:				
93% or higher	A		73-76%	C
90-92%	A-		70-72%	C-
87-89%	B+		67-69%	D+
83-86%	B		63-66%	D
80-82%	B-		60-62%	D-
77-79%	C+		60% or below	F

- You must achieve a “C” or better on all courses in the EMS Paramedicine Major – this includes “Satisfactory” grades in S/U courses. Failure to achieve this grade in any courses in the major **will** result in an unsatisfactory completion of that course.

Grievance Process:

- Any examination questions that require explanation should be presented to the instructor for discussion and review. Should an exam question be considered unfair, unclear, or incorrect, the student is expected to present supportive information in writing along with sufficient referential information to the instructor. At no time will exam questions be debated in class.

- Students who believe they have been improperly graded should first attempt to resolve the matter with the Instructor on record. Thereafter, it may be presented to the Program Director. If the matter is unresolved to the student’s satisfaction, the student may appeal the grievance to the Department Chair. Failing resolution at that level, the grievance may be submitted to the College Dean. Finally, if the grievance is not resolved at the Dean level, the student may petition for a hearing with the board of academic appeals.

- Please note that faculty members are not permitted to discuss student performance matters with students’ family (including parents) or friends without the expressed, written permission from the student.

For details, contact the Office of the Dean of Student Success, located in Bouillon 204. You may reach them by phone at (509) 963-1515 or access their website at http://www.cwu.edu/student-success/

PARAMEDIC STUDENT FILES POLICY

Policies Concerning the Content, Access and Retention of Material in the Paramedic Students' Files

- Each student file will be stored in a locked cabinet within the Program's offices. Access to these files will be limited to authorized individuals only.

- Authorized persons permitted access to the files includes: the individual student, the Program Director, the Program Medical Director, the Program Faculty, the Department Chairman, the College Dean (or her designee) and the clerical personnel under the supervision of the Director of the Program. Strict confidentiality will be maintained concerning the content of any student file.

- Student-related files will include all necessary content as determined by the Program Director. Content may include, but is not limited to, the following:

    1. Student admission process and acceptance data
        a. Students must meet the minimal academic requirements for admission to CWU, which include a high school diploma or GED.
        b. Be a currently certified EMT with a minimum of one year of prehospital EMS experience.
        c. Aptitude test (TEAS – V) Score Summaries
        d. Letters of Recommendation
        e. Certifications
        f. College (and possibly High School) Transcripts
        g. Other relevant admission information

    2. Attendance in courses and clinical and internship training
        a. Record of attendance is maintained for all didactic and lab sessions.
        b. Monitoring of attendance at clinical and internship assignments is done to assure compliance. Frequent absences will be documented in the student's file.
        c. Medical records related to absences and explanatory letters of tardiness or absences

    3. Academic or behavioral counseling and quarterly evaluation of performance
        a. Quarterly evaluation and status determination of each student is conducted by the faculty and the Program Director. At times, documentation related to this evaluation is maintained in the student's file.
        b. Counseling forms are maintained in the student files permanently.

    4. Evaluation of performance (both summative and formative) and successful completion of terminal learning objectives
        a. Skills Lab performance sheets
        b. Clinical and Internship Performance evaluation forms
        c. Demographics Log of Clinical and Internship Experience
        d. Other appropriate measures of performance, (i.e., tests, quizzes, individual feedback outside of the routine methods of evaluation).
        e. Course examination statistical data from the Office of Testing and Evaluation

    5. Grades and credits earned are recorded and retained in the University-wide system as well as a separate file maintained by the Director of the Program. University policies prohibit the

recording of course grades in the student's individual files.

a. The files will be retained in accordance with University and state policies and guidelines.

- Any policies developed by CWU concerning student records also apply to the Paramedic student record.

Program Completion Guidelines

Program Clinical Minimum Requirements

The following outlines the *minimum* requirements for each clinical activity for both hospital and field environments:

- Patient Distribution – every student must be actively involved in the care of a wide variety of patient types to attain adequate clinical experience. This patient distribution and required degree of exposure are categorized into three different typologies as follows:
    - Age:
        - Adult patients (18 – 55 years of age) – 50
        - Geriatric patients (55+ years of age) – 30
        - Pediatric patients (less than 18 years of age – 30 as follows:
            - Newborn – 5
            - Infant – 5
            - Toddler - 5
            - Preschooler – 5
            - School age – 5
            - Adolescent – 5
    - Chief Complaint:
        - Abdominal Pain – 20
        - Adult Respiratory – 20
        - Pediatric Respiratory - 5
        - Altered Mental Status (AMS) – 20
        - Chest Pain – 30
        - Dizziness – 5
        - Weakness – 5
        - Headache – 5
        - Syncope – 5
    - Clinical Impressions:
        - Medical – 50
        - Trauma – 40
        - Cardiac Arrest – 1
        - Neurological – 1
        - Cardiac Emergency – 15
        - Obstetric/Gynecological – 10
        - Psychiatric – 20
        - CVA – 5
        - Respiratory Distress – 15
        - Abdominal Emergency – 20

- Intensive/Coronary Care Unit – a minimum of 8 patient contacts with comprehensive assessments completed on each

- Emergency Department – a minimum of at least 150 (documented) patient contacts (assessments)
    - Be sure to document **all** patient assessments in accordance with the designated categories for age and nature of illness

- Airway Management – minimum of 12 successful, live intubations either hospital or field

- Ventilations/ventilator assistance –a minimum of 15 patients in which you either assisted ventilations or actively ventilated with BVM or similar device

- Intravenous Access - 100 successful IV's (any combination of hospital and field attempts)

- Medication Administration – 20 (any route)

- Pediatric Assessments - a minimum of 30 pediatric patient assessments consisting of:
  - 5 newborn assessments
  - 5 infant assessments
  - 5 toddler assessments
  - 5 preschooler assessments
  - 5 school age assessments
  - 5 adolescent assessments

- Obstetrics - must observe a minimum of 5 vaginal deliveries
  - With at least 5 newborn assessments

- Respiratory - at least 20 patient contacts
  - Must document all assessments and patient interventions, including:
    - Nebulizations
    - Ventilatory assistance (ETT maintenance, PEEP, CPAP, BiPAP, BVM)
    - MDI's
    - Suctioning
- Behavioral and psychiatric - at least 20 patient contacts (interactions)

*Please Note: All psychomotor skill competencies **must** be verified by the Program Faculty and documented on the ALS Skills Approval Form at the time of mastery. Failure to document these skills on the ALS Skills Approval Form will result in ineligibility to perform those skills in the clinical setting. It is the student's responsibility to (1) obtain the approval signature from the faculty member and (2) present the ALS Skills Approval Form to all clinical preceptors (field or hospital) at the time of arrival.*

Summary Clinical Benchmarks

Month	Clinical Area	Unit	Number of patient contacts	Accumulated patient contacts
January	Hospital	Anesthesia (ETTs)*	3+	3
February		E.D.	60	60
		ICU/CCU	8	8
	Field	24 hour shifts	30	30
March	Hospital	Anesthesia (ETTs)*	3+	6
		E.D.	30	90
		OB**	2+	2
	Field	24 hour shifts	15	45
April	Hospital	Anesthesia (ETTs)*	3+	9
		E.D.	30	120
		Respiratory	10	10
		OB**	3	5
		Psych (2 shifts mandatory)	10+	10
		Mary Bridge (1 shift mandatory)	Ped age requirements	as needed
	Field	24 hour shifts	15	60
May	Hospital	Anesthesia (ETTs)*	3+	12
		E.D	30	150
		Respiratory	10	20
		Psych	`10	20
		Mary Bridge E.D.		as needed
	Field	24 hour shifts	15	75
June	Hospital	Anesthesia (ETTs)*	as needed	15
July	Field	24 hour shifts	25 team leads	100+
August				
		Note: last 25 field calls must be team leads		

*Numbers indicate successful intubations

**Numbers indicate successful vaginal deliveries (observation/performance)

Program Clinical Completion Requirements

All Program clinical requirements are expected to be completed by the conclusion of the summer quarter. Three conditions of failing to meet these clinical requirements demand special attention:

1. The clinical benchmarks (see page 54) are a guide for normal progression. However, should a student fail substantively to meet expected clinical goals within any given quarter, they may be issued an "unsatisfactory" grade for that course (which will prohibit continued clinical coursework).

2. Clinical-hospital experience (all hospital-based experience) is expected to be completed by the end of the spring quarter. Failure to complete the clinical-hospital requirements will result in an unsatisfactory grade in EMS 493B. There is only one exception to this policy:

   Intubation Requirements: If all clinical requirements (other than team leads) are met, **and** the required number of intubations are not met, **and** there is ample evidence of continuous clinical activity (i.e., no idle periods of clinical inactivity greater than 7 days), **and** all other benchmarks have been satisfied, **then** the student may receive an "Incomplete-In Progress" (IP) grade for EMS 493B and continue throughout the summer to satisfy those requirements

   Once the intubation requirements are met, the student will be issued a "Satisfactory" grade in EMS 493B and then may register for EMS 493C (through a Special Arranged Course). Registration for EMS 493C cannot occur until EMS 493B is completed. The student would then proceed to fulfill the requirements of EMS 493C (riding for team leads) to the end of the 9-week summer session. If the summer 9-week session has expired and the student has not yet fulfilled the team lead requirements, an "Unsatisfactory" (U) grade will be issued for EMS 493C. The student will then be required to repeat EMS 493C following a formal evaluation by the faculty, Medical Director, and Program Director. Prior to repeating EMS 493C, the student will be required to repeat select clinical performances terminal objectives to the satisfaction of the Medical Director, faculty, and Program Director

3. ALL clinical hospital and field experience (riding for team leads) is expected to be completed by end of the summer quarter. Continuing clinical activity beyond the end of the summer 9-week session will require the student to re-enrollment in courses, the reestablishment of clinical program requirements (immunization requirements, criminal background checks, toxicology screening, health insurance, vehicle insurance, malpractice insurance, etc.) prior to continuing

Program Field Completion Requirements

1. ***A minimum of 100 patient contacts are required (the last 25 of which must be Team Leads). All of the Team Leads will be conducted in the summer quarter only. Team Lead calls must be ALS with some level of medical complexity.***

2. A minimum of 100 successful IV's starts from hospital and ambulance experiences must be accrued by Program end. You may start field IV's only after you demonstrate consistent competency in the lab and with faculty approval, as evidenced on the ALS Skills Approval Form.

3. A minimum of **twelve** successful endotracheal intubations are required on human subjects (***this is not negotiable***). Before being allowed to attempt intubations in the hospital or field settings, you must have faculty approval on the Advanced Skills Approval List. This approval is contingent upon successful student demonstration of competency as evidenced by the laboratory performance guidelines. In general, OR intubation skill development should precede field intubation practices. ***However,*** under select circumstances, if the field preceptor feels confident in your intubation skills, and upon his/her discretion, the preceptor may allow a field intubation prior to completion of OR intubation requirements.

4. Team Lead calls: All Team-Lead calls must have a field evaluation form filled out by your preceptor and signed, or it will NOT count. To satisfy Team Lead requirements, all preceptor performance evaluations must be adequate (see Team Leader Evaluation Form). Best outcomes occur when Team Leads are assessed with one or two preceptors. For this reason, students will select no more than two preceptors during Team Lead requirements.

5. Only 1 PCR per patient encounter, if multiple victims are managed – *you should document each patient as an encounter and you must provide information as to assessment findings and interventions and provide a PCR for each patient*.

Clinical and Field Experience Grading

Your Clinical-hospital and Clinical-field experiences (EMS 493's) are graded as Satisfactory or Unsatisfactory. In the event you have not completed the expected skill performances for EMS 493 A or EMS 493 B, you may receive an "Unsatisfactory" grade in that course. The only exception (see above) is when all clinical requirements have been met other than team leads and the required number of intubations. In that case, an "Incomplete-In Progress" (IP) grade may be issued for EMS 493B to allow for fulfillment of course requirements.

Similarly, if all requirements for EMS 493A and EMS 493B are satisfied and the required number of team leads are not met by the end of the summer 9-week session, an "Unsatisfactory" (U) grade may be issued for EMS 493C. ***Please note:*** Receiving an "IP" grade in any course will not appear on your transcript upon revision; *however it may prevent you from graduating if it is not revised to a Satisfactory Grade in time.*

PARAMEDIC PROGRAM COMPLETION CERTIFICATE

Program Completion Requirements:

To receive your Certificate of Completion from the EMS Paramedicine Program at Central Washington University or to partially satisfy the graduation degree requirements of the EMS Paramedicine Program of the first year of the major, the following steps must be completed:

1. You **must** successfully complete all Program Course Requirements for the first academic year of the major:
   - This includes satisfactory performance in all three domains (cognitive, psychomotor, and affective) for all didactic, practical and internship courses.
2. You must successfully complete the End-of-Program comprehensive examination (both written and practical) within four (4) consecutive attempts in a time period not exceeding 1 month.
3. You must successfully satisfy all clinical terminal objectives (hospital and field) as detailed in the Paramedic Manual and have received acknowledgement from the Clinical Coordinator, the Paramedic Program Director, and the Program Medical Director of your successful completion of the Program Requirements. In effect, you will be providing the documentation and evidence of clinical and field proficiencies. You must be able to demonstrate programmatic goal competency before completion of the program. The hourly and skill requirements, as structured in the Program, are designed to achieve this for the majority of students. It is ultimately the authority of the Program Medical Director to determine when competency is achieved by the student. ***This could require additional hospital or field experience beyond the listed minimums***.
4. You must have submitted to the Program Office all of your completed clinical forms for the entire academic year. In addition, all possessions of the Program, including the issued safety vest, the Program photo I.D., and any other Program-specific materials should be returned. Any account balances must be satisfied before Program completion can be declared.
5. Certificates of Completion for the paramedic components ***will not*** be issued before the completion of the 9-week summer session.

After successful completion of the above, you will receive a Certificate of Completion from the EMS Paramedicine Program at Central Washington University.

Program Learning Objectives

CLINICAL (HOSPITAL AND FIELD) EXPERIENCE OBJECTIVES

This section deals with the clinical and field experience of the student. Each unit of the section includes a list of learning objectives the student must accomplish. Additionally, the student must complete a skills sheet which is signed by the supervising staff which includes the preceptor's evaluation and comments of the student's performance.

General Overview Objectives for the Clinical and Field Experiences:

1. Perform patient assessment including developing a complete medical history and doing a complete physical assessment appropriate to the patient's problem/situation.
2. Participate as a productive and collaborative member of the health care team.
3. Follow CDC and OSHA guidelines on infection control using Universal Precautions.
4. Deal in caring and professional manner with patients and families during a time of stress.
5. Perform with correct technique peripheral intravenous insertions and administration of fluids.
6. Correctly prepare, administer and document intramuscular, subcutaneous, intravenous and endotracheal medications according to those drugs listed in protocol (MPD Approved, ACLS, NRP, PALS).
7. Record and correctly interpret electrocardiograms.
8. Correctly draw venous blood samples and appropriately label samples when necessary.
9. Correctly perform endotracheal intubation if given the opportunity.
10. Assist in appropriate roles (according to the student's skills and experience) in cases of cardiac arrest.
11. Demonstrate knowledge and skills in the use of the defibrillator and correct application of therapy.

Overall Learning Outcome:

At the completion of the clinical and field experiences, the paramedic student will be able to: use the appropriate techniques to obtain a medical history from a patient and to integrate the principles of history taking and techniques of physical exam to perform a patient assessment and determine and execute an appropriate course of treatment.

Cognitive Objectives:

At the completion of the clinical and field experiences, the paramedic student will be able to:

1. Describe the structure and purpose of a health history.
2. Describe how to obtain a comprehensive health history.
3. List the components of a comprehensive history of an adult patient
4. Discuss common mechanisms of injury/ nature of illness.
5. Predict patterns of injury based on mechanism of injury.
6. Summarize the reasons for forming a general impression of the patient.
7. Discuss methods of assessing mental status.
8. Categorize levels of consciousness in the adult, infant and child.
9. Differentiate between assessing the altered mental status in the adult, child and infant patient.
10. Discuss methods of assessing the airway in the adult, child and infant patient.
11. Describe methods used for assessing if a patient is breathing.
12. Differentiate between a patient with adequate and inadequate minute ventilation.
13. Distinguish between methods of assessing breathing in the adult, child and infant patient.
14. Compare the methods of providing airway care to the adult, child and infant patient.
15. Describe the methods used to locate and assess a pulse.
16. Differentiate between locating and assessing a pulse in an adult, child and infant patient.
17. Discuss the need for assessing the patient for external bleeding.
18. Describe normal and abnormal findings when assessing skin color, temperature and condition.

19. Describe the evaluation of patient's perfusion status based on findings in the initial assessment.
20. Describe orthostatic vital signs and evaluate their usefulness in assessing a patient in shock.
21. Apply the techniques of physical examination to the medical patient.
22. Differentiate between the assessment that is performed for a patient who is unresponsive or has an altered mental status and other medical patients requiring assessment.
23. Apply the techniques of physical examination to the trauma patient.
24. Describe the areas included in the rapid trauma assessment and discuss what should be evaluated.
25. Discuss the reason for performing a focused history and physical exam.
26. Describe when and why a detailed physical examination is necessary.
27. Discuss the components of the detailed physical exam in relation to the techniques of examination.
28. State the areas of the body that are evaluated during the detailed physical exam.
29. Explain what additional care should be provided while performing the detailed physical exam.
30. Distinguish between the detailed physical exam that is performed on a trauma patient and that of the medical patient.
31. Differentiate patients requiring a detailed physical exam from those who do not.
32. Discuss the reasons for repeating the initial assessment as part of the on-going assessment.
33. Describe the components of the on-going assessment and trending of assessment components.

Affective Objectives:

At the completion of the clinical and field experiences, the paramedic student will be able to:

1. Demonstrate the importance of empathy when obtaining a health history.
2. Demonstrate the importance of confidentiality when obtaining a health history.
3. Explain the importance of forming a general impression of the patient.
4. Explain the value of performing an initial assessment.
5. Demonstrate a caring attitude when performing an initial assessment.
6. Recognize and respect the feelings that patients might experience during assessment; Attend to the feelings that patients with medical conditions might be experiencing.
7. Value the need for maintaining a professional caring attitude when performing a focused history and physical examination.
8. Explain the rationale for the feelings that these patients might be experiencing.
9. Demonstrate a caring attitude when performing a detailed physical examination.
10. Explain the value of performing an on-going assessment.
11. Explain the value of trending assessment components to other health professionals who assume care of the patient.

Psychomotor Objectives:

At the completion of the clinical and field experiences, the paramedic student will be able to:

1. Demonstrate the techniques for assessing mental status.
2. Demonstrate the techniques for assessing the airway.
3. Demonstrate the techniques for assessing if the patient is breathing.
4. Demonstrate the techniques for assessing if the patient has a pulse.
5. Demonstrate the techniques for assessing the patient for external bleeding.
6. Demonstrate the techniques for assessing the patient's skin color, temperature, and condition.
7. Demonstrate the ability to prioritize patients.
8. Using the techniques of examination, demonstrate the assessment of a medical patient.
9. Demonstrate the patient care skills that should be used to assist with a patient who is responsive with no known history.
10. Demonstrate the patient care skills that should be used to assist with a patient who is unresponsive or has an altered mental status.
11. Perform a focused history and physical exam of the medical patient.

12. Using the techniques of physical examination, demonstrate the assessment of a trauma patient.
13. Demonstrate the rapid trauma assessment used to assess a patient based on mechanism of injury.
14. Perform a focused history and physical exam on a non-critically injured patient.

Field (Ambulance) Experience

During the field experience the student should have the opportunity to practice under direct supervision of a field preceptor and demonstrate proficiency for each of the following outcome objectives to the satisfaction of the MPD:

1. Perform a competent and comprehensive assessment on pediatric, adult, and geriatric patients.
2. Safely administer medications.
3. Manage the pharmacology of resuscitation and understand the risks of emergency medications, including those appropriate for cardiac arrest.
4. Perform endotracheal intubation.
5. Safely gain venous access.
6. The ability to effectively ventilate a patient.
7. The ability of safely and effectively establish a central line (upon paramedic certification, must have county MPD approval).
8. Perform comprehensive assessments on cardiac patients.
9. Perform comprehensive assessments on trauma patients.
10. Perform comprehensive assessments on medical patients.
11. The student will gain experience and demonstrate appropriate skills in:
    a. Recognizing their personal responsibilities to their own safety and protection.
    b. Removal of a patient from all types of vehicles and buildings at the scene of accidents and disasters.
    c. Taking the personal patient history.
    d. Recognizing the primary complaint of the patient.
    e. Being able to do a patient assessment on scene and evaluate the patient assessment.
    f. Identifying and dealing with safety hazards on the scene.
    g. Planning the treatment and transportation of the patient from the scene.
    h. Identifying and implement emergency management skills required to treat the patient at the scene.
12. The student will gain communication skills enabling them to:
    a. Communicate with patients in various situations.
    b. Communicate the information gained from the scene and the patient to the hospital and medical personnel.

Clinical (Hospital) Experience

Emergency Department:

The Primary Goal of the clinical training in the Emergency Department is to have the student observe and then begin developing more detailed history taking and physical assessment skills appropriate to the scope of paramedic practice.

1. Secondary objectives are for the student:
    a. To have exposure to the variety of patients being cared for in the emergency department to strengthen their understanding of health complaints and observe the application of history taking and physical examinations.
    b. With clearance of the program director, to be able to perform certain skills such as: IV starts,

IM and SQ injections and intubations which are at the discretion of and under direct supervision of the ED staff.

Critical Care Unit:
During the experience in the Critical Care Unit, the student should have the opportunity to practice under direct supervision and demonstrate proficiency and at the discretion of the supervising staff.

1. Students will gain experience and demonstrate appropriate skills in the following:
    a. Documentation of treatments, procedures, assessments performed by the students.
    b. Performing neurological examinations and providing appropriate treatment of patients with altered mental status.
    c. Caring communication skills in notifying a family member(s) of a death.
    d. Observing the effects of inotropic medications.
    e. Assessing heart and lung sounds and abdominal assessments.
    f. Demonstrate appropriate treatment of cardiac arrhythmias according to clinical scenario.
    g. Calculations and administration of titrated IV medications.
    h. Develop skills in the assessment of pain and appropriate treatment.
    i. Demonstrate correct resuscitation skills based on ACLS protocols.
    j. Demonstrate appropriate application and use of airway/oxygen adjuncts.
2. Gain exposure and demonstrate knowledge concerning assessment and treatment of patients with:
    a. Neurological disease/injury.
    b. Cardiovascular disease/injury.
    c. Pulmonary disease/injury.
    d. Renal disease/injury.
    e. Hepatic disease/injury.
    f. Multiple system disease/injury/trauma.

Operating Room:
During the experience in the Operating Room, the student should have the opportunity to practice and observe under direct supervision and demonstrate proficiency for each of the following:

1. The student will gain experience and demonstrate appropriate skills in:
    a. Using sterile technique.
    b. Seeing living organs/blood.
    c. Administering IM injections.
    d. Starting IVs.
    e. Interpreting EKG rhythms
    f. Treating arrhythmias.
    g. Recognizing the signs of shock.
    h. Treating shock.
    i. Resuscitation.
    j. Intubating an adult.
    k. Intubating a child if given the opportunity.
    l. Using airway/oxygen adjuncts.
2. The student will be able to describe the operation they observed and the reason why it was performed.

Pediatric Department:
During the experience in the Pediatrics Department, the student should have the opportunity to practice under direct supervision and demonstrate proficiency for each of the following:
The student will gain experience and demonstrate appropriate skills in:

1. Communicating with the patients and the patient's family.
2. Measuring vital signs:

   a. Normal ranges of hearts rate for different age groups.
   b. Normal ranges of respiratory rate for different age groups.
3. Assessing and treating patients of different ages for/with:
   a. Asthma.
   b. Epiglottitis.
   c. Child abuse.
   d. Fever.
   e. Pneumonia.
   f. Head injury.
   g. Multi-system trauma.
   h. Septicemia.
4. Starting IV's.
5. Using airway/oxygen adjuncts with children.
6. Resuscitation.
7. Recognizing hypoxia.
8. Using sterile techniques.
9. Dealing with families in times of stress.
10. Dealing with a frightened patient.
11. Understanding the typical course of a hospital stay.
12. Calculating pediatric drug dosages.
13. Using CDC guidelines for body fluids.
14. Documenting treatments, assessments and procedures.

Respiratory Therapy:
During the experience with the Respiratory Therapy staff, the student should have the opportunity to practice under direct supervision and demonstrate proficiency in each of the following:
1. Perform a pulmonary and chest assessment evaluating the symmetry, use of accessory muscles, presence or absence of paradoxical motion and subcutaneous emphysema.
2. Identify via auscultation of the lungs normal breath sounds and abnormal breath sound.
3. Perform the correct assemble of a nebulizer and measured dose inhaler.
4. Accurately select, measure and administered medication used in a nebulizer treatment.
5. Demonstrate appropriate application, interpretation and troubleshooting pulse oximetery.
6. Correctly measure and interpret peak expiratory flow rate.
7. Perform correct oropharyngeal and/or nasopharyngeal and/or endotracheal suctioning.
8. Observe and practice the securing techniques and equipment for endotracheal and nasotracheal tubes.
9. If opportunity is available, demonstrated the correct administration of transtracheal medications.

OB Department:
During the experience in the OB Department, the student should have the opportunity to practice under direct supervision and demonstrate proficiency for each of the following:
The student will gain experience and demonstrate/observe appropriate skills in:
1. Communicating effectively with a patient and the patient's family.
2. Assessing and treating a pregnant patient for/with:
   a. Pre-eclampsia and / or eclampsia.
   b. Hemorrhage.
   c. Placenta abruption.
   d. Prolapsed cord.
   e. Precipitous birth.
   f. Septicemia.
3. Delivering a baby:
   a. Doing accurate APGARs.

   b. Caring for a newborn.
   c. Stimulating a newborn.
   d. Resuscitation of a newborn.
   e. Participating as a member of the health care team.
4. Starting IVs:
   a. Giving fluid challenges.
5. Massaging the uterus.
6. Recognizing the signs and symptoms of shock.
7. Administering IM and SQ injections.
8. Assessing a newborn:
   a. Heart rate.
   b. Respiratory rate/lung sounds.
9. Assessing an infant:
   a. Heart rate.
   b. Respiratory rate/lung sounds.
10. Utilizing sterile technique.
11. Regulating IV flow rates.
12. Recognizing signs and symptoms of imminent delivery.
13. Delivering the placenta.
14. Using CDC body fluid precautions.
15. Using oxygen adjuncts.
16. Documenting all procedures, treatments, and medications.
17. Observing different cultures' childbirth expectations.
18. Handling a newborn and infant.
19. The student will be able to describe a Caesarean birth.
20. The student will be able to describe the effects various analgesics have on the mother and baby.
21. The student will be able to describe various methods of pain control used during labor.
22. The student will be able to describe the indications, contraindications, dosage, and side effects of Pitocin, magnesium sulfate, and terbutaline.

Intubations / Airway Management:
All intubations must be performed on patients - NO VOLUNTEERS
During the experience in the Intubation shifts, the student should have the opportunity to practice under direct supervision and demonstrate proficiency for each of the following:
The student will gain experience and demonstrate appropriate skills in:
1. Identifying the anatomy of the upper airway.
2. Being able to describe the functions of the upper airway.
3. Knowing the various ways the upper airway may be obstructed.
4. Knowing the steps required in assessment of the airway.
5. Knowing the position for the jaw in intubations.
6. The student will be able to recognize the physical changes in the body when the airway has been established.
7. The student will be able to identify breath sounds.
8. Given a patient with an airway disorder, the student will be able to choose the appropriate oxygen delivery devise.
9. The student will gain experience and skill in the management of the airway of an unconscious, paralyzed patient.

Intravenous Therapy:
This is a skill mastered by progressive practice and guidance by a skilled practitioner. During the experience with the IV Therapy staff, the student should have the opportunity to practice under the direct supervision and demonstrate proficiency in each of the following:

1. Assembles the necessary equipment to initiate intravenous therapy, appropriate to the person and the orders by the physicians, including:
    a. IV solution.
    b. Administration set.
    c. IV catheter.
    d. Prep supplies.
    e. Securing and dressing supplies.
    f. Labeling supplies.
2. Maintains sterile technique and universal precautions throughout the procedure.
3. Learns and follows the specific institutions policies related to intravenous therapy.
4. Establishes rapport with the patient and when appropriate significant others.
5. Identified appropriate venous canalization sites.
6. Consistently completes these general steps in initiating of an IV line:
    a. Applies the tourniquet and selects a suitable vein.
    b. Preps the site with anti-bacterial solution.
    c. Correctly insets the IV catheter into the vein maintaining sterility.
    d. Withdraws blood if needed.
    e. Connects IV tubing to catheter maintaining sterility.
    f. Turns IV line o the flush catheter and confirm correctly placement.
    g. Secured the site and tubing.
    h. Accurately regulates the infusion rate and labels the IV bag.
    i. Documents procedure in the appropriate manner on the patient's medical record.
    j. Expresses appreciation and gratitude to the patient.

Behavioral and Psychiatric Experience:
The paramedic student will be able to describe and demonstrate safe, empathetic competence in caring for patients with behavioral emergencies. At the completion of clinical rotation, the paramedic student will be able to:

1. Distinguish between normal and abnormal behavior.
2. Define and recognize a behavioral emergency.
3. Discuss the factors that may alter the behavior or emotional status of an ill or injured individual.
4. Describe the medical legal considerations for management of emotionally disturbed patients.
5. Describe the overt behaviors associated with behavioral and psychiatric disorders.
6. Describe and demonstrate the entry level skills in verbal techniques useful in managing the emotionally disturbed patient.
7. List the reasons for taking appropriate measures to ensure the safety of the patient, paramedic and others.
8. Describe the circumstances when relatives, bystanders and others should be removed from the scene.
9. Describe the techniques that facilitate the systematic gathering of information from the disturbed patient.
10. Identify techniques for physical assessment in a patient with behavioral problems.
11. Describe methods of restraint that may be necessary in managing the emotionally disturbed patient.
12. List the behaviors that may be seen indicating that patient may be at risk for suicide.
13. Differentiate between the various behavioral and psychiatric disorders based on the assessment and history.
14. Advocate for empathetic and respectful treatment for individuals experiencing behavioral emergencies.
15. Demonstrate safe techniques for managing and restraining a violent patient.

Appendix A: Patient Care Report Instruction Manual

EMS Paramedicine Program

Central Washington University
2016-2018 Academic Year

Patient Care Report Instruction Manual

Professor Dorothy Purser, CWU Paramedic Program Cofounder

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I. INTRODUCTION

A. Purpose of manual

This manual presents the ***only approved format*** for writing patient care report (PCR) or electronic patient care report (ePCR) narratives while you are enrolled in the EMS Paramedicine Program. While there are multiple accepted PCR formats within the global medical community; there is only one accepted format within the EMS Paramedicine Program at Central Washington University. The details of the guidelines are outlined within the following pages.

Every PCR you submit is meticulously reviewed by one of the program instructors. This review process is frustrating and very time consuming when the PCR is not clearly and properly written. If any of your submitted PCR(s) do not follow the approved CWU EMS Paramedicine Program format and standards it shall be returned to you to be rewritten until it meets our standards and approval. Therefore, this manual shall serve as your reference manual when preparing PCR(s) for patient contact credit throughout your training. Additionally, should any of your preceptors insist that you follow a different format/approach to PCR writing you shall show them your copy of this manual and advise that you must follow the standards outlined herein.

The PCR is meant to benefit many parties such as: administrators, researchers, quality improvement committees, planners, yourself (protection against civil ligation), courts (criminal matters), but mainly is to benefit the patient and the medical staff in their pursuit of treatment and therapy. Therefore, the PCR must be written in a standardized manner that is legible, understandable, and comprehensive yet concise, so that the medical staff has no diffuculty comprehending and reading it. The standardized format (SOAP format) presented in this manual is what the doctors and nurses use in this region and therefore facilatates ease of reading for them. Essentially, this is how the professionals do it and if we want to be considered professional we need to follow their example.

When writing a PCR you should strive to provide as perfect and complete a record as possible not only to benefit the patient but also to demonstrate that as a paramedic your communication is invaluable in assisting the EMS health care team to expertly manage the patient. You must appreciate that in some situations the health care team *absolutely replies* on your PCR to assist them in potentially life saving decisions. Also, remember that often many health care team members will read your report, such as the ED and critical nurses, ED physician, hospital intensive care physican, specialty physicians (e.g., cardiologist, pulmonaloglist, neurologist, etc.) and finally the patient's primary care physician. Therefore, it is crucial that you give your undivided attention and best effort when writing the PCR. Additionally, if your PCR is written in a complete and clearly organized professional manner your PCR is likely to have an impact on your credibility and professional standing within your local medical community.

B. Goals of the PCR

The PCR serves to communicate potentially vital information concerning the patient's present and past history (medical, family, and social as appropriate), current physical exam, prehospital treatment, as well as, any response or lack thereof to treatment that very well could impact the patient's diagnosis, well-being and hospital treatment. PCR(s) also provide for a permanent record that contributes to the patient's overall history allowing for a comparative baseline by the health care team. The PCR will be invaluable for your recollection of the incident years later should the need arise, therefore you must pay great emphasis on attention to detail and accuracy.

The PCR, if properly prepared, often helps protect against litigation, but if hastily and sloppily done can potentially be a boon to a plaintiff's attorney lending ammunition to use against you despite no actual wrong doing on your part. A sloppy, poorly written report demonstrates you provided inferior, flawed and/or careless patient care.

Lastly, the PCR allows for quality assurance monitoring and a source of medical statistics for medical research. *But never forget, while report writing and record-keeping duties are essential for the prehospital professional, they must **never** come before actual patient care!*

II. MEDICAL-LEGAL SIGNIFICANCE

A. Legal Document

The PCR is recognized as a legal record of great weight. So much is the significance given this record the courts have recognized the *Past Recollection Recorded Doctrine*. This doctrine simply states that the medical record can be entered into evidence and will stand as your entire testimony on the matter should you have no recollection of said incident. This doctrine essentially removes any real cross-examination of you, the witness; this is unprecedented in law.

B. Malpractice Protection

As stated earlier, the PCR can be the EMT‘s best ally or worst enemy concerning malpractice litigation. This is why it is so important that the record follow all of the essential qualities outlined later in this manual. A well-written PCR often disuades civil action against you, whereas a poorly written PCR often facilatates and encourages civil action. Therefore, you should always write every PCR as if it is a document that may unexpectedly reappear at a future date as evidence in an administrative or legal proceeding. Also, never forget that it’s crucial that the report provide a complete record of ***all your care*** rendered--the absence of documentation raises a presumption of failure to perform. The axiom ***If it's not written down - It didn't happen*** applies here. The excuse, “But I actually did it, I just forgot to write it down.” most assuredly will not convince a jury you are telling the truth!

C. **Lawsuit Prevention**

It has been reported that *Patient refuses care/transport* and *patient left at the scene* incidents account for 50 to 90% of prehospital EMS lawsuits. Other incidents that prose a greater risk of litigation are when patients are intoxicated by drugs and or alcohol and when patients and family members are angry or unhappy about care provided or the incident disposition. These incidents deserve even greater vigilance concerning the PCR. Remember a patient or family member does not judge medical care on scientific merit, but rather on how they think they are being treated. Good public relations can go a long way in decreasing the likelihood of litigation.

D. **Confidentiality**

The Prehospital EMS Incident Record is a medicolegal document and therefore is confidential, and in Washington state is also priviliged communication. That means that sharing patient–health care provider communications with an unauthoried party is legally forbidden and could lead to criminal charges as well as civil libality. Should you inappropriately release this document or discuss its contents you may be held libel for invasion of the patient's privacy. Under no circumstances should you release a copy of this record to anyone other than the patient or their legal guardian except upon a bona fide court order or to the patient's representative (pt.'s lawyer) only with a signed (by the patient or legal guardian) notarized release form. You must never leave the PCR lying around where unauthorized persons can view it. Additionally, you may ***only*** discuss this record with persons who have a legitimate need to know.

III. ESSENTIALS OF DOCUMENTATION

When writing PCRs you strive for the following essentials of documentation: completeness, accuracy, objectivity, comprehensiveness, conciseness, legibility, as well as organized, unstandable, unaltered and timely.

A. **PreHospital PCR Elements**

Each PreHospital EMS Medical Incident Report should contain at least the following basic elements: The reporting agency name/designation and incident number, incident date and dispatch times, incident location address, patient's full name, address, phone number, age and date of birth, patient's private physician, flow chart, SOAP narrative, and signature and title of the health care provider completing the report.

B. **Accurate**

The record must be a truthful accurate chronology/description of the incident and examination. Do not embellish the record under any circumstance, for inaccurate or exxgaerated information very well could have deleterious effects to the patient. Remember, the record is used by the hospital medical staff to antipapate the patient’s likely disorder and to evaluate the effectiveness of your and their therapy. Should you exaggerate you may be the cause of the patient receiving an uneccessary painful and potentionally dangerous procedure. Also, pay particular attention to

the correct anatomical locations of pertinent positive and negative signs. It suggests inattention and substandard care when you write left leg deformity when it was actually the patient's right leg that had the deformity and was fractured.

C. **Objectivity**

Be especially careful to avoid subjective terminology when describing the patient such as *hop head, drunk, alcoholic, druggie,* etc., for these terms could be construed as slanderous/libelous. Avoid placing blame for any potential litigious circumstances, because if you're wrong a slander/libel suit could be brought against you. Instead, site direct quotes of the patient and witnesses that help clarify the circumstances. Describe the factors and behaviors that led you to your impressions. It is very possible the well-written but objective PCR will lead the reader to the same conclusion as you. Again, always leave any value judgements up to the conclusion of the reader.

D. **Concise**

Be as succinct as possible including ***only pertinent*** information. Avoid duplicating data so as to maintain the attention of the reader. Use as specific as descriptive terms as possible while avoiding generalizations. The above will encourage medical professionals to read your report in its entirety. Including impertinent and uneccessary data quickly loses the harried, busy ED physician and nurse.

E. **Comprehensive**

Include as much pertinent information as necessary to paint as clear a picture as possible for the medical staff. Again, the more comprehensive your report is, the better it will serve your recollection years later should the need arise. Shorthand notes are a good way to refresh your memory as well as reduce the likelihood you might overlook the inclusion of an important detail when you are preparing the narrative. However, a word of warning--do not include your shorthand notes with the patient's permanent record/PCR as they can easily be misinterpreted and come back to haunt you later.

F. **Understandable**

It's not necessary to use a lot of big five-dollar medical words to write a valuable, creditable report. Use only the terminology that you comprehend and only officially accepted medical abbreviations. It is paramount that you truly understand the definition of the medical terms you use on the PCR, not only for the benefit of the patient and medical staff, but also so you will not be embrassed or discredited should it be brought to your attention that you used the incorrect term.

G. **Legible**

It's important that other medical professionals are able to clearly and easily read and understand your report for the benefit of the patient. A sloppy, illegible report with many spelling errors not

only discredits you in the eyes of other medical professional, but it also may indicate to a jury/judge that your care was sloppy as well. Preferably, print neatly with a black ink pen (black ink photo copies clearer) while making sure that you are pressing hard enough so others can clearly read the back NCR copy.

H. Timeliness

Make every effort to complete your report as soon after the incident as possible. This will allow for the best recollection of the circumstances. The validity of your medical record is better if you can assure the record was completed in a timely manner. Remember, the hospital staff frequently relies on your report to refer to when there are questions as to what happened or what was done. I know for a fact that many physicians will not leave their patient's side in the ICU without having read the PCR. Yes, physicians really do read the PCR!

I. Organization

Use the currently accepted organizational SOAP format for your narrative section. This is the format that other medical professionals use, so they are very familiar with this format. This will encourage them to read your PCR, avoid confusion while reading the report, and facilitate location of information, as well as improve your professional standing and credibility.

J. Unaltered

Never fraudulently or otherwise alter the record in an attempt to protect yourself against litigation because there are very sophisticated forensic methods at detecting these alterations. If you make an error in your report don't erase or blackout the error because this can create suspicion that you are trying to hide something. Instead draw a single line through the error, make a notation of *error*, then date and initial the error, such as: ~~once~~ 10/30/06 JP twice everyday. This is the officially accepted way of correcting an error. If you forgot to include some important detail you can add it later by making a notation of addendum before the additional information; then date and initial the addendum.

K. Complete

Don't leave blank spaces that call for a response, such as allergies, because this can lead the reader to infer that you didn't bother asking and thus discrediting you. Instead note "unknown" or "unattainable."

IV. REPORT FORMAT (SOAP)

A. Subjective

The subjective section includes only information perceived or experienced by the patient or reported to you by bystanders, witenesses, friends, or family members. Some other person has to tell you this information; otherwise, you probably would not know it. Basically it's the who, what, when, where, how and why. It should include the patient's chief complaint and associated symptoms along with any pertinent positive and/or negative symptoms. Include all pertinent past medical history (family & social if pertinent) as well as current medications (prescription, OTC, herbal) and any drug allergies. The SAMPLE mnemonic can be helpful to jog your memory as to what should be included and should act as your mental checklist to assure that you included the necessary information. SAMPLE stands for Symptoms, Allergies, Medications, Past medical history, Last meal or drink, and Events preceding the incident. Remember, subjective information is the information that you cannot see (inspect), hear (auscultate/percuss), feel (palpate), smell, taste or measure.

B. Objective

In the medical context "objective" means: pertaining to conditions of the body perceived by another. This is what you can measure, e.g., BP, see, hear, smell, feel and possibly, but hopefully not, taste. The objective section should include a scene description, mechanism of injury, initial baseline vital signs and level of consciousness (BLSCPR), patient exam findings (pertinent positive and negative signs). A good format is to record your exam details in a head to toe list. Each section or body region needs its own line (see examples), because moving to the next line helps the reader with the mental switch from, e.g., the head and neck to the jump to the chest region.

C. Assessment

This is what you actually think is wrong with the patient. It is based solely on the subjective and objective information that you gathered. Your assessment must logically provide a basis for your plan. Remember this is not a medicolegal diagnosis; only MD, DO, NP, and PA are allowed legal diagnoses. The use of the phrase "rule out" simply states that what ever you write following that phrase is what you really think is causing the problem and you are recommending that the physician rule it out as not the cause. It is in no way legal and forces the physician to prove that your "rule out" assessment is wrong, especially if they have come to a different diagnosis. If you have absolutely no idea what is causing the complaint or condition, then you simply state the chief complaint followed by "unknown cause" or etiology.

D. Plan

This is what you have done for the patient. It should include all the actions you have taken, e.g., called paramedics, and all treatment you have rendered no matter how trivial that treatment may seem. It is also worthwhile to note any clinical change of the patient or response of the patient to treatment. It ***shall not*** include any exam details such as ABC, EKG, glucometry, etc., as these

are not treatments but are examinations. For example, it would be appropriate to note “placed patient in the recovery and closely monitored their airway guarding against aspriation during transport (should the patient’s airway protective reflexed be comprised) ” but it is inappropriate to write “ABC, vitals, head–to–toe, EKG…”

V. SUMMARY

Prehospital EMS Incident Reports are valuable medicolegal documents that, when properly completed, benefit the health care team, the prehospital provider, and most importantly, the patient!

Patient Care Report Narratives

Case Examples

1. **Non-cardiac chest pain case**

Time	1615	1625	1635
Position	sitting	sitting	sitting
BP	170/90	164/86	162/84
Pulse	100 F & R	96 F & R	92 F & R
Resp. Rate	28 splinted	26 splinted	24 splinted
SPO2	94% rm air	96%	97%
GCS	15	15	15
ECG	NSR	NSR	NSR
Pain Severity	6	3	3
ETCO2	NC	NC	NC
O2	Rm air	4 lpmnc	4 lpmnc

S: Called to see 58 y. o. male c/o upper right sharp chest pain. Denies recent fever/chills, productive cough, increased dyspnea (from normal), orthopnea, diaphoresis, dizziness, weakness, nausea/vomiting, palpitations, or syncope. Pt. expresses concern that he may be having a heart attack. Onset during a violent coughing spell approximately 20 minutes prior to 911 call. Admits pain increases with deep inspiration, cough, and upon movement. Pain decreases with sitting perfectly motionless and with shallow inspiration. Severity 6 at worst and 3 while sitting still. Quality is described as sharp stabbing like that seizes the patient's chest from further inspiration. Reports location as upper right chest between ICS 2–4 approximately the size of 50-cent piece, and non–radiating. Denies any similar chest pain episodes previous (prior).PMHx: COPD x 8yrs & HTN.Smokes 1-1/2 ppd last 35 years. Meds: nebulized albuterol 2.5 mg and atrovent 0.5 mg q 5 hrs, HCTZ. Allergy to Lisinapril.

O: Find pt. sitting but slumped on sofa remains very still appears stated age with thin tall build.
VS: R170/90 L 166/92, 100 F & R, 28 splinted shallow but unlabored, SpO2=94% FiO2=.21, Skin WPD, Cap Refill $\leq$ 2 sec., LOC: A & O x 5 GCS=15
HEENT: PERRLA, C 2–12 intact, neck supple, no JVD, = carotids, no bruits, trachea midline
Chest: barrel appearance, point specific tenderness RU mid claviclar between ICS 2–4 associated with grimace to palpation, otherwise symmetrical, lungs clear, good exchange with slight decrease RU apex area, no Gallops or Murmurs (G/M), pt. uses two fingers to point out CP
ABD: soft, nontender, no masses, = femorals/radials
Extremities: strong equal motor, intact sensation all 4, no pedal edema
EKG: NSR no ectopy 12 L no S–T changes

A: Chest Pain R/O noncardiac origin Poss. pneumothorax

P: Position of comfort (sitting), oxygen 4 lpmnc, IV 18 gauge R FA NaCltko 1 L bag, calm & reassure, transport to xyz hospital non-emergent, stable enroute, pt. care transfer/report direct to Nurse Feelgood, upon departure rails up.

2. Trauma case

Time	1615	1625	1635
Position	sitting	sitting	sitting
BP	170/90	164/86	162/84
Pulse	100 F & R	96 F & R	92 F & R
Resp. Rate	28 splinted	26 splinted	24 splinted
SPO2	94% rm air	96%	97%
GCS	15	15	15
ECG	NSR	NSR	NSR
Pain Severity	6	3	3
ETCO2	NC	NC	NC
O2	RmA	4 lpmnc	4 lpmnc
Glucose (BGL)		112 mg/dL	

S: Called to a reported 2 car head-on MVC on SR 2 (speed limit 60 mph) with one fatality opposite auto from pt. Witnesses' report observing pt's auto weaving crossing center line frequently and varying speeds from 25 mph to 85 mph. Witnesses report pt. lone occupant driver of auto (late model Japanese car). Witnesses report pt. seemed unconscious upon arrival at driver's door with rapid deep snoring respirations, strong odor of alcohol upon opening driver's door. Witnesses also state pt's auto crossed over centerline into oncoming traffic at high rate of speed striking oncoming auto head on. Witnesses report pt. not wearing seat/shoulder belt but air bags deployed. Pt. is unresponsive & noncommunicative so CC &PMHx unattainable. Unk.PMHx, allergies & meds.

O: Scene: Find pt. slumped in driver's seat without seat belt, deflated steering column airbag, strong odor of ETOH about pt., Pt's auto facing wrong direction in lane approximately 30 ft from other auto also with major front end damage. Several empty beer cans inside pt's auto.
MOI: major front-end damage, fluids leaking, steering column bent with moderate deformity of steering wheel, windshield broken, major interior damage (see attached pictures).
Baseline VS: 80/40, 128 thready but regular, 28 labored regular rhythm, SpO2=84% FiO2=.21, Skin cool pale diaphoretic, Cap Refill $\underline{\geq}$ 3 sec., LOC: Unresponsive GCS=6 E=1 V=1 M=4
HEENT: 4 cm cut mid forehead with assoc. hematoma, Pupils dilated at 7mm equal slowly reactive, roving eye movements, blood from nostrils, ears clear, neck supple without crepitus, JV flat, = weak carotids, oral cavity clear, trachea mid
Chest: large contusion R lower with crepitus on palp, asymmetrical paradoxical movement, poor exchange with significant decrease R side, lungs otherwise clear, no G or M, no open wound obvious
ABD: firm, distended, low moan upon palp RUQ, no masses, = distant femorals, pelvis symmetrical without deformity or instability, no blood visible at meatus
Extremities: Flaccid with shortened deformed L mid-thigh, crepitus upon palp,
EKG: NSR no ectopy 12 L no S–T changes

A: Critical multi-system trauma and assoc. shock, flail chest, intra-abdominal injury, obvious L femur closed Fx,

P: Rapid extrication, O2 BVM PPV, CC/BB immobilization, begin transport to xyz trauma center, IV bilatannecubitals 14 g RL wide open, blood draw and blood run, 7 mg Etomidate IVP, 100 mg Anectine IVP, Oral ET intubation 8 mm 23 mm @ teeth, equal lung sounds without epigastric sounds after ETI with PPV BVET, ETCO2 43 mmhg initially, symmetrical chest rise, 10 mg vecronium IVP, ventilation to ETCO2 35 mmhg, emergent (code red or code 3) transport, trauma band # 123456, Trauma alert notification, arrival transfer care/report direct to Trauma surgeon/ED physician

3. DOA example:

Time	0715	0720	
Position	supine	supine	
BP	0/0	0/0	
Pulse	0	0	
Resp. Rate	0	0	
SPO2	64%	62%	
GCS	3	3	
ECG	asystole	asystole	
Pain severity	NA	NA	
ETCO2	NC	NC	

S: Called by husband to see 84 y.o. female who was found by husband unarousable in bed this morning upon his awakening (approx. 07:00). Spouse believed patient was dead because she did not appear to be breathing to him. He called 911 immediately upon realizing pt. was apneic & unresponsive. Dispatcher offered CPR instructional assistance but spouse refused because he believed that she did not want "artificial resuscitation." Husband denies any advance directives, EMS-No CPR or POLST prepared. Per Aid 42-crew pt. found supine in bed unresponsive, apneic, and pulseless but still warm (pt. under an electric blanket set at level 6 setting). Aid crew placed pt. supine on floor and initiated CPR and AED. AED advised three consecutive no shocks advised. CPR continued until our arrival (Medic 11) approximately 5 minutes after aid crew's arrival. Husband advised pt. has past Hx. of chronic atrial fibrillation, CVA, COPD and CHF. Husband advises pt. has weakened considerably over the last two wks. and has required more frequent breathing treatments. Meds: nebulized albuterol 2.5 mg and atrovent 0.5 mg q 5 hrs., prednisone 100 mg qd, Lasix 80 mg. qd., Lanoxin 0.5 mg qd., diltizem 0.35 mg qd. Allergic to asa only.

O: Find pt. with ongoing CPR (manual chest compressions & PPV BVM 15 LPM O2) via Aid 42 crew, confirmed pt. unresponsive, apneic with no emesis or frothy sputum apparent, femoral pulses palpable with external chest compressions, no pulse without external chest compressions, ECG asystole (see attached), Skin warm dry pale without peripheral or central cyanosis, pupils dilated at 7 mm equal unreactive to light, neck stiff (non supple), lungs equal with scattered crackles bilat otherwise good exchange with PPV BVM, Abd: scaffod otherwise unremarkable, upper & lower extremities flaccid except for hands and fingers stiff like rigor mortis, grossly obvious dependent livor mortis posterior aspect of pt. EKG: asystole.

A: DOA, signs and hx. indicate resuscitation inappropriate

P: resuscitative efforts ceased, cleaned pt's face and placed her back in bed in a comfortable appearing position, contacted ME (name inserted), NJA # 2006-1422, police not contacted as deemed unnecessary, requested chaplain ETA 20 min., informed husband of wife's death, husband requested that we contact his son and inform him of his mother's death, which we did. Son advised he would come to the scene immediately with ETA of 35 minutes, Contacted Green's funeral home per husband's request their ETA 45 minutes, Contacted Dr. Michaels (pt's private physician) and informed him of pt's death and he advised that he would sign the death certificate. Husband requested that he be allowed to

view wife to say goodbye to her. Prior to husband viewing deceased, advised husband that wife will feel cold and lack any color and that parts of her body will have rigor. Informed Chaplin of all the preceding and introduced spouse to Chaplin. Left husband and deceased with chaplain awaiting Green's Funeral Home arrival. Son had not arrived before our departure

4. Abdominal Pain Example:

Time	20:30	20:33	20:43	20:50	21:00
Position	Sitting	Sitting	Semi-reclined	Semi-reclined	Semi-reclined
BP	R170/110	L166/106	140/96	132/92	128/84
Pulse	104 F & R	98 F & R	88 F & R	92 F & R	86 F & R
R/R	16	16	14	16	14
GCS	15	15	15	15	15
EKG	NSR	NSR	NSR	NSR	NSR
SaO2%	96 @ RM	97 @ 4 lpm O2	98 @ 4 lpm O2	99 @ 4 lpm O2	99 @ 4 lpm O2
Severity	8	5	5	4	2
ASA po			325 mg		
NTG sl		0.8mg	0.4mg		0.4mg
MSO4			4 mg IV	2 mg IV	2 mg IV

S: 58 yo female c/o mid abdominal constant pain with increasing severity over last 2 hrs. severity now 4/10. Pain onset approx. one hr. after awakening and arising. Pt. last oral intake 14 hours ago at supper. Pain described as dull ache with occasional irregular waves of severe sharp intense pain rated at 10/10 with brief duration of approx. 30 seconds. No change to pain with position or breathing. Pain isolated around umbilicus approx. size of pt's palm without radiation. Denies past similar pain, vaginal discharge, N/V, recent change of bowel movements/habits, melena, hematochezia, diarrhea or constipation. PMHx: total hysterectomy 5 yrs ago 2º uterine Ca, hypercholesterolemia. Family Hx: Mother/'father and all sibling still alive without significant Hx. Meds: Lipitor 40 mg qd. & Allergy: PCN

O: Find pt. supine in bed appearing uncomfortable holding abdomen and legs triple flexed but does change position to fetal position and back again to supine frequently. A & O x 5 GCS=15

BL Vs: R130/80 L126/76 P104 F & R R/R 16 eupnea without splinting skin warm dry pink CR=2 seconds Rm SaO2=97%
HEENT: PERRLA, no JVD, =carotids, no bruits, C2–12 ok
Chest: nontender, lungs clear & equal with good exchange, no obvious G/M, NSR no ectopy
Abd: periumbilical low grade tenderness to deep palpation without rebound, otherwise soft & no masses
Ext: moving well, no pedal edema, =radials/femorals

A: Abdominal pain of unknown origin/etiology

P: O2 @ 4 lpm via nc, calm & reassure, consult Med Control,
IV 18 g NaCl- TKO R FA, medications per flow chart, Medic 231 transport XYZ Hospital, stable enroute, transfer care to Nurse Booth, our departure pt. on ED gunnery with rails up and staff attending.

5. Acute Coronary Syndrome Example:

Time	20:30	20:33	20:43	20:50	21:00
Position	Sitting	Sitting	Semi-reclined	Semi-reclined	Semi-reclined
BP	R170/110	L166/106	140/96	132/92	128/84
Pulse	104 F & R	98 F & R	88 F & R	92 F & R	86 F & R
R/R	16	16	14	16	14
GCS	15	15	15	15	15
EKG	NSR	NSR	NSR	NSR	NSR
SaO2%	96 @ RM	97 @ 4 lpm O2	98 @ 4 lpm O2	99 @ 4 lpm O2	99 @ 4 lpm O2
Severity	8	5	5	4	2
ASA po			325 mg		
NTG sl		0.8mg	0.4mg		0.4mg
MSO4			4 mg IV	2 mg IV	2 mg IV

S: 78 yo male c/o sudden onset of chest discomfort while watching TV approx. 30 minutes prior to 911 call. Chest discomfort described as a dull pressure like ache across his mid anterior chest with radiation to left neck & jaw with severity of 7/10 at worst. Discomfort constant without change to breathing, position or movement. Pt. did note decrease in severity to 5/10 with NTG x 2 before EMS arrival. Admits to dyspnea, diaphoresis, weakness and slight nausea. Denies dizziness, orthopnea, palpitations, syncope or recent illness. PMHx of AMI 86, CABGx3 87, HTN, CHF, Hypothyroidism. Meds: ASA, Lanoxin, Nifedipine & Synthroid. NKDA

O: Find pt. slumped in chair appearing uncomfortable & weak but otherwise without acute distress. A & O x 5 GCS=15
BL Vs: R170/110 L166/106 P104 F & R R/R 16 eupnea skin cool pale clammy CR=2 seconds Rm SaO2=96%
HEENT: PERRLA, no JVD, =carotids, no bruits, C2–12 ok
Chest: nontender, lungs equal with good exchange fine crackles in bases bilat, no obvious G/M, Sinus rare uniformed PVC, ST elevation 2mm L II, III, AVF
Abd: soft nontender no masses
Ext: moving well, no pedal edema, =radials/femorals

A: Chest Pain/Dyspnea of cardiac origin R/O acute inferior MI

P: O2 @ 4 lpm via nc, calm & reassure, consult Med Control, notified ED of AMI pt. for cath lab
IV 18 g NaCl- TKO R FA, medications per flow chart, Medic 23 transport EHMC, stable enroute, met by ACS response team and J. Haynes, MD Cardiologist upon arrival

6. Drug Overdose Example:

Time	20:30	20:33	20:43	20:50	21:00
Position	Sitting	Sitting	Semi-reclined	Semi-reclined	Semi-reclined
BP	R170/110	L166/106	140/96	132/92	128/84
Pulse	104 F & R	98 F & R	88 F & R	92 F & R	86 F & R
R/R	16	16	14	16	14
GCS	15	15	15	15	15
EKG	NSR	NSR	NSR	NSR	NSR
SaO2%	96 @ RM	97 @ 4 lpm O2	98 @ 4 lpm O2	99 @ 4 lpm O2	99 @ 4 lpm O2
Severity	8	5	5	4	2
ASA po			325 mg		
NTG sl		0.8mg	0.4mg		0.4mg
MSO4			4 mg IV	2 mg IV	2 mg IV

S: 58 yo female c/o mid abdominal constant pain with increasing severity over last 2 hrs. severity now 4/10. Pain onset approx. one hr. after awakening and arising. Pt. last oral intake 14 hours ago at supper. Pain described as dull ache with occasional irregular waves of severe sharp intense pain rated at 10/10 with brief duration of approx. 30 seconds. No change to pain with position or breathing. Pain isolated around umbilicus approx. size of pt's palm without radiation. Denies past similar pain, vaginal discharge, N/V, recent change of bowel movements/habits, melena, hematochezia, diarrhea or constipation. PMHx: total hysterectomy 5 yrs ago 2º uterine CA, hypercholesterolemia. Family Hx: Mother/'father and all siblings still alive without significant Med Hx. Meds: Lipitor 40 mg qd. & Allergy: PCN

O: Find pt. supine in bed appearing uncomfortable holding abdomen and legs triple flexed but does change position to fetal position and back again to supine frequently. A & O x 5 GCS=15
BL Vs: R130/80 L126/76 P104 F & R R/R 16 eupnea without splinting skin warm dry pink CR=2 seconds Rm SaO2=97%
HEENT: PERRLA, no JVD, =carotids, no bruits, C2–12 ok
Chest: nontender, lungs clear & equal with good exchange, no obvious G/M, NSR no ectopy
Abd: periumbilical low grade tenderness to deep palpation without rebound, otherwise soft & no masses
Ext: moving well, no pedal edema, =radials/femorals

A: Abdominal pain of unknown origin/etiology

P: O2 @ 4 lpm via nc, calm & reassure, consult Med Control,
IV 18 g NaCl- TKO R FA, medications per flow chart, Medic 123 transport to XYZ Hospital, stable enroute, transfer care to Nurse Booth, our departure pt. on ED gunnery with rails up and staff attending.

Appendix B:

Program Forms

EMS Paramedicine Program

Absence Form

Student's Name:			Today's Date:
Location:		❑ Classroom ❑ Hospital ❑ Field	
Date Absent:			Time:

Reason for missing shift:

(note: a doctor's excuse must be attached in the event of illness)

Was the Clinical Coordinator notified?	❑ Yes ❑ No	
Was a faculty member notified?	❑ Yes ❑ No	
Who?		
Date notified:	Time:	

If a ride site or hospital, were they notified?	❑ Yes ❑ No	
Who was notified?		
Date notified:	Time:	

Student's Signature: _____

For Faculty Use Only

The shift is: ❑ Excused ❑ Unexcused
Notes:

Faculty Signature: _____ Date: _____

Central Washington University
EMS Paramedic Program

Incident Report

Name: _____ Date of Report: _____

Incident Type:
❑ Classroom ❑ Clinical ❑ Field ❑ Other

Nature of Incident:

_____

_____

_____

_____

_____

Notified:	
❑ Clinical Coordinator:	❑Faculty/Staff ❑Program Director
If Clinical, name of Site Contact:	

How? ❑ Cell phone ❑ Office phone ❑Email Time: _____ Date: _____

Other Details or Comments:

_____

_____

_____

_____

Received in EMS Office: Date: _____ Time: _____ By: _____

Note: If the incident involves Clinical or Field activities, the Clinical Coordinator must be notified at once. Otherwise, notify the appropriate faculty member as soon as possible. This form must be submitted to the Program Office to the Director within 24 hours of the incident.

CWU EMS Paramedicine Program
Skill Performance Assessment Form

Name: _____ Date: _____

❑ Team Leader ❑ Team Member ❑Medical Case ❑ Trauma Case

	Performance Parameter	Satisfactory?
Student performed appropriate skills in the scenario with competency		❑ Yes ❑ No
	Comments:	
Student participated effectively as a team member		❑ Yes ❑ No
	Comments:	
Student performed effectively as a team leader in directing the team		❑ Yes ❑ No
	Comments:	
Student performed effective problem-solving, decision-making, critical thinking, creative ingenuity, resource acquisition, and deductive reasoning		❑ Yes ❑ No
	Comments:	
Student demonstrated adequate cognitive abilities and psychomotor skills		❑ Yes ❑ No
	Comments:	
General Comments/Recommendations:		

Evaluator: _____ Need for Remediation: ❑ Yes ❑ No

CWU EMS Paramedicine Program
Skills Verification Checklist

Student: _____ Cohort Year: _____

Skill	Completed & Filed
History Taking and Physical Examination	
*Obtain a Patient History from an Alert and Oriented Patient	❑ Yes ❑ No
*Comprehensive Normal Adult Physical Assessment Techniques	❑ Yes ❑ No
*Comprehensive Normal Pediatric Physical Assessment Techniques	❑ Yes ❑ No
Airway, Oxygenation and Ventilation	
*Direct Orotracheal Intubation Adult	❑ Yes ❑ No
*Direct Orotracheal Intubation Pediatric	❑ Yes ❑ No
Nasotracheal Intubation Adult	❑ Yes ❑ No
Alternative Airway Device Adult (Combitube, LMA, King, Cobra, etc.	❑ Yes ❑ No
*Needle Cricothyrotomy (Percutaneous Translaryngeal Ventilation)	❑ Yes ❑ No
CPAP and PEEP	❑ Yes ❑ No
Trauma	
*Trauma Adult Physical Assessment	❑ Yes ❑ No
Trauma Endotracheal Intubation Adult	❑ Yes ❑ No
*Pleural Decompression (Needle Thoracostomy)	❑ Yes ❑ No
Medical	
*Medical and Cardiac Scenario Assessment	❑ Yes ❑ No
*Intravenous Therapy	❑ Yes ❑ No
*Intravenous Bolus Medication Administration	❑ Yes ❑ No
*Intravenous Piggyback Infusion	❑ Yes ❑ No
*Intraosseous Infusion	❑ Yes ❑ No
*Intramuscular and Subcutaneous Medication Administration	❑ Yes ❑ No
Intranasal Medication Administration	❑ Yes ❑ No
Inhaled Medication Administration	❑ Yes ❑ No
Glucometer	❑ Yes ❑ No
Cardiac	
12-lead ECG	❑ Yes ❑ No
*Synchronized Cardioversion	❑ Yes ❑ No
*Defibrillation (Unwitnessed Arrest)	❑ Yes ❑ No
*Transcutaneous Pacing	❑ Yes ❑ No
Obstetrics	
*Normal Delivery with Newborn Care	❑ Yes ❑ No
Abnormal Delivery with Newborn Care	❑ Yes ❑ No
SCENARIO LAB	**Completed & Filed**
Airway, Ventilation and Oxygenation	❑ Yes ❑ No
Trauma	❑ Yes ❑ No
Medical	❑ Yes ❑ No
Cardiac (Rhythm Disturbance)	❑ Yes ❑ No
Pediatric	❑ Yes ❑ No

All forms are complete and on file:

Signature: _____ date: _____

Appendix C:

Program Drug List

CWU EMS Paramedicine 2016 Drug List			
Generic	**Trade**	**Dosage**	**Comments**
acetaminophen	Liquid Tylenol	10-15 mg/kg	
acetylsalicylic acid	Aspirin	325mg p.o.	For antiplatelet activity
activated charcoal	Activated Charcoal	1-2 grams/kg	
adenosine	Adenocard	6 - 12 mg Rapid IVP	
adrenalin	Epinephrine	1 mg 1:10,000 q 5 min IV for CA/0.15 - 0.3 mg IM Anaphylaxis	1:1,000 solution may be used for allergic/ anaphylactic reactions
albuterol	Ventolin, Proventil	2.5 mg neb prn	
amiodarone	Cordarone, Pacerone	300 mg CA/150 mg IV for dysrhythmias Max 450 mg	
atropine sulfate		0.5 mg Rapid IV Push max 3 mg	
calcium chloride		500 mg to 1 gram	
diltiazem	Cardizem	0.15 - 0.35 mg/kg IV	
diphenhydramine	Benadryl	25-50 mg IM/IV	
dopamine HCl	Intropin	2-20 mcg/kg/min	
etomidate	Amidate	0.3 mg/kg IV	
fentanyl	Sublimaze, Duragesic	25 - 100 mcg	
furosemide	Lasix	1mg/kg or X 2 daily dose	
glucagon	GlucaGen	1 mg IM/IV for hypoglycemia 5-10 mg IV for Beta Blocker OD	
haloperidol	Haldol	5-10 mg IM for acute psychosis or combative behavior	Reported increased incident of Torsades de Pointes with IV use
hydromorphone	Dilaudid	1 – 2 mg IV/IM for analgesia	
heparin		5,000 units	
insulin (regular)	Regular Insulin	10 to 20 units for hyperkalemia	
ipratropium bromide	Atrovent	0.5 mg neb x 2 max	
ketamine	Katalar	1-2 mg/kg	RSI Induction ONLY
labetalol	Trandate	20 mg IV max 60 mg	
levalbuterol	Xopenex	0.63 mg to 1.25 mg via neb prn	
lidocaine	Xylocaine	0.5 - 1.5 mg/kg	25 mg for IO analgesia
lorazepam	Ativan	2 - 4 mg IV	
magnesium sulfate		1 - 4 Grams for cardiac/resp.; 4 – 12 Grams for eclampsia	
methylprednisolone	Solu-Medrol	125 - 250 mg	
metoprolol	Lopressor/Toprol	5 mg X 3 q 2 min IV	
midazolam	Versed	2 - 5 mg IV	
morphine sulfate		2-5 mg increments	
naloxone	Narcan	0.4 - 2 mg IV/IM	
nitroglycerin	NitroBid; NitroStat	0.4 mg SL prn	
nitrous oxide/oxygen		50:50 self-administered prn	
ondansetron	Zofran	4 - 8 mg p.o./IV	
oxytocin	Pitocin	10 to 40 units IV	
procainamide	Pronestyl	25 mg per min to max 17 mg/kg or hypotension or QRS widens by 50% or Heart Block/do not use in Dig Toxicity	
promethazine	Phenergan	6.25 - 25 mg IV	

Generic	Trade	Dosage	Comments
rocuronium	Zemuron	0 .6 mg/kg	Adverse reaction: Bronchospasm
sodium bicarbonate		25-100 mEq IV	
succinylcholine	Anectine, Quelicin	1-2 mg/kg	
terbutaline	Brethine	1 mg neb/0.25 mg SQ	
vasopressin	Pitressin	40 u IV X 2	
vecuronium	Norcuron	0.1 mg/kg	
	Combivent/DuoNeb	1 to 2 max	
50% Dextrose/water		0.5 - 2 gm/kg for hypoglycemia	

Appendix D:

TeamSTEPPS

Pocket Guide

TeamSTEPPS® 2.0

Team Strategies & Tools to Enhance Performance and Patient Safety

Table of Contents

Table of Contents

TeamSTEPPS® 2.0

Framework and Competencies

Team Competency Outcomes

Knowledge

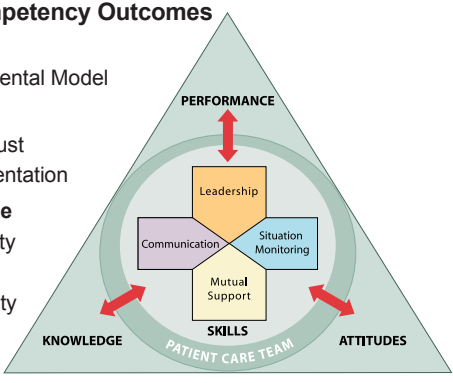
- Shared Mental Model

Attitudes

- Mutual Trust
- Team Orientation

Performance

- Adaptability
- Accuracy
- Productivity
- Efficiency
- Safety



TeamSTEPPS has five key principles. It is based on team structure and four teachable-learnable skills: Communication, Leadership, Situation Monitoring, and Mutual Support. The arrows depict a two-way dynamic interplay between the four skills and the team-related outcomes. Interaction between the outcomes and skills is the basis of a team striving to deliver safe, quality care and support quality improvement. Encircling the four skills is the team structure of the patient care team, which represents not only the patient and direct caregivers, but also those who play a supportive role within the health care delivery system.

...TeamSTEPPS is an evidence-based framework to optimize team performance across the health care delivery system.

Key Principles

Team Structure

Identification of the components of a multi-team system that must work together effectively to ensure patient safety

Communication

Structured process by which information is clearly and accurately exchanged among team members

Leadership

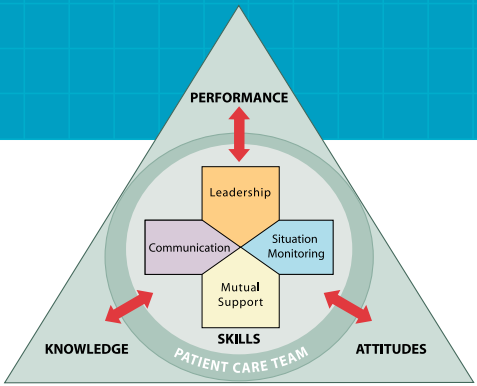
Ability to maximize the activities of team members by ensuring that team actions are understood, changes in information are shared, and team members have the necessary resources

Situation Monitoring

Process of actively scanning and assessing situational elements to gain information or understanding, or to maintain awareness to support team functioning

Mutual Support

Ability to anticipate and support team members' needs through accurate knowledge about their responsibilities and workload

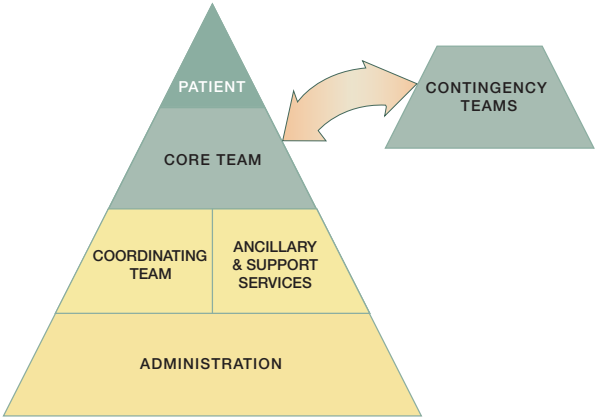


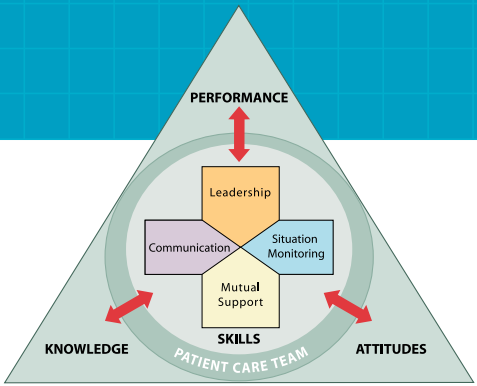
TeamSTEPPS® 2.0

Team Structure

Multi-Team System For Patient Care

Safe and efficient care involves the coordinated activities of a multi-team system.





TeamSTEPPS® 2.0

Communication

SBAR

A technique for communicating critical information that requires immediate attention and action concerning a patient's condition

Situation – What is going on with the patient?

> *"I am calling about Mrs. Joseph in room 251. Chief complaint is shortness of breath of new onset."*

Background – What is the clinical background or context?

> *"Patient is a 62-year-old female post-op day one from abdominal surgery. No prior history of cardiac or lung disease."*

Assessment – What do I think the problem is?

> *"Breath sounds are decreased on the right side with acknowledgment of pain. Would like to rule out pneumothorax."*

Recommendation and Request – What would I do to correct it?

> *"I feel strongly the patient should be assessed now. Can you come to room 251 now?"*

Call-Out

Strategy used to communicate important or critical information

- Informs all team members simultaneously during emergent situations
- Helps team members anticipate next steps
- Important to direct responsibility to a specific individual responsible for carrying out the task

Example during an incoming trauma:

Leader: "Airway status?"

Resident: "Airway clear"

Leader: "Breath sounds?"

Resident: "Breath sounds decreased on right"

Leader: "Blood pressure?"

Nurse: "BP is 96/62"

Check-Back

Using closed-loop communication to ensure that information conveyed by the sender is understood by the receiver as intended

The steps include the following:

1. Sender initiates the message
2. Receiver accepts the message and provides feedback
3. Sender double-checks to ensure that the message was received

Example:

Doctor: *"Give 25 mg Benadryl IV push"*

Nurse: *"25 mg Benadryl IV push"*

Doctor: *"That's correct"*

Handoff

The transfer of information (along with authority and responsibility) during transitions in care across the continuum. It includes an opportunity to ask questions, clarify, and confirm.

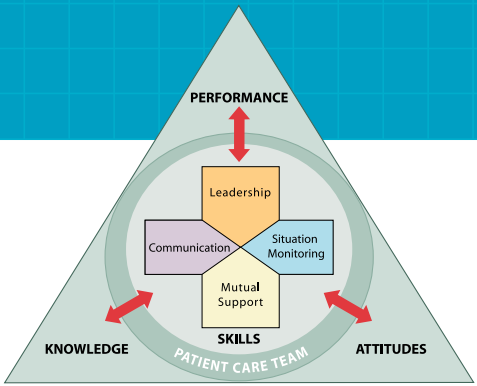
Examples of transitions in care include shift changes; transfer of responsibility between and among nursing assistants, nurses, nurse practitioners, physician assistants, and physicians; and patient transfers.

Handoff

Strategy designed to enhance information exchange during transitions in care

"I PASS THE BATON"

I	Introduction	Introduce yourself and your role/job (include patient)
P	Patient	Name, identifiers, age, sex, location
A	Assessment	Present chief complaint, vital signs, symptoms, and diagnoses
S	Situation	Current status/circumstances, including code status, level of (un)certainty, recent changes, and response to treatment
S	Safety Concerns	Critical lab values/reports, socioeconomic factors, allergies, and alerts (falls, isolation, etc.)
THE		
B	Background	Comorbidities, previous episodes, current medications, and family history
A	Actions	Explain what actions were taken or are required. Provide rationale.
T	Timing	Level of urgency and explicit timing and prioritization of actions
O	Ownership	Identify who is responsible (person/team), including patient/family members
N	Next	What will happen next? Anticipated changes? What is the plan? Are there contingency plans?



TeamSTEPPS® 2.0

Leadership

Effective Team Leaders

The following are responsibilities of effective team leaders:

- Organize the team
- Identify and articulate clear goals (i.e., the plan)
- Assign tasks and responsibilities
- Monitor and modify the plan; communicate changes
- Review the team's performance; provide feedback when needed
- Manage and allocate resources
- Facilitate information sharing
- Encourage team members to assist one another
- Facilitate conflict resolution in a learning environment
- Model effective teamwork

Team Events

Sharing the Plan

- **Brief** - Short session prior to start to share the plan, discuss team formation, assign roles and responsibilities, establish expectations and climate, anticipate outcomes and likely contingencies

Monitoring and Modifying the Plan

- **Huddle** - Ad hoc meeting to re-establish situational awareness, reinforce plans already in place, and assess the need to adjust the plan

Reviewing the Team's Performance

- **Debrief** - Informal information exchange session designed to improve team performance and effectiveness through lessons learned and reinforcement of positive behaviors

Brief Checklist

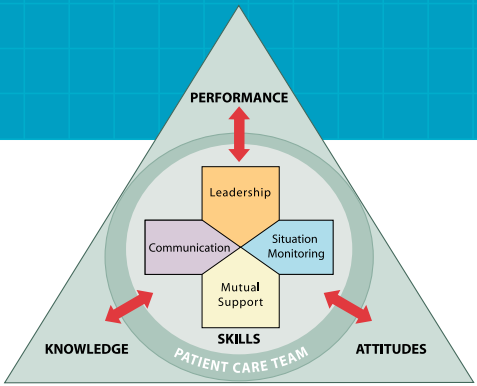
During the brief, the team should address the following questions:

- ☐ Who is on the team?
- ☐ Do all members understand and agree upon goals?
- ☐ Are roles and responsibilities understood?
- ☐ What is our plan of care?
- ☐ What is staff and provider's availability throughout the shift?
- ☐ How is workload shared among team members?
- ☐ What resources are available?

Debrief Checklist

The team should address the following questions during a debrief:

- ☐ Was communication clear?
- ☐ Were roles and responsibilities understood?
- ☐ Was situation awareness maintained?
- ☐ Was workload distribution equitable?
- ☐ Was task assistance requested or offered?
- ☐ Were errors made or avoided?
- ☐ Were resources available?
- ☐ What went well?
- ☐ What should improve?



TeamSTEPPS® 2.0

Situation Monitoring

Situation Monitoring Process

Situation monitoring is the process of continually scanning and assessing a situation to gain and maintain an understanding of what's going on around you.

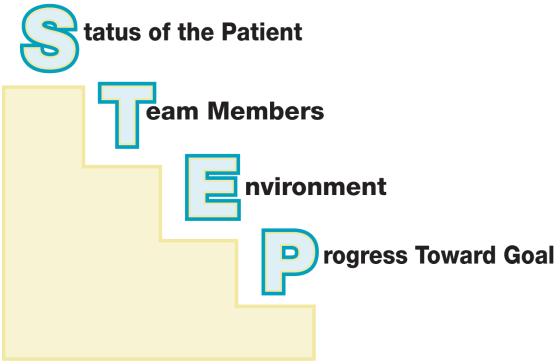
Situation awareness is the state of "knowing what's going on around you."

A **shared mental model** results from each team member maintaining situation awareness and ensures that all team members are "on the same page."

STEP

A tool for monitoring situations in the delivery of health care

Components of Situation Monitoring:



STEP

Tool to help assess health care situations

Status of Patient

- Patient History
- Vital Signs
- Medications
- Physical Exam
- Plan of Care
- Psychosocial Issues

Team Members

- Fatigue
- Workload
- Task Performance
- Skill
- Stress

Environment

- Facility Information
- Administrative Information
- Human Resources
- Triage Acuity
- Equipment

Progress Toward Goal

- Status of Team's Patient(s)?
- Established Goals of Team?
- Tasks/Actions of Team?
- Plan Still Appropriate?

Cross-Monitoring

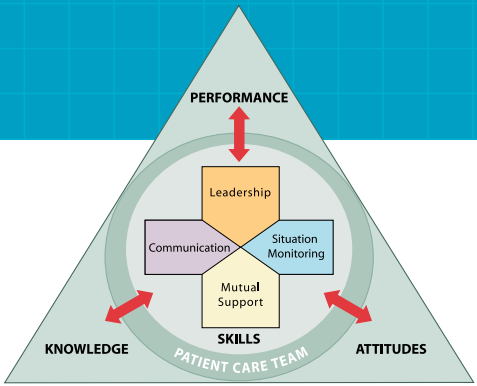
A harm error reduction strategy that involves:

- Monitoring actions of other team members
- Providing a safety net within the team
- Ensuring that mistakes or oversights are caught quickly and easily
- “Watching each other’s back”

Each team member is responsible for assessing his or her own safety status

I'M SAFE Checklist

- ☐ **I** = Illness
- ☐ **M** = Medication
- ☐ **S** = Stress
- ☐ **A** = Alcohol and Drugs
- ☐ **F** = Fatigue
- ☐ **E** = Eating and Elimination



TeamSTEPPS® 2.0

Mutual Support

Task Assistance

Helping others with tasks builds a strong team. Key strategies include:

- Team members protect each other from work overload situations
- Effective teams place all offers and requests for assistance in the context of patient safety
- Team members foster a climate where it is expected that assistance will be actively **sought** and **offered**

Feedback

Information provided to team members for the purpose of improving team performance

Feedback should be:

- Timely – given soon after the target behavior has occurred
- Respectful – focuses on behaviors, not personal attributes
- Specific – relates to a specific task or behavior that requires correction or improvement
- Directed toward improvement – provides directions for future improvement
- Considerate – considers a team member's feelings and delivers negative information with fairness and respect

Advocacy and Assertion

Advocate for the patient

- Invoked when team members' viewpoints don't coincide with that of the decisionmaker

Assert a corrective action in a **firm** and **respectful** manner

- Make an opening
- State the concern
- State the problem (real or perceived)
- Offer a solution
- Reach agreement on next steps

Two-Challenge Rule

Empowers all team members to *"stop the line"* if they sense or discover an essential safety breach

When an initial assertive statement is ignored:

- It is your responsibility to assertively voice concern at least ***two times*** to ensure that it has been heard
- The team member being challenged must acknowledge that concern has been heard
- If the safety issue still hasn't been addressed:
  - Take a stronger course of action
  - Utilize supervisor or chain of command

CUS

Assertive statements:

DESC Script

A constructive approach for managing and resolving conflict

D	=	Describe the specific situation or behavior; provide concrete data
E	=	Express how the situation makes you feel/what your concerns are
S	=	Suggest other alternatives and seek agreement
C	=	Consequences should be stated in terms of impact on established team goals; strive for consensus

Team Performance Observation Tool

Team Structure

Assembles team
Assigns or identifies team members' roles and responsibilities
Holds team members accountable
Includes patients and families as part of the team

Communication

Provides brief, clear, specific, and timely information
Seeks information from all available sources
Uses check-backs to verify information that is communicated
Uses SBAR, call-outs, check-backs, and handoff techniques to communicate effectively with team members

Leadership

Identifies team goals and vision
Utilizes resources efficiently to maximize team performance
Balances workload within the team
Delegates tasks or assignments, as appropriate
Conducts briefs, huddles, and debriefs
Role models teamwork behaviors

Situation Monitoring

Monitors the state of the patient
Monitors fellow team members to ensure safety and prevent errors
Monitors the environment for safety and availability of resources (e.g., equipment)
Monitors progress toward the goal and identifies changes that could alter the care plan
Fosters communication to ensure a shared mental model

Mutual Support

Provides task-related support and assistance
Provides timely and constructive feedback to team members
Effectively advocates for the patient using the Assertive Statement, Two-Challenge Rule, or CUS
Uses the Two-Challenge Rule or DESC script to resolve conflict

BARRIERS

- Inconsistency in Team Membership
- Lack of Time
- Lack of Information Sharing
- Hierarchy
- Defensiveness
- Conventional Thinking
- Complacency
- Varying Communication Styles
- Conflict
- Lack of Coordination and Followup With Coworkers
- Distractions
- Fatigue
- Workload
- Misinterpretation of Cues
- Lack of Role Clarity

TOOLS and STRATEGIES

Communication

- SBAR
- Call-Out
- Check-Back
- Handoff

Leading Teams

- Brief
- Huddle
- Debrief

Situation Monitoring

- STEP
- I'M SAFE

Mutual Support

- Task Assistance
- Feedback
- Assertive Statement
- Two-Challenge Rule
- CUS
- DESC Script

OUTCOMES

- Shared Mental Model
- Adaptability
- Team Orientation
- Mutual Trust
- Team Performance
- Patient Safety

Contact Information

To learn more about TeamSTEPPS®, refer to the Agency for Healthcare Research and Quality (AHRQ) Web site:

http://teamstepps.ahrq.gov/

and the Department of Defense Patient Safety Program Web site:

http://www.health.mil/dodpatientsafety/ProductsandServices/TeamSTEPPS

Developed for the Department of Defense Patient Safety Program in collaboration with the Agency for Healthcare Research and Quality

TeamSTEPPS® 2.0 Pocket Guide

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Appendix E:

Appreciative Inquiry

Appreciative inquiry

Appreciative inquiry (**AI**) is a model that seeks to engage stakeholders in self-determined change. It was developed at Case Western Reserve University's department of organizational behavior, starting with a 1987 article by David Cooperrider and Suresh Srivastva. They felt that the overuse of "problem solving" as a model often held back analysis and understanding, focusing on problems and limiting discussion of new organizational models.[1]

History

Cooperrider and Srivastva took a social constructionist approach, arguing that organizations are created, maintained and changed by conversations, and claiming that methods of organizing were only limited by people's imaginations and the agreements among them.[2]

In 1990, Cooperrider and Diana Whitney published an article outlining the five principles of AI.[3]

In 1996, Cooperrider, Whitney and several of their colleagues became centrally involved using AI to mid-wife the creation of the United Religions Initiative (www.uri.org), a global organization dedicated to promoting grassroots interfaith cooperation for peace, justice and healing. This early and partnership between URI and AI is chronicled in Birth of a Global Community: Appreciative Inquiry in Action by Charles Gibbs and Sally Mahé. AI was also used in the first (199) and subsequent meetings of business leaders that created the UN's Global Compact.[4] In another of the early applications, Cooperrider and Whitney taught AI to employees of GTE (now part of Verizon resulting in improvements in employees' support for GTE's business direction and. as a part of continuous process improvement generated both improvements in revenue collection and cost savings earning GTE an ASTD award for the best organisational change program in the US in 1997."[5]

On May 8, 2010, Suresh Srivastva died.[6]

Gervase Bushe, a researcher on the topic, published a 2011 review of the model, including its processes, critiques, and evidence.[7] He also published a history of the model in 2012.[8]

Basis and principles

According to Bushe, AI "advocates collective inquiry into the best of what is, in order to imagine what could be, followed by collective design of a desired future state that is compelling and thus, does not require the use of incentives, coercion or persuasion for planned change to occur."[9]

The model is based on the assumption that the questions we ask will tend to focus our attention in a particular direction. Some other methods of assessing and evaluating a situation and then proposing solutions are based on a *deficiency* model. Some other methods ask questions such as "What are the problems?", "What's wrong?" or "What needs to be fixed?". Instead of asking "What's the problem?", some methods couch the question in terms of challenges, which still focuses on deficiency, on what needs to be fixed or solved.[10]

The five principles of AI are:[9]

1. The *constructionist principle* proposes that what we believe to be true determines what we do, and thought and action emerge from relationships. Through the language and discourse of day to day interactions, people co-construct the organizations they inhabit. The purpose of inquiry is to stimulate new ideas, stories and images that generate new possibilities for action.
2. The *principle of simultaneity* proposes that as we inquire into human systems we change them and the seeds of change, the things people think and talk about, what they discover and learn, are implicit in the very first questions asked. Questions are never neutral, they are fateful, and social systems move in the direction of the questions they most persistently and passionately discuss.

3. The *poetic principle* proposes that organizational life is expressed in the stories people tell each other every day, and the story of the organization is constantly being co-authored. The words and topics chosen for inquiry have an impact far beyond just the words themselves. They invoke sentiments, understandings, and worlds of meaning. In all phases of the inquiry effort is put into using words that point to, enliven and inspire the best in people.
4. The *anticipatory principle* posits that what we do today is guided by our image of the future. Human systems are forever projecting ahead of themselves a horizon of expectation that brings the future powerfully into the present as a mobilizing agent. Appreciative inquiry uses artful creation of positive imagery on a collective basis to refashion anticipatory reality.
5. The *positive principle* proposes that momentum and sustainable change requires positive affect and social bonding. Sentiments like hope, excitement, inspiration, camaraderie and joy increase creativity, openness to new ideas and people, and cognitive flexibility. They also promote the strong connections and relationships between people, particularly between groups in conflict, required for collective inquiry and change.

Some researchers believe that excessive focus on dysfunctions can actually cause them to become worse or fail to become better.[11] By contrast, AI argues, when all members of an organization are motivated to understand and value the most favorable features of its culture, it can make rapid improvements.[12]

Strength-based methods are used in the creation of organizational development strategy and implementation of organizational effectiveness tactics.[13] The *appreciative* mode of inquiry often relies on interviews to qualitatively understand the organization's potential strengths by looking at an organization's experience and its potential; the objective is to elucidate the assets and personal motivations that are its strengths.

Bushe has argued that mainstream proponents of AI focus too much attention on "the positive" and not enough on the transformation that AI can bring about through generating new ideas and the will to act on them(,[14][15][16]). In a 2010 comparative study in a school district he found that even in cases where no change occurred participants were highly positive during the AI process.[17] What distinguished those sites that experienced transformational changes was the creation of new ideas that gave people new ways to address old problems. He argues that for transformational change to occur, AI must address problems that concern people enough to want to change. However, AI addresses them not through problem-solving, but through generative images.[18] Some of this is covered in a 90-minute discussion about AI, positivity and generativity] by Bushe and Dr. Ron Fry of Case Western, at the 2012 World Appreciative Inquiry Conference.[19]

Distinguishing features

The following table comes from the Cooperrider and Srivastva (1987) article and is used to describe some of the distinctions between AI and approaches to organizational development not based on what they call positive potential:[20]

Problem Solving	**Appreciative inquiry**
Felt need, identification of problem(s)	Appreciating—valuing "the best of what is"
Analysis of Causes	Envisioning what might be
Analysis of possible solutions	Engaging in dialogue about what should be

Action Planning (treatment)	Innovating what will be

Appreciative inquiry attempts to use ways of asking questions and envisioning the future in order to foster positive relationships and build on the present potential of a given person, organization or situation. The most common model utilizes a cycle of four processes, which focus on what it calls:

1. *DISCOVER:* The identification of organizational processes that work well.
2. *DREAM:* The envisioning of processes that would work well in the future.
3. *DESIGN:* Planning and prioritizing processes that would work well.
4. *DESTINY* (or *DEPLOY*): The implementation (execution) of the proposed design.[21]

The aim is to build – or rebuild – organizations around what works, rather than trying to fix what doesn't. AI practitioners try to convey this approach as the opposite of problem solving.

Implementing AI

There are a variety of approaches to implementing appreciative inquiry, including mass-mobilized interviews and a large, diverse gathering called an Appreciative Inquiry Summit.[22] These approaches involve bringing large, diverse groups of people together to study and build upon the *best* in an organization or community.

Current resources on AI include (in alphabetical order):

- Barrett, F.J. & Fry, R.E. (2005) *Appreciative Inquiry: A Positive Approach to Building Cooperative Capacity*. Chagrin Falls, OH: Taos Institute
- Cooperrider, D.L., Whitney, D. & Stavros, J.M. (2008) *Appreciative Inquiry Handbook (2nd ed.)* Brunswick, OH: Crown Custom Publishing.
- Gibbs, C., Mahé, s. (2004) "Birth of a Global Community: Appreciative Inquiry in Action". Bedford Heights, OH: Lakeshore Publishers.
- Lewis, S., Passmore, J. & Cantore, S. (2008) *The Appreciative Inquiry Approach to Change Management*. London, UK: Kogan Paul.
- Ludema, J.D. Whitney, D., Mohr, B.J. & Griffen, T.J. (2003) *The Appreciative Inquiry Summit*. San Francisco: Berret-Koehler.
- Whitney, D. & Trosten-Bloom, A. (2010) *The Power of Appreciative Inquiry (2nd Ed.)*. San Francisco: Berrett-Koehler.

AI's uses

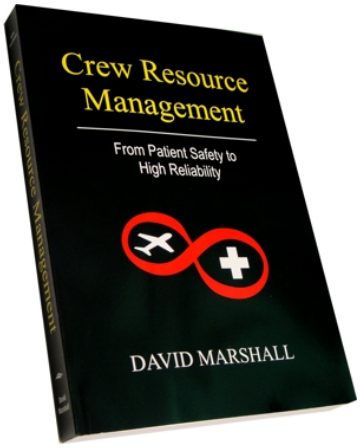
AI is used in organizational development and as a consultancy tool in an attempt to bring about strategic change. It has been applied in businesses, health care bodies, social non-profit organizations, educational institutions, and government operations.[23] Although originating in the US, it is also used in the UK – for example in the National Support Teams and around the world. Since 2000 the AI Practitioner, a quarterly publication, has described applications in a variety of settings around the world.

In Vancouver, AI is being used by the Dalai Lama Center for Peace and Education. The Center, which was founded by the Dalai Lama andVictor Chan, is using AI to facilitate compassionate communities.[24]

Appendix F:

Crew Resource Management

The history of Crew Resource Management.



The content for this section is extracted from the book *Crew Resource Management: From Patient Safety to High Reliability* by Safer Healthcare Founder, Board Member and author, David Marshall.
The history of Crew Resource Management began upon the aviation industry's surrender to two fundamental and incontrovertible realities:

- Human beings are fallible and will inevitably make mistakes
- Human beings are individuals, with a rich diversity of personalities, cultural backgrounds, talents and skills. Whether by nature or nurture, some are better at communicating, some better at performing under stress.

In aviation and in medicine, these quintessentially human traits collide against a professional environment in which adverse events are starkly and objectively measured: people get hurt or killed. Safety improvement initiatives based on reducing human error demand a standardized, scalable, and sustainable method for preventing un-standard human factors from causing adverse events. Simply put, Crew Resource Management methods help keep the traits that make each person wonderfully unique from causing harm to others.

Effecting positive behavioral and cultural change... Crew Resource Management.

Crew Resource Management (CRM) was introduced in the aviation industry during a NASA workshop in 1979, designed as a training program to improve air travel safety and reduce the

increasing number of fatal accidents attributable to human error. Studies had found that the primary cause of the majority of aviation accidents occurring at that time were due to human error. The leading causes of which were failures of interpersonal communication, leadership and decision-making within the high-risk cockpit.

Today, organizations around the world have begun to adopt Crew Resource Management in the healthcare industry. Safer Healthcare has been working with hospitals since 1999 to formalize Crew Resource Management program training, coaching and integration. To date, we have worked with over 500 hospitals worldwide to create and enhance patient safety culture and create high reliability using Lean process improvements and CRM concepts.

As a training methodology, Crew Resource Management in healthcare is concerned not so much with the technical knowledge and skills required to operate equipment or perform specific operations, but rather with the cognitive and interpersonal skills needed to effectively manage a team-based, high-risk activity. In this context, cognitive skills are defined as the mental processes used for gaining and maintaining situational awareness, for solving problems and making decisions. Interpersonal skills are regarded as communications and a range of behavioral activities associated with teamwork.

Mitigating human error.

"A system not designed to expect and safely absorb human error will constantly suffer from human mistakes."

- David A. Marshall

Crew Resource Management has been studied from various scholarly and scientific angles, and several training approaches have been developed. Given this variation, it is useful to consider what Crew Resource Management is and what it is not.

Crew Resource Management is...

The definition of Crew Resource Management

- *a flexible, systemic method for optimizing human performance in general, and increasing safety in particular, by (1) recognizing the inherent human factors that cause errors and the reluctance to report them, (2) recognizing that in complex, high risk endeavors, teams rather than individuals are the most effective fundamental operating units and (3) cultivating and instilling customized, sustainable and team-based tools and practices that effectively use all available resources to reduce the adverse impacts of those human factors.*

Crew Resource Management has been variously described and defined by academics, consultants and various organizations. For the purpose of understanding its import and application in the aviation context, it can be defined as the following:

- A method created to optimize human and crew performance by reducing the effect of human error through the use of all resources, including people, hardware (technology) and information (process) to solve problems.

- A systems approach to safety that emphasizes the inherent nature of error, promotes a non-punitive culture, and centers on clear, comprehensive standard operating procedures (SOPs).

- A comprehensive, operationally focused, and self-convincing and hands-on system of proactively applying human factors to improve crew performance.

- A system that includes the following critical elements: (1)focuses on how crew member attitudes and behaviors affect safety, (2) adopts the crew rather than the technically competent individual as the standard training unit, (3) employs active training; the participants learn by participating rather than being lectured to, (4) imparts leadership and teamwork skills, (5) promotes crew member input teams while preserving authority and chain of command and (6) gives individuals and crews the opportunity to review and analyze their own performance and make appropriate improvements.

Crew Resource Management isn't...

Given the relatively recent emergence of Crew Resource Management program in healthcare and some initial resistance to its adoption, highlighting what Crew Resource Management isn't may be as instructive as stating what is. Crew Resource Management is not:

- A quick fix to improve patient safety. An organizational mindset and cultural shift are required.

- A stand-alone system that operates in isolation from other training activities.

- A passive series of classroom lectures.

- Off-the-shelf cook-book medicine.
- A psychological or personality assessment tool.
- A way for company management to dictate and control behavior.
- A method of managing by committee or undermining the team leader's authority. In fact, authority should be enhanced through the use of Crew Resource Management. This is primarily due to the fact that (1) all team members direct information to the team leader and (2) although all team members have the chance to be heard, the final decision on any course of action still rests with the team leader.

Crew Resource Management has been proven to effectively improve cultures (primarily patient safety) in the organizations that choose to adopt it. This was the burning platform that drove the commercial aviation industry to develop and adopt this powerful system.

Universal set of skills and techniques.

The following universal Crew Resource Management skills are transferred to staff members and physicians while deploying a fully integrated CRM program:

- Standardized communication
- Team briefings and debriefings
- Situational awareness
- Decision-making and leadership
- Conflict resolution
- Effective teamwork
- Critical language
- Threat and error management

Crew Resource Management program skills, while seeming like common sense, are often difficult to master, as they require a change in interpersonal dynamics and organizational culture. Through a blended and systematized approach, including education, practical skill development and interdisciplinary simulation, research has shown that CRM program skills can be successfully

embedded within a high-risk healthcare department or medical organization to effectively standardize communication, teamwork, quality improvement and high reliability.

The Value of Healthcare Team Training and Crew Resource Management Team Training

Why is it important to successfully develop healthcare team skills?

A team is defined as a group of two or more individuals who must interact and adapt in order to achieve a common objective. Two aspects of the nature of teamwork are important: (1) the individual's ability to function as a member of the team and (2) the entire team's ability to function as an efficient collective entity. Several factors such as task demands, team composition, and the organizational context, influence team performance. Teams must be able to accomplish tasks as a unit, yet team members have individual tasks that may change from member to member and from day to day.

Each team member must therefore possess general team competencies and skills which can be transferred from task to task and from team to team. One main objective of human factors team training is encouraging participation from individual members while developing the knowledge and skills necessary to successfully perform as a group member.

The successful development of healthcare team skills and the establishment of consistent and sustainable teamwork models offer the following benefits to hospitals and healthcare organizations:

- Increased levels of patient safety;
- Synergistic process design and problem solving;
- Objective analysis of healthcare problems and opportunities;
- Promotion of cross-functional understanding;
- Improved healthcare and patient safety quality and overall productivity;
- Greater innovation;

- Reduced hospital operating costs;
- Increased commitment to organizational mission;
- More flexible response to change;
- Increased ownership and stewardship;
- Reduced turnover and absenteeism.

Individual team members gain the following benefits from Crew Resource Management training and human factor skill development:

- Enhanced problem-solving skills;
- Increased knowledge of interpersonal dynamics;
- Broader knowledge of business processes;
- New skills for future leadership roles;
- Increased quality of work life;
- Feelings of satisfaction and commitment;
- A sense of being part of something greater than what one could accomplish alone.

At the conclusion of Crew Resource Management, lean healthcare training or healthcare team training created specifically for your organizations needs participants are expected to exhibit proficiency in the following areas:

- Understand how teamwork and communication contribute to patient safety;
- Describe techniques used for effective teamwork, communication, situational awareness, decision making and assertiveness in healthcare;
- Create and perform customized team briefings and debriefings in the OR;
- Exhibit proficiency using the SBAR technique;
- Understand and respect personal communication styles;
- Develop strategies to integrate teamwork and communication tools successfully in their local hospital environment or department.

The Need for Sustainability

Sustained implementation of a Crew Resource Management program requires a framework for the development of recurring team crew resource management, lean healthcare or healthcare team training courses based on assessments, learning objectives, updated educational methods, best practices in healthcare, and evaluation strategies. If team skills are demonstrated to be optimized and training improves patient safety when measuring against established metrics, it should be considered an integral part of healthcare personnel and clinical team member development.

Tragic airline mishaps impel cultural change.

A series of aviation disasters in the 1970's triggered the innovative shift that led to Crew Resource Management. These included the 1977 Canary Islands disaster in which two Boeing 747's collided on a runway, killing 582 people. In 1972, a Lockheed L-1011 (Eastern Air Lines Flight 401) crashed in a Florida swamp, killing 99 passengers... as the crew worked to repair a burned-out light bulb. United Airlines Flight 173, making its final approach to Portland International Airport after a routine flight on December 28, 1978, ran out fuel and crashed into a residential area, killing eight passengers and two crew members, and seriously injuring 23 others.

In each case, tragedy traced back to human error:

- Canary Islands: in his haste to take off, the captain of the Boeing 747, a highly seasoned professional, mistakenly assumed a critical pre-flight step had been performed and barreled down a foggy runway without first obtaining takeoff clearance.

- EAL 401: crashed, in essence, because someone forgot to fly the plane. The National Transportation Safety Board (NTSB), after investigating, found that the autopilot was inadvertently switched from "Altitude Hold" to "Control Wheel Steering" mode when the captain accidentally leaned against a yolk, causing the plane to enter a gradual descent. No one in the crew noticed or heard the system's altitude alert warning because the crew was distracted by the landing gear light and the flight engineer was not in his seat when the alert sounded and thus could not hear it.

- UA 173: experienced a similar landing gear light problem. The experienced captain noticed that the plane's nose gear light failed to turn green to indicate it was properly deployed. With the control tower's permission, the pilot circled the plane and ran through his checklists to troubleshoot the problem, but the nose gear light stayed red. While circling, the first officer and flight engineer told the pilot that the plane was running low on fuel. The pilot apparently ignored the warnings. Post-crash

analysis revealed that the green light bulb for the nose gear had simply burned out; the landing gear had been deployed the entire time. The NTSB found that the crash was caused by the captain's failure to accept input from junior crew members and a lack of assertiveness by the flight engineer.

In all of these cases, the aircraft were mechanically sound, the pilots and their crews technically competent. The systems and procedures in place simply did not catch these fatal mistakes in time. In short, the system was flawed.

In all of these cases, the aircraft were mechanically sound, the pilots and their crews technically competent. The systems and procedures in place simply did not catch these fatal mistakes in time. In short, the system was flawed.

NASA took the lead to explore how to fix the system, convening a June 1979 workshop to evaluate the causes of aviation accidents. As the above episodes imply, the workshop led to an alarming discovery: human error caused most aviation accidents... in fact, 60-80% of them. This problem was compounded by failures in leadership, interpersonal communication and decision making in the cockpit.

The 1979 workshop did not operate in a vacuum. NASA had, in fact, pioneered research into human factors and performance in aviation and aerospace in the early 1970's, at its Ames Research Center in California. NASA's human factors in aviation safety program began in 1973 when a series of interviews were conducted with airline crew members. A typical comment was: "My company trains pilots well but not captains." In a noted NASA-sponsored study, H.P. Ruffel-Smith (1979) used simulators to examine crew behaviors and performance in both routine and emergency situations. Ruffel-Smith's study demonstrated that the better crew resources were utilized and the more effectively crew members communicated, the better the crew performed.

Other NASA-sponsored research projects suggested that grafting Crew Resource Management concepts onto existing training programs in flight operations (such as Line Oriented Flight Training or LOFT) would help resolve human factor-related problems. This research recognized that improved technology and operating process would represent only a partial route to better performance and safety; the full solution depended on the crew. That way, all resources would be utilized to drive improvement.

NASA-sponsored research recognized that improved technology and operating process would partly solve human factor-related problems, but that the full solution depended on the crew.

Following NASA's lead, the FAA, in the early 1980's, incorporated a Crew Resource Management platform into its regulatory program. The stated objective was to work with the aviation industry to develop a draft Notice of Proposed Rule-Making that would address crew coordination concepts and Crew Resource Management. On January 13, 1981, at another NASA/Aviation Industry Workshop, the FAA's Charles Huettner said:

"We are embarking on an adventure into the flight training techniques of the future. In recent years a growing consensus has occurred in industry and government that training should emphasize crew coordination and the management of crew resources."

- Charles Huettner, FAA

Six generations of CRM.

Since its introduction in the early 1980's, there have been six generations of Crew Resource Management. Each successive generation was enhanced to build upon the successes and lessons learned from the previous generation(s). The following are overviews of each generation.

First Generation: Cockpit Resource Management

With crew-based training validated in concept, United Airlines (UA) initiated the first formal Crew Resource Management training course in 1981. This initiative followed the alluded to rash of serious accidents, none of which were attributable to a specific problem (including a mechanical failure) that would have prevented a safe flight.

UA developed its program with the input of experts on improving business management. Other airlines took the same management-focused approach in their early Crew Resource Management programs. Some of them, following the results of NASA's research, included full-mission LOFT training in addition to classroom work. UA made its C/L/R program available to other carriers, but they were slow to respond. However, UA continued to fine-tune its program, making it an integral part of UA's own flight officer training. Consistent with the FAA recommendations, the main tenets of the program were to institute:

- A comprehensive system for improving crew performance.
- An operational focus on safety improvement.

- A study of how team member attitudes and behaviors affect safety.
- A training method using the team, not the individual, as the training unit.
- Active training where the participants experience and participate.

In retrospect, the business management focus of these first-generation programs proved unduly narrow. Virtually all of those programs (somewhat reflexively on the heels of the NTSB's damning report on UAL 173) emphasized correcting deficiencies in individual behavior such as a lack of assertiveness by juniors and authoritarian behavior by captains. The programs featured psychological testing and explored abstract concepts such as leadership. They advocated general strategies of interpersonal behavior but did not clearly define appropriate cockpit behavior.

Overall, despite these shortcomings, the early Crew Resource Management programs were generally well received. That said, some pilots resisted, denouncing them as charm school or attempts to manipulate their personalities.

Second Generation: Crew Resource Management

During the middle and second half of the 1980's, many commercial airlines, domestic and foreign, developed and implemented their own Crew Resource Management programs. By the time NASA held its May 1986 industry workshop, a new generation of Crew Resource Management courses had emerged. These newer programs expanded the scope of the first-generation efforts, embracing more modular, real world operations.

Second-generation programs emphasized cockpit group dynamics (team dynamics) and led to a name change, from Cockpit to Crew Resource Management. The expanded training included new topics such as team building, briefing strategies, situational awareness, and stress management and featured distinct modules on decision making and breaking error chains that can cause catastrophe. These refinements were intended partly to address pilots' resistance to first-generation programs, but also to translate abstract concepts into everyday operational tools.

However, in order to teach Crew Resource Management concepts, many of the second-generation courses still relied on exercises and games (such as Lost on the Moon and Win as Much as You Can) unrelated to aviation. Therefore, although the new courses were better received by trainees than those of the first generation, the criticism persisted that the training was heavily laced with psycho-babble; for example, the notion of synergy in group dynamics was often condemned by participants as useless jargon.

Third Generation: Further Expanding the Scope

In the early 1990's, the Crew Resource Management training began to aim at increased relevance. Crew Resource Management was integrated with technical training, focusing on specific skills and behaviors that would help pilots function more effectively in actual flight deck operations. Several airlines introduced modules connecting Crew Resource Management and flight deck automation.

Significantly, third-generation Crew Resource Management programs also expanded to address:

- Issues related specifically to the aviation system in which crews function. This included the elements of organizational culture that affect safety.
- The recognition and assessment of human factor issues.

As the name change suggests, training in Crew Resource Management was extended to other groups that shared the responsibility for aviation safety, including flight attendants, dispatchers, and maintenance personnel. Many airlines, in fact, initiated joint cockpit-cabin Crew Resource Management training. A number of carriers developed Crew Resource Management training specifically for captains, related to the leadership demands that accompany command. Advanced Crew Resource Management training was given to check airmen and others responsible for training and evaluating crew members.

Third-generation Crew Resource Management programs filled the identified need to expand the emphasis on, and the definition of, the flight crew. But they may also have had an unintended consequence: diluting the original Crew Resource Management mandate to reduce human error.

Fourth Generation: Integrating Crew Resource Management and Establishing Formal Procedures

In 1990, the FAA issued an advisory circular on Crew Resource Management; comprehensive Crew Resource Management training became a not only a reality, but a regulatory requirement. The FAA also introduced another major change with its Advanced Qualification Program (AQP).

AQP allowed carriers to develop customized Crew Resource Management training for their own organizations. In exchange for this greater flexibility, carriers would be required to:

- Provide both Crew Resource Management and LOFT for all flight crews.
- Integrate Crew Resource Management concepts into technical training.
- Create detailed analyses of training requirements for each aircraft.

- Develop programs for addressing human factors in each aspect of training.

Most major U.S. airlines and several regional carriers chose AQP. A consensus found that the AQP approach improved flight crew training and qualifying.

To assimilate Crew Resource Management into actual operations, airlines began to formalize Crew Resource Management concepts by adding specifically prescribed behaviors to their checklists. This was done to ensure that decisions and actions would be informed by bottom line considerations and that the basics of Crew Resource Management would be observed, particularly in non-standard situations.

By making Crew Resource Management an integral part of all flight training, the fourth generation of Crew Resource Management made progress in solving the persistent problems with human error. But even more progress was needed.

Fifth Generation: Error Management

The fifth generation of Crew Resource Management aimed at resolving reported deficiencies in the previous iterations. For example, previous training regimens had prescribed specific behaviors but did not explain the reasons for doing so.

Dr. Robert Helmreich (a preeminent Crew Resource Management pioneer) and his colleagues set out to fix the education shortfall by defining a single, universal rationale that could be supported by pilots worldwide. They circled back to the basics: returning to the original concept of Crew Resource Management as a way to avoid error, we concluded that the overarching justification for Crew Resource Management should be error management... effective error management is the hallmark of effective crew performance and the well-managed errors are indicators of effective performance.

The Helmreich team advocated sharply defined justification accompanied by proactive organizational support. The fifth generation of Crew Resource Management would:

- Introduce and emphasize the concept of error management: managing and living with human error.
- Flow from the recognition that human error is ubiquitous, inevitable and a valuable source of information.

Therefore, Crew Resource Management would concentrate on error countermeasures that would apply to each situation:

- Avoiding error altogether. (For example, advance briefing on landing approach procedures and potential pitfalls, combined with intra-crew communication and verification.)
- Identifying and trapping incipient errors before they are committed. (For example: cross-checking navigation information before executing on it.)
- Mitigating the consequences of errors that do occur. (For example, remembering to fly the plane after a warning alarm sounds.)

Fifth-generation Crew Resource Management would include formal instruction about the limitations of human performance, including the nature of cognitive errors and slips and the performance-degrading effects of stressors such as fatigue, work overload, and emergencies.

Fifth-generation Crew Resource Management posited that in order for the error management approach to achieve full traction, organizations should (1) affirmatively concede that errors will inevitably occur and (2) adopt a non-punitive approach to all errors (except for willful violations of rules or procedures).

As suggested above, fifth-generation Crew Resource Management also stressed data gathering and reporting. Doing so would advance deeper understanding, but also help gauge program success. The FAA took the cue and, in 1997, enacted Aviation Safety Action Programs (ASAP), intended to encourage aviation organizations to take proactive safety measures and freely report incidents. American Airlines (AA) was an early adopter, working in cooperation with both the FAA and the pilots' union. Through AA's confidential, non-punitive reporting program, pilots reported safety concerns and errors. The AA program was a resounding success: during its first two-years, nearly six thousand reports were received. The data generated by its ASAP helped AA refine and improve its Crew Resource Management training program.

Although each ASAP requires delicate negotiation among the carrier, the FAA, and the pilots' union (which seeks to protect the confidentiality and non-punitive nature of incident reports), ASAP continues today to be a vital element of airline safety.

Sixth Generation: Threat Management

Crew Resource Management has evolved to a sixth generation, which builds on the fifth generation's error management theme. The sixth generation recognizes that the fifth generation's focus on pilot error (the sharp end) was appropriate; it further addresses the reality that flight crews must not only cope with human error inside the cockpit but also with threats to safety arising from the work environment as a whole.

Thus, in the sixth generation, the Crew Resource Management lens has been widened from error management to threat management. These days, traditional Crew Resource Management skills and methods are applied not only to eliminate, trap, or mitigate errors, but to identify systemic threats to safety.

A caring and insightful yet methodical approach to lasting culture change.

Safer Healthcare, the industry leader in providing Crew Resource Management programs to hospital executives, management, staff and physicians, has been actively engaged in teaching Crew Resource Management principles for over a decade to thousands of healthcare professionals worldwide.

Safer Healthcare's award-winning *CRM: Human Factors in Healthcare* workshop teaches teams the fundamental concepts and elements that were instrumental in achieving world-class safety and quality records in commercial aviation.

Appendix G:

Closed-loop Communication

Team Communication in Emergencies

Simple Strategies for Staff

AnnMarie Fitzgerald Chase MSN, RN, CEN

A two-year-old child arrived in the Emergency Department crying, wheezing out loud and rubbing her puffy eyes. Her face was red and hot, and her eyes were nearly swollen shut. She had been dining out with her mother and somehow had an exposure to food containing peanuts, and this little girl, like so many others of her generation, was allergic.

"Give that kid a milligram of Epi," the Emergency Department Physician shouted. He was standing in the doorway of another patient's room, two doors down. Karen, the RN assigned to that section of the ED, was just walking into the toddler's room.

"You mean 0.1 mg, right?" Karen clarified as she walked by the busy MD.

"Yes, a milligram, you know what I mean, Karen," he repeated back.

"You mean 0.1 mg, of 1:1000 Epinephrine, SC…right Bob?" Karen answered back again while drawing up the medication in the room, as time was of the essence. This child was in full-blown anaphylaxis and needed treatment immediately to prevent a code.

There are certain aspects of resuscitation and emergency response that, after many years of practice, become routine for providers. Add to that the comfort of working with familiar staff,

and, at times, clinical response feels automatic. But, consider the scenario described above that may have been different with an inexperienced RN, unfamiliar staff, or even just tired staff. Imagine a new graduate taking this verbal order and not questioning it because it was an emergency. The child could have ended up receiving a ten-fold overdose with potentially lethal consequences. In these circumstances, effective communication is critical. In this article, we will review the importance of respect, clear communication, and simple techniques to avoid errors during emergency and resuscitation situations.

Complex Environment + High-Risk Situation

= Recipe for Communication Breakdown

Communication Breakdown is Common

We all know that effective communication is critical in high-risk environments such as healthcare. Effective teamwork depends on all team members communicating and avoiding complacency. "Retrospective analyses of incident and adverse event reports found communication and teamwork issues to be among the most frequent contributory factors (i.e. in 22-32% of reports)" (Manser, 2009) [9]. In order to avoid errors and increase patient safety, we must focus on open and frequent communication during resuscitation.

RESPECT

"R-E-S-P-E-C-T, find out what it means to me, R-E-S-P-E-C-T!" [1] belts out Aretha Franklin in her iconic empowering tune. But what does this mean in the healthcare setting? It is all about being professional and having respect for each other. No one is perfect, and in the IOM report, "*To Err is Human,*"[2] the authors point out that it is in our nature to be imperfect. In healthcare

settings, we should set up systems and implement practices that anticipate and minimize errors. Communication errors are very common, and Croteau (2004) argues that,

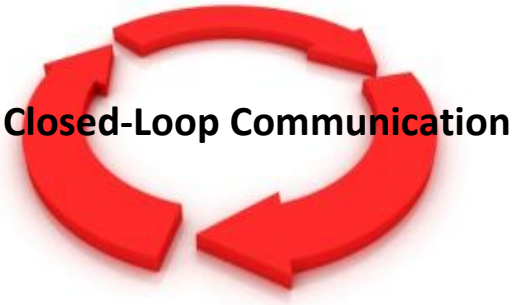
> *"If there were one aspect of health care delivery an organization could work on that would have the greatest impact on patient safety, it would be improving the effectiveness of communication on all levels-written, oral, electronic."* [3]

One way to decrease errors is through open communication where both parties can be expected to receive and give respect, even when they are wrong. What would have happened if either party in the opening story did not have respect for the other? Can you imagine if the physician had yelled at the nurse? What if the nurse had been too intimidated to clarify what the physician meant? What if the nurse had scorned the MD for his mistake? None of this would have been productive or helpful to the patient. Having confidence that you will be treated with respect in your workplace is the first step to building a culture of safety.

Constructive Intervention

Since 2005, Advanced Cardiac Life Support (ACLS) classes have incorporated a new communication technique called "Constructive Intervention."[4] This concept is based on respect, but it takes it one step further. It asks all participants of ALCS to intervene or take action when they know something during a code is not right. ACLS participants are asked to intervene for the patient's safety. It does not matter what role they play in the code, they must

intervene if they know a mistake is being made. ACLS elaborates that, "during a resuscitation attempt, the team leader or team member may need to intervene if an action that is about to occur may be inappropriate at the time. Constructive intervention is necessary but should be done tactfully" (ACLS, 2006).[4] As an ACLS instructor, I notice many class participants have difficulty understanding or even agreeing with this concept. Some staff may not feel confident in correcting or questioning a coworker with more training and education, but they should. Students often think that the emphasis of constructive intervention is great in the classroom, but say it does not translate to the "real world" of clinical practice. This is an unfortunate perspective, as it is just as important to offer constructive intervention as it is to know the correct dose of drugs by heart, perhaps even more so. If one forgets the drug dose, it can be looked up quickly or confirmed by a peer. But having the courage and confidence to step up and offer intervention when it is critical is not something you can pull from a text. It is a cultural attitude in healthcare that we should all support and encourage.



We all know by now to read back telephone orders in order to confirm what the prescriber said. Not only is this a good practice, but it is a longstanding Joint Commission goal.[5] This is done to ensure what was heard was correct. Verbal orders in the hospital setting are reserved for true emergencies, such as a code. By repeating back verbal orders during a code, we are closing the

loop with the person conveying the message. Closing the loop allows the senders of the message to hear what they said reflected back to them, and to confirm that their message was received correctly. This is critical because in times of stress, we may not say exactly what we are thinking or mean to say. By repeating it back, we can be sure the message sent was indeed the intended one. Repeating back orders verbally forces us to confirm what was heard *and* makes everyone in the room aware of what is being done next. By repeating the order back verbally, any errors made by the practitioner sending or receiving the message have an increased likelihood of being caught and corrected. Very few mistakes are caused by one factor alone, but are often a result of multiple failures within the healthcare system. Closing the loop and repeating the order back gives the sender an opportunity to fix a mistake. It also gives everyone listening a chance to correct the error too. Staff may feel that this is unnecessary and

"Q: In an emergency situation such as a code in the ER, if the physician calls out the medication order and the RN repeats it back before administering the drug, and the code recorder is documenting the name of the drug, dose, time, route, and rate, is this acceptable?

"A: Yes. In certain situations such as a code or in the OR, it may not be feasible to do a formal "read-back." In such cases, "repeat-back" is acceptable".

(2008) Joint Commission Website [6]

is a waste of time in an emergency but, in reality, it only takes about 5 seconds to repeat an order. It can be done simultaneously as one is opening packaging on medication or charging a defibrillator.

Preconceived Notions

A resuscitation team consists of members with varying backgrounds, educational levels, and experiences all coming together very quickly. The team members may not even have met each other before the code. We each bring with us our own perspective, communication style, and cultural identity. One way we can improve communication between individuals is to use common language and active listening. Our common language is based on ACLS, and all providers should remain current in their certification. Active listening includes processing all the signals that are sent, including body language. "Human beings tend to process what they hear over three times faster than the average rate of speech. The active listener uses this opportunity to organize the information received into key points rather than becoming distracted while the sender completes the transition."[7] Active listeners also clarify anything that is not understood. I have witnessed a code where the doctor ordered an Amiodarone infusion for the patient. He said, "Hang the drip." The nurse who had just walked in the room saw the patient in V-Tach. She then asked the documenting staff nurse if the patient had already had Amiodarone. The documenting nurse said, "Yes, he has had 300 mg IV already." The nurse assumed since the patient now had a pulse, that the doctor wanted the maintenance dose, so she mixed it and hung it a few minutes later. Upon starting the infusion, the patient lost his pulse and remained in V-Tach. The doctor asked, "Why are you hanging that big bag, I

wanted the 150 mg second dose?" This mistake could have been avoided if the doctor had given clear orders, if the nurse had repeated them back, or if the nurse had stopped to clarify the dose and rate of the infusion. If the nurse had been comfortable addressing the physician in this manner, she would not have needed to ask the documenting nurse for clarification. By taking a standardized communication approach during resuscitation, the emphasis is on the process, not the person carrying it out.

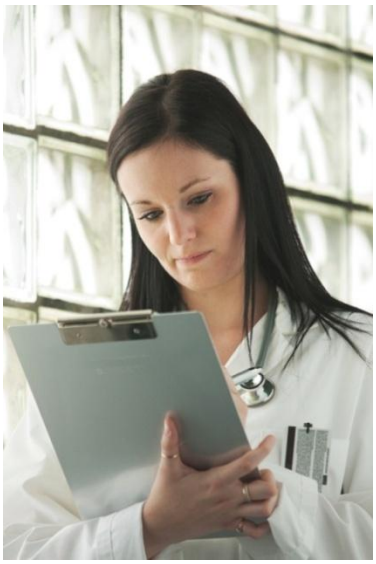
Algorithms to the Rescue

Everyone who is an ACLS provider should learn the algorithms for ALCS and understand the sequence. Frequent reviews are often needed to keep these fresh in your mind. Being familiar with the drugs, doses, and indications for use is imperative. Knowing what you are doing will give you the confidence to stop, question, and intervene when another provider commits an error. But relying on memory alone can set you up for failure, as we are all human. Having copies of the algorithm in your pocket or posted in code rooms or medication cabinets acts as a very valuable resource. It can be referenced quickly and also shown to the other practitioner when there is a question. Holding out the algorithm card and saying, "Did you want 3 mg of Atropine? The algorithm calls for 0.5 mg of Atropine," is a very concrete, non-judgmental way to communicate to the other person a possible error. Making suggestions of other treatment alternatives is also another way to respectfully let the other person know that you think he or she may be taking the wrong action. It also takes the emphasis out of who is right or wrong, as the focus is now on the algorithm.

Talk to your Recorder

Documentation is critical written communication during a code. This piece of communication should be in a structured format that is easy to follow. Regardless of the format, paper or electronic, the person documenting should be familiar with the process. For this reason, an experienced staff member is a good choice for the role. The person documenting has a crucial role in communicating and summarizing what has been done for the rest of the team. The Recorder will frequently be asked how long since the last dose of a drug, how long the code has been going on, and if the 2 minute cycle of CPR has occurred. Therefore, when a drug or treatment is administered, it should be clearly communicated to the staff member documenting. A simple statement such as, "Epinephrine 1 milligram administered," after the drug is given will let the staff member documenting know what time the drug was actually given. Make eye contact with the Recorder while saying this so he or she can acknowledge what was said either verbally or non-verbally, such as with a nod of the head.

One at a Time Please!



Okay, so you don't have to raise your hands in a code, but everyone cannot speak at once. If you have ever been to a code where many people are present and everyone is talking, it gets very noisy and confusing. Eliminate this by not talking unless it is absolutely necessary to treat the patient or for safety of the staff.

This is not the time for conjecture about facts unrelated to the code or for chatter. If there are too many people in the room without clear roles, ask them to leave in order to better care for the patient. Speak in a calm but assertive manner; this is no time to be shy. Conversely, shouting does not help and often gets other code team members upset or anxious. Codes are stressful enough! Having a calm but assertive demeanor will help communicate the emergency at hand. Team members should not be insulted by commands and autocratic leadership style during a code. This is a necessary leadership dynamic during life-and-death situations, and the intent is to communicate effectively. Clearly identifying team roles will help everyone understand who the team leader is, and the leader should be doing most of the talking. These behaviors do not come naturally to most of us but must be learned over time. Training through frequent mock codes or simulation is a way to model these behaviors for staff. Specific behaviors that measure teamwork competency include, "shared mental model, mental rehearsal, situational awareness, cross-monitoring, closed-loop communication, open communication, flattened hierarchy, role clarity, and anticipatory response." [10]

In summary, effective communication in emergency situations can be achieved through active listening, closed-loop communication, critical interventions, and respect. This simple act of mutual respect may seem the most obvious of all basic practices, but it is critical and often not done. If the MD in the opening scenario had not listened to Karen the RN, the ending may have not been the same.

"You mean 0.1 mg, of 1:1000 Epinephrine, SC…right Bob?" Karen answered back again while drawing up the medication in the room, as time was of the essence.

Bob followed Karen into the room and put the order sheet down on the medication counter.

"Yes, I'll write it down correctly, too" Bob said as he scribbled out his order he had just written hastily on the order sheet. Karen knew exactly what he meant, as she had worked with Bob for years now and could almost anticipate what he was going to say or order most of the time . She was very glad she clarified what he said as it was critical to her small patient.

"You're just bound and determined not to let me overdose that kid, aren't you?" Bob, said quietly as Karen drew up the med. "Thank you."

For more reading on team communication and patient safety, refer to the following references.

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Appendix H:

National EMS Culture of Safety

Strategy for a National EMS Culture of Safety

10/03/2013

This project was produced under a cooperative agreement between the National Highway Traffic Safety Administration (NHTSA), with support from the Health Resources and Services Administration's (HRSA) EMS for Children (EMSC) Program, and the American College of Emergency Physicians (ACEP).

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Part 5: Conclusion & Next Steps

Appendices

Part 1
Summary, Vision & Goals

I. Summary

Emergency medical services (EMS) is a critical component of the nation's healthcare system. In the U.S., EMS personnel respond to an estimated 37 million calls per year.[1] EMS is also an integral component of the nation's disaster response system.[2]

In recent years, cultural and operational safety advances have been broadly implemented in many healthcare settings, as well as aviation and other high-consequence fields. Yet, too often, the very emergency medical system that people count on for help unintentionally risks or even causes preventable harm to three related groups: EMS personnel, patients and members of the community.

Risk of Harm to EMS Personnel: Regardless of their location or the type of system in which they work, EMS personnel are expected (and often expect themselves) to do their work under difficult, unpredictable and rapidly changing circumstances. They may work long hours, in harsh environments, with limited information, assistance, supervision and resources to accomplish their mission. In the course of their work, they may be exposed to risks such as infectious organisms, emotional stress, fatigue, physical violence, occupational injury, vehicle crashes, and personal liability. They are more than 2-1/2 times likelier than the average worker to be killed on the job,[3] and their transportation-related injury rate is five times higher than average.[4]

Risk of Harm to Patients: In 1999, the Institute of Medicine report *To Err Is Human* called the attention of the public and the medical community to the topic of preventable adverse medical events. Since then, the nation's healthcare system has moved toward a culture of safety in many inpatient and outpatient settings. But these concepts and practices have yet to be widely embraced in the EMS community.

Risk of Harm to Members of the Community: EMS risks causing harm to the public. An example of this is the interaction between an ambulance responding to an emergency event and the general motoring public.

An Urgent Problem of Unknown Scope

It is difficult to measure the extent of harm caused to each of these three groups, and thus to create tailored solutions and measure their effect. Because reporting requirements and mechanisms are incomplete at best, reliable data are sparse and capacity for research is limited. Concerns over privacy laws, tort liability, trade secrets and potential public embarrassment hamper sharing of information that could be used to understand risks and identify system-level opportunities for improvement. A lack of standardization complicates efforts to aggregate and assess even available data. Because of these and related factors, EMS is severely limited in its ability to support policy initiatives, funding requests, quality improvement or even many day-to-day operational decisions on scientifically defensible, data-driven information.

A further complication involves the general approach to risk in EMS. An adverse event in EMS is defined as "a harmful *or potentially harmful* event during the continuum of EMS care that potentially preventable and thus independent of the progression of the patient's condition"[5]

(emphasis added). But EMS has more typically targeted the event that causes harm than circumstances that increase risk of harm. Many of the metrics related to safety in EMS are, accordingly, related to actual events rather than risk. More robust data that supports sophisticated analysis is needed to take a step back from the harmful event itself and focus on the risky environment that promoted it.

Given the limitations in data, it is challenging to make an evidence-based, scientifically defensible argument supporting the need for improvements in EMS safety. Regardless of these factors, however, it is the consensus of the EMS community—expressed through the more than 20 stakeholder groups contributing to this project, and by the general EMS community via open meetings and a public comment process—that it would be unacceptable and irresponsible to withhold action until some unknown future point when an ironclad case can be made for improving safety in EMS.

EMS safety is a problem that demands to be solved. This Strategy is intended to shift the status quo and chart a new course that will support a culture of safety in EMS. The almost 1 million EMS professionals in the U.S.—and the hundreds of millions of citizens who expect and deserve functional, efficient, professional emergency medical services to be there for every emergency and every disaster—are all depending on efforts to create a safer EMS system.

Strategy Background

This Strategy stems from a 2009 recommendation by the National Emergency Medical Services Advisory Council (NEMSAC) for the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) to create a strategy for building a culture of safety in EMS. NEMSAC is a Federal advisory committee of EMS representatives and consumers that provides advice and recommendations to the Secretary of Transportation and to the Federal Interagency Committee on Emergency Medical Services (FICEMS) on matters relating to EMS.

Process: The Strategy was developed in a three-year, iterative process to allow for collaboration and input from a broad group of stakeholders both inside and outside the EMS community. The Strategy has been guided by a Steering Committee of experts representing a broad variety of EMS constituencies. The process also included public review and comment.

Scope and Intended Audience: The Strategy is a vision-oriented effort on a national scale. It does not attempt to serve as a substitute for the work of qualified researchers, scientists and technical experts. Rather, it is an effort to further that work by supporting, enhancing or creating channels for its advancement, standardization, practical application and widespread adoption.

The Strategy was commissioned as a high-level document. It is intended to guide decision-makers on the priorities, concerns and commitment of EMS stakeholders. The Strategy is not intended as a practical safety manual, nor is it designed for everyday use by EMS provider agencies. As such, it does not address highly detailed factors or make specific recommendations about operations, vehicles, equipment, medical procedures, etc.

This document is intended primarily for EMS leaders and organizations that are in a position to directly or indirectly support development of a culture of safety. The document is written broadly to include stakeholders both inside and outside EMS. While several EMS stakeholder organizations have created specific definitions of what EMS encompasses, the Steering Committee recognizes that emergency medical services is in a time of rapid evolution and that the existing definitions may well not capture what EMS evolves into over the next 10 to 15 years. Regardless of what needs EMS fills within the healthcare continuum and the community, safety must be a core value and be integrated into every aspect of EMS in the future.

The Strategy is intended to be well connected to science, best practices and trends both within and outside EMS, across healthcare and business. This intent is limited by the previously detailed realities limiting scientific support. Indeed, a significant benefit to the promulgation of the Strategy itself is the potential to spur research, data systems and reporting that are currently lacking. Accordingly, the Strategy incorporates a combination of proven concepts and promising ideas.

The Strategy's Six Core Elements

This Strategy consists of six essential elements for advancing a culture of safety in EMS. These elements are described in greater depth beginning on page 34 of this document.

Just Culture: The Strategy envisions a Culture of Safety within EMS that embodies values similar to those of a school of thought known as Just Culture. Widely adopted throughout healthcare, aviation and a growing number of other fields, Just Culture is an *open-source, non-proprietary approach that embodies fairness and promotes accountability*. It describes an organizational environment that encourages individuals to report mistakes, allowing a structured assessment that includes the risks that led to the error. By focusing on risk rather than negative outcomes, by addressing system factors, and by holding both systems and individuals accountable, factors that have or could lead to future errors can be modified in a collaborative way, without blaming or punishing.

Just Culture is not a substitute for a comprehensive safety management system. Its inclusion as a key element in this Strategy is intended as an important, appealing and achievable first step toward broader cultural change.

More information about the role of Just Culture in an EMS culture of safety appears beginning on page 37 of this document.

Coordinated Support and Resources: Broadly advancing EMS safety in the most consistent and expedient way requires support, coordination, monitoring of progress, and sharing of centralized information and related resources to the EMS community. This Strategy envisions a centralized function to provide this guidance, encompassing representation from a broad spectrum of stakeholder groups. This function would be advisory and guiding, rather than one of oversight, regulation or enforcement authority.

More information about the role of coordinated support and resources in an EMS culture of safety appears beginning on page 40 of this document.

EMS Safety Data System: There is an urgent need to better understand the scope, frequency and nature of EMS responder injuries, adverse medical events and adverse events involving the community. Currently, data that could help build an understanding of these issues may be housed in many different places, and is not reported uniformly.

Improved data accessibility can enable meaningful use of that data to better understand issues, support recommendations and provide appropriate conclusions. As a first key step toward data-driven policy and decision-making, an EMS Safety Data System is envisioned, not as a new database, but as a national, robust, well-designed, secure data system linking and communicating with existing data systems to encompass key information about EMS safety. This Safety Data System would be made available for researchers and policy-makers, as well as use by national stakeholder organizations and individual EMS provider agencies.

More information about the role of an EMS safety data system in an EMS culture of safety appears beginning on page 44 of this document.

EMS Education Initiatives: EMS education (both initial programs and continuing education) represents a crucial opportunity for delivering both responder safety and patient safety information, changing attitudes, and creating a national culture of safety in EMS. The Strategy envisions delivering education to both leaders and practitioners at all levels.

The Strategy includes a significant evolution of the EMS education process, in which the values and practical elements of a culture of safety are *fully integrated into each component of EMS education.* Under this model, awareness of the safety of responders, patients and the public would become a pervasive consideration.

More information about the role of EMS education in an EMS culture of safety appears beginning on page 48 of this document.

EMS Safety Standards: The promotion of standards in EMS can enhance safety for EMS responders, patients and members of the public whom EMS encounters in the course of its work. High priority should be given to standards that support safety not only from an operational or technical viewpoint, but from a cultural perspective as well. Standards should be selected or developed following an evidence-based approach whenever possible—that is, one based on literature/evidence, data and consensus.

More information about the role of EMS safety standards in an EMS culture of safety appears beginning on page 51 of this document.

Requirements for Reporting and Investigation: To successfully implement a culture of safety in EMS that improves safety for responders, patients and members of the public, mandates to report standardized data by all EMS provider agencies are needed to support the creation and population of the national EMS safety data system.

Steps for developing reporting and investigation requirements may include determining what data types are necessary and useful; describing what data is already be available or mandated; learning from those with hands-on experience; exploring options for an authorized investigative body; and identifying best practices.

More information about the role of reporting and investigation requirements in an EMS culture of safety appears beginning on page 53 of this document.

II. Vision

EMS community leaders envision an EMS Culture of Safety as one in which safety considerations and risk awareness permeate the full spectrum of activities of EMS everywhere, every day—by design, attitude and habit. This Strategy document is intended to change the status quo by creating, encouraging, and supporting a cultural shift that improves the linked domains of responder, patient, and community safety.

III. Goals

EMS exists to make a difference in people's lives, often at their time of greatest need. This Strategy represents a unique opportunity to positively impact the lives of EMS personnel, their patients and the general public by creating and promoting a culture of safety.

Safety culture refers to a collection of core values that provide a frame of reference for leadership and workers, and influence shared beliefs, practices, rituals, norms and behaviors related to safety. A positive safety culture is expected to result in decreased risk, fewer errors, adverse events and other negative safety outcomes.

At a high level, the goal is an EMS culture in which safety considerations permeate the full spectrum of activities of EMS leaders and practitioners everywhere, every day—by design, attitude and habit.

This Strategy is intended to create, encourage and support a cultural movement, structures, resources, reporting mechanisms and related supporting elements that advance improved responder safety, improved patient safety, and improved safety of the community, each closely linked to the others.

Implementation of the Strategy elements is expected to lead to:

An environment of empowerment. In a culture of safety, all team members are able to speak up about unsafe practices, in real time, as well as to propose ways to operate more safely with appropriate accountability. In such an environment, every manager and every member of the team, regardless of level of training or tenure, is expected to act in the interest of responder safety, patient safety and safety of the community.

An environment of knowledge. Both informed leadership and an informed workforce are essential components of a culture of safety. This includes educational initiatives for leaders and practitioners as well as systematic efforts to gather and analyze data on responder safety and patient safety.

An environment of openness and inclusiveness at every level. In high-consequence industries, punishing people for mistakes merely encourages them to hide unsafe behaviors and adverse outcomes. Openness to admitting errors and examining the processes and risks that led to them is a key part of the vision for a culture of safety. The vision also encompasses an environment of inclusiveness at every level, with national resources and leadership to support state, regional, local and organizational efforts.

An environment of improvement. Value can be created via enhanced data and quality measurement systems related to efforts to improve safety. This is an especially important consideration in anticipation of a direct connection between quality metrics in EMS and reimbursement. Improvements in safety can lead to reductions in responder deaths, injuries and shortened careers, reductions in adverse medical events, as well as reductions in property damage, injuries and deaths among members of the community whom EMS encounters (i.e., crashes involving EMS vehicles).

A culture of safety is not an end unto itself, but an ongoing effort to improve. While substantial cultural change takes considerable time, and because EMS is a dynamically evolving profession, the Strategy is intended to be flexible and applicable to EMS as it continues to mature as a partner in the healthcare system.

IV. Guiding Principles Used in Developing the Strategy

The following principles were drafted collaboratively by the Steering Committee. They represent fundamentals that are intended to permeate the development process and tie the work to the EMS community. These concepts are critical to the successful development and implementation of the Strategy. In some cases, they are acknowledgements of limitations or realities that materially affect the chances for acceptance and successful implementation of the Strategy in the EMS community. In every instance, they guide decision-making and priority-setting.

1. **The Strategy must consider the parallel goals of responder safety, patient safety and safety of the community.** Although initiatives and desired outcomes described in the Strategy necessarily apply to patient safety, provider safety and safety of the public in unequal proportions, the Strategy itself is an effort to advance all three of these goals.

2. **The Strategy should capitalize on the common priority—concern for the patient.** Despite their varied nature, EMS systems, leaders and field personnel share a common concern for the well-being of patients. Wherever possible, the Strategy should tap into this universal motivation.

3. **The Strategy must allow that creating a culture of safety in EMS will take years to accomplish.** While the Strategy seeks opportunities to gain benefits quickly wherever possible, it also acknowledges the accepted view among experts that true cultural change often takes a full generation, up to 20 years. Accordingly, the Strategy focuses not only on today's EMS managers and practitioners, but those who will be leading the field and delivering patient care up to two decades from now.

4. **The Strategy must consider the disparate nature of EMS.** EMS is a discipline with dramatic structural and cultural variation, as well as multiple delivery models and levels. To be successful, the Strategy must recognize that some concepts may work better in certain segments of the EMS community than others. Wherever possible, the Strategy must avoid blanket assumptions and "one-size-fits-all" solutions.

5. **The Strategy must respect the unique set of circumstances and environments in which EMS functions.** EMS operates at the intersection of public health, public safety and medicine; it is simultaneously part of, and yet not completely within, all three spheres, each with its own set of structural and cultural influences, restrictions and opportunities. The sphere in which EMS operates is complex and frequently changing, and its mission is complicated by emotionally charged situations and public expectations that are not always reasonable or realistic.

6. **The Strategy must acknowledge that EMS typically has limited resources.** Although the future is not known, many EMS leaders at both the local and national level anticipate increasing difficulty in meeting increasing demand for services with budgets that in many cases are diminishing. And because leaders typically are preoccupied with maintaining critical services on a day-to-day basis, gaining broad

support for safety initiatives may require sustained effort and/or new funding.

7. **The Strategy should incorporate lessons learned from other fields.** EMS is often assumed to be an inherently risky profession, an assumption that likely complicates the creation of a culture of safety. However, other disciplines that carry considerable inherent risks (e.g., aviation, surgery, anesthesiology) have achieved noteworthy safety records through systematic efforts. The Strategy should identify cultural and practical factors that have been shown to improve safety in these disciplines.

8. **The Strategy should be evidence-based within reason.** There is a growing movement supporting evidence-based decision-making at all levels in EMS, and the Strategy should be based on data and evidence wherever possible. However, the Strategy must also acknowledge the current limitations in available EMS data, particularly related to responder safety, patient safety and community safety. Accordingly, the Strategy should consider concepts that are reasonably believed to carry potential benefits, even when there is limited scientific evidence or data. Wherever possible, the Strategy should call for data-gathering according to accepted standards.

9. **The Strategy should seek a balance between cultural and practical considerations.** The culture of EMS itself tends to be practical, objective, action-oriented and "hands-on," rather than theoretical, conceptual, academic or abstract. Indeed, the very concept of a "culture of safety" may be received with skepticism, as may the idea that the cultural aspects of safety are as important as utilitarian items like checklists in improving safety outcomes. Elements that come from this project must bridge these inherently contrasting factors. Care should be taken to avoid the temptation to focus on practical considerations to the exclusion of strategic focus.

10. **The Strategy should seek opportunities to build on existing foundations.** To be successful, the Strategy should avoid redundancies to the greatest degree possible. It should consider the findings and recommendations of past white papers that address issues of culture and safety, and it should seek to connect, not re-create, entities, resources and mechanisms that already exist.

11. **The Strategy should strive to be emulated by others.** EMS is a high-profile, critical service that fundamentally affects the lives of millions of American families. The Strategy presents an opportunity to further the EMS mission by serving as a template for other professions and industries to follow in building their own culture of safety.

Part 2
Safety of EMS Personnel, Patients & the Community

I. EMS Personnel Safety

An emergency responder who is injured or killed is unable to assist someone who needs help, and a responder injury diverts resources (e.g., personnel, vehicles, medical facilities) that would otherwise be available to assist the public. With this in mind, and in recognition of the fact that emergency responders deserve a system that values their safety, it is acknowledged that protecting EMS personnel is paramount.

Nevertheless, the job is a dangerous one for EMS personnel. The occupational fatality rate among EMS workers is 12.7 per 100,000 workers per year, more than twice the national average for all occupations and comparable to rates for police and firefighters.[6] The rate of non-fatal injuries among EMTs and paramedics was found to be 34.6 per 100 full-time workers per year, a rate more than five times higher than the national average for all workers.[7] Research has also shown that female EMS workers have a disproportionately high risk of injury[8] and that there are significant dangers associated with disaster responses.[9]

Work-related stress and fatigue are familiar themes to anyone working in the EMS field. Exposure to both chronic and critical incident stressors increases the risk of EMS personnel developing a posttraumatic stress reaction.[10] A study of associations between sleep quality, fatigue and safety outcomes in EMS identified 1.9 greater odds of injury, 2.2 greater odds of medical errors or adverse events, and 3.6 greater odds of safety-compromising behavior among fatigued respondents versus nonfatigued respondents.[11]

EMS personnel also risk exposure to violence and/or becoming the subject of violent assault on the job.[12] In one study in a large California EMS system, EMS personnel encountered some sort of violence in 8.5 percent of patient encounters, and were subjected to violence directed at them in 4.5 percent of patient encounters.[13] Of encounters where violence was directed at EMS personnel, 21 percent involved nonphysical (verbal) violence only, while 79 percent involved physical violence.

Transportation incidents present a significant risk for EMS personnel.[14] [15] [16] [17]Researchers have reported that: ambulance crashes result in twice as many injuries per crash as the national average;[18] 20 percent of transportation related injury cases result in 31 or more lost work days;[19] and 86 percent of all occupational fatalities among U.S. EMTs and paramedics are secondary to transportation events.[20]

This phenomenon is not only seen in the U.S., where the transportation related fatality rate for EMS workers is approximately five times higher than the national average;[21] it is also seen in Australia, where the transportation-related fatality rate for paramedics is three times higher than the rate for U.S. EMS workers.[22]

The good news related to transportation incidents comes from one of the first studies to document the results of an intervention to improve EMS safety. That study showed a 50 percent reduction in the ambulance collision rate following a multifactorial intervention.[23]

The occupational injury problem also has significant implications for EMS managers. For example, in the U.S., the employers' healthcare cost for EMT and paramedic occupational injuries is approximately $60,000 per 100 full time workers per year (these costs do not include the cost for replacement workers, early termination, etc.);[24] and 100 percent of litigation claims against one EMS agency came from transportation-related incidents.[25] Although the physical demands of emergency response are a leading cause of injuries, it is difficult to assess risk without better data, particularly for volunteers.[26]

There are also significant implications for EMS patients and communities. In one study of fatal ambulance crashes, eight of the 25 victims were identified as EMS personnel; 17 of the fatalities were patients, family members and community members.[27]

II. Patient Safety

A key goal of creating and implementing a culture of safety in EMS is to create improvements in patient safety. The Strategy defines patient safety in EMS as *preventing medical errors (such as administering an incorrect medication) and other adverse events (such as dropping a patient) and decreasing the chance of harm to patients should such events occur.*

According to the Institute for Healthcare Improvement (IHI), approximately 80 percent of medical errors in the hospital environment are system-derived.[28] And the prominent Institute of Medicine report *To Err Is Human: Building a Safer Healthcare System* notes:

> "The majority of medical errors do not result from individual recklessness or the actions of a particular group—this is not a 'bad apple' problem. More commonly, errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them."[29]

It is not reasonable to expect that even well-educated and qualified people with the best intentions can completely overcome the complexities of caring for patients in the dynamic, unpredictable context of prehospital care. The Strategy seeks to follow the IHI philosophy that when human beings are involved, mistakes will occur, and it is the responsibility of EMS leaders to design a system so that harm does not occur or is minimized.

Patient safety in the EMS setting has been poorly studied, with little data and limited trials of interventions designed to make EMS safer. A report from the Canadian Patient Safety Institute, *Patient Safety in Emergency Medical Services: Advancing and Aligning the Culture of Patient Safety in EMS,* identified the following themes in a systematic review of the literature relating to patient safety in EMS:[30]

- Clinical judgment
- Adverse events
- Ground vehicle safety
- Field intubation
- Air operations safety
- Interfacility transfer

The researchers reported that experts believe flawed decision-making by EMS personnel is overlooked too often when considering safety; the report further offered the opinion that the "most important risk" to safety is poor clinical judgment, with the "greatest safety feature of EMS systems" being good clinical judgment.

A 2004 study reported that 45 percent of EMTs identified at least one error in the year prior to the survey, and further demonstrated the willingness of EMS personnel to identify and report errors.[31] Additional studies have explored adverse events in EMS in the context of endotracheal tube placement, diagnostic accuracy, mathematical calculations, medication administration, and tort claims.[32, 33, 34, 35, 36, 37, 38, 39]

Children are at increased risk of adverse events in the prehospital setting,[40] and the consensus is that a safe environment with a high quality of care will reduce morbidity and mortality amont pediatric patients. Medication dosing errors in pediatric patients in the EMS setting have been poorly studied, at least in part because paramedics have infrequent encounters with pediatric patients. One Michigan State University study found that medications delivered in the prehospital care of children were frequently administered outside of the proper dose range when compared with patient weights recorded in the prehospital medical record, with a medication dosing error occurring in nearly 35 percent of drug administrations—nearly twice the rate at which medication dosing errors occur in hospitalized children.[41]

Although there has been far less research into patient safety and adverse events in EMS compared to other healthcare settings, the indications from various inpatient and outpatient epidemiology studies lead to a reasonable assumption that there is unrecognized and preventable harm in EMS.[42] Although more study is needed to quantify the dollars involved, it follows that there are corresponding costs to patients, EMS and the healthcare system, and society as a whole—and considerable savings to be realized from improved patient safety in EMS.

III. Safety of the Community

Harm to members of the public (i.e., non patients) resulting from EMS operations is even less studied than EMS responder safety or EMS patient safety. Scant, inconsistent or nonexistent reporting requirements make research difficult or impossible on a national level, but it is generally believed in the EMS community that the greatest risk to the public involves EMS vehicle operations (regardless of whether an EMS vehicle is actually involved in a crash or the crash occurs because of other drivers' sudden reactions to the presence of an emergency vehicle).

More research is needed before comprehensive efforts can be developed to reduce harm caused to the public by EMS operations. Meanwhile, it is reasonable to anticipate that systemic initiatives aimed at improving responder safety and patient safety will also result in improvements to the safety of the community.

Part 3
Cultural Considerations

I. Defining Culture

Because the Strategy seeks to influence EMS culture, it is helpful to define what culture is.

Former airline pilot and risk-management consultant Scott Griffith, who has worked extensively with organizations in high-risk disciplines, offers a definition of culture that is particularly applicable to the goals of the Strategy:

> **culture:** "*The way we do things around here.*"

This definition was selected for its simplicity and because it reveals the essence of what the Strategy seeks to tap into: the substantial power of culture to influence behavior, and, conversely, the potential for it to be shaped by the collective behaviors of the individuals in an organization.

Section 4-III of this document explores contemporary EMS culture and the role of responder safety and patient safety in EMS culture—in other words, "the way we do things around here now." (See page 26.)

II. Defining Culture of Safety

The Strategy subscribes to the following definition of a culture of safety, put forth by University of Illinois at Urbana-Champaign researchers Douglas A. Wiegmann, Hui Zhang, Terry von Thaden, Gungan Sharma and Alyssa Mitchell in a paper synthesizing safety culture research:[43]

> **Safety culture:** *"The enduring value and priority placed on worker and public safety by everyone in every group at every level of an organization. It refers to the extent to which individuals and groups will commit to personal responsibility for safety; act to preserve, enhance and communicate safety concerns; strive to actively learn, adapt and modify (both individual and organizational) behavior based on lessons learned from mistakes; and be rewarded in a manner consistent with these values."* [1]

Although it is the desire of this Strategy that safety become a permeating priority in EMS culture, it should also be acknowledged that organizational culture is complex, with many factors that are unrelated to safety.

The concept of a culture of safety is often attributed to analysis of the disaster at the Chernobyl Nuclear Power Plant in Ukraine in 1986—more specifically, reports commonly refer to the accident as resulting from a *lack* of a safety culture.

The concept of a culture of safety has also been applied extensively to such fields as aviation and healthcare (most often in the hospital setting). Much of the literature related to safety culture focuses on these disciplines.

It is possible to measure the culture of safety in an EMS organization, and although limited research is available, preliminary associations between safety culture, safety-related behaviors and safety outcomes have been observed. A 2008 report in Academic Emergency Medicine described EMS personnel's perception of the nature of adverse events and near-misses in out-of-hospital care.[44] The EMS Safety Attitudes Questionnaire (EMS-SAQ) measures workplace safety culture, and the EMS Safety Inventory (EMS-SI) captures self-reported safety outcomes from EMS workers. Collectively, these tools have been introduced to the EMS profession by Daniel Patterson, Ph.D., and colleagues, to benchmark safety attitudes within an organization.[45] The tools are used in the University of Pittsburgh Department of Emergency Medicine's EMSARN EMS Safety Culture Project (http://emergencymedicine.pitt.edu/research/emsarn/ems-safety-culture), an ongoing project that seeks to examine trends in EMS safety culture over time.

In a report published in *Prehospital Emergency Care* in 2010, the researchers noted a wide variation across EMS agencies in safety culture scores, with lower safety culture scores associated with increased annual agency patient contacts. The report did not cite the possibility of increased patient contact building reliance on shortcuts and at-risk behaviors that may be reinforced by few negative outcomes, or outcomes that were not clearly tied to

[1] Note: The researchers for the above-referenced report noted that while the term *safety climate* is sometimes used interchangeably with *safety culture* in published works, the former is more commonly used to refer to the perceived state of safety at a particular place at a particular time. The Strategy does not use *safety climate* as a synonym for *safety culture*.

behaviors. Their 2012 report in the same journal noted that individual EMS worker perceptions of workplace safety *culture* were associated with measures of patient and provider safety *outcomes*.[46] In that study, researchers included six domains of safety culture: safety climate, teamwork climate, perceptions of management, working conditions, stress recognition, and job satisfaction. Respondents who reported experiencing worker injury scored lower on five of the six domains than respondents who did not experience an injury. Respondents reporting an error or adverse event scored lower for four of the six domains, while respondents reporting safety-compromising behavior had lower safety culture scores for five of the six domains. The researchers described their findings as preliminary evidence of the association between safety culture and patient or provider safety outcomes.

In another study assessing the association between perceived safety culture and compliance with safety procedures in a busy urban EMS system, EMS workers with a high degree of perceived safety culture had twice the self-reported strict adherence to safe work practices as those without.[47] Frequent safety-related feedback and training was strongly associated with adherence to safe workplace behaviors.

The Strategy recognizes the importance of consistent definitions in supporting efforts to advance a culture of safety, particularly when it comes to measuring progress. There would be considerable benefit from efforts by qualified researchers to synthesize literature on nomenclature related to safety culture in EMS, or to publish recommended definitions.

III. Safety in the EMS Culture

EMS culture, or "the way we do things around here," exerts a powerful influence on the attitudes, expectations and behaviors of both organizations and individuals, particularly when it comes to responder safety, patient safety and the safety of the community. It is described in this document because it represents the "stage" on which the Strategy is anticipated to play out.

There is limited published information on *EMS safety culture* specifically, but a number of common themes in EMS culture may be relevant to safety, particularly in light of safety advances achieved in the cultures of other processions. It is typically believed by Strategy project stakeholders that *EMS culture* often:[48]

- Creates an expectation of high performance under difficult circumstances
- Expects individuals to be extremely vigilant 100 percent of the time
- Fails to properly motivate individuals to speak up about unsafe systems or practices
- Tends to punish mistakes, especially depending on the severity of the outcome
- Accepts, overlooks, or encourages individuals to work around system-related problems (until harm results, in which case the individuals are subjected to punishment)

EMS culture in general is influenced by a variety of factors, many of which in turn influence safety culture. The following influencers were noted by the Steering Committee, and are generally believed to be relevant to a culture of safety in EMS:

Structural & Cultural Factors

Variation in Delivery Models. As noted earlier in this document, EMS is a discipline with dramatic structural and cultural variation, multiple delivery models and levels. EMS is provided by fire departments; stand-alone EMS agencies, whether municipal, private or not-for-profit; hospitals; volunteer agencies; state, federal, and tribal organizations; interfacility transport agencies; air-medical services; military; law enforcement; and industrial agencies, among others, each with their own rules, regulations, cultures and resources.

EMS also overlaps with public health, public safety and medicine. While these three disciplines have a lot to do with what EMS does, EMS represents only a small segment of each of these disciplines' missions. Accordingly, although EMS does have a culture of its own, it is also susceptible to the influences of the cultures with which it overlaps.

Volunteerism. Another variable is volunteerism in EMS, and its unique (and changing) role in many rural and suburban communities, especially in terms of recruiting, staffing, training, accountability and oversight.

Operational & System Factors

Resource Limitations. EMS is almost always felt to have limited resources—financial resources, human resources and other resources. Many EMS leaders at both the local and national levels have expressed concerns about the ability of EMS organizations to balance shrinking resources with increasing demand for services. In addition, EMS leaders both individually and through national organizations have voiced serious concerns about the current reimbursement model, which only partially funds most EMS operations. At the organizational level, resource limitations act as a distraction from safety concerns for leaders, and also set up a sometimes-unvoiced but powerful organizational expectation that safety is conditioned on availability of resources.

Pervasive underfunding also results in a pay structure in many systems that is well below most other healthcare providers, leading many EMS professionals to quit early in their careers, or to work two or three jobs for as long as they can and then quit or transition to other healthcare jobs. This also leads to overtired, overworked EMS personnel who are more likely to make errors or engage in at-risk behaviors. EMS pay structure in the U.S. contrasts with Australia, for example, where paramedics are well paid and the majority remain in the profession through retirement. The cost to society—and the taxpayer—is significant and includes the loss of experienced clinicians.[49]

Lack of a Systems Approach. EMS organizations typically follow an event-based approach to safety concerns—yet it is a systems-oriented approach that has made an impact on safety in other fields. This concern encompasses both general lack of uniform EMS systems, even at the state level, and a lack of consistency in the concept of safety itself.

Operational Performance Pressures. Strategy stakeholders also observed that EMS personnel are often under considerable pressure to maintain high operational performance (commonly defined as productivity and compliance with contractual or policy-driven requirements for response times) despite limited resources, and that operational performance is sometimes communicated as the top organizational priority, intentionally or not. Under such circumstances, safety goals may be seen as impeding such performance, and they are subjugated. (See “Focus on Response Times,” below.)

Focus on Response Times. One of the few metrics that is routinely measured in EMS organizations is response times, despite scant evidence that response time makes a clinical difference. EMS provider organizations are often contractually held to a specific response-time performance standard, sometimes with fines levied for noncompliance. This both reinforces the perceived need to rush and creates organizational incentives to do so. The resulting sense of pervasive urgency in turn feeds the belief in the EMS culture that taking chances is part of “trying our hardest.”

Focusing on response times may also distract from focusing on quality clinical care or safety.

Gaps in Leadership Development. There are a number of methods that have proven effective in other healthcare and business disciplines for assessing, selecting and developing leaders. These best practices are not entirely absent from EMS, but the EMS community has not broadly or systematically adopted them. This is evident in the paper *Emergency Medical Services Management and Leadership Development in America: An Agenda for the Future*, which notes challenges and gaps in leadership education. A leadership competency program currently under development by the National EMS Management Association (NEMSMA) attempts to standardize leadership education and requirements. EMS leaders also would benefit from more robust, centralized resources for safety practices to implement in their organizations, both clinically and operationally.

Reinforcement of Unsafe Behaviors. Too often in EMS, unsafe outcomes result in blaming and punishing the individual while overlooking system or process shortcomings, despite an environment in which risk-taking is considered part of the job as long as nothing bad happens. This is a real-world, textbook example of David Marx's observation that unsafe behaviors are reinforced when they are "rewarded"—i.e., nothing bad happens and the at-risk behavior is not addressed. In a strategy document that could have been written specifically for EMS, the National Fallen Firefighters Foundation describes a "cycle of unsafe behavior reinforcing itself [and is] driven underground by departments who ignore the messages of near-misses.... [leads to] a continual cycle of negative, unsafe behaviors that result in avoidable tragedies. They occur because the organizational culture permits and perpetuates them."[50]

Possible Disconnect Between Clinicians and Leadership. In a study of safety culture in 15 California hospitals that has implications for EMS organizations, researchers found "definite discrepancy" in perceptions about safety between non-clinician senior managers and front-line clinical workers, with clinicians giving more problematic responses. "This could make it hard for non-clinician executives to understand the true state of their organization, to determine changes needed, and to assess their attempts to create and maintain a culture of safety," the researchers wrote. "Long-term progress may need to include interventions specifically aimed at improving safety culture and breaking down barriers between managers and front line workers," they concluded.[51] Whether they personally have clinical experience or not, the best EMS leaders understand the critical importance of emphasizing both quality of care/clinical outcomes and operational imperatives; such an approach is essential to a culture of safety at the organizational level.

Long Shifts. Many EMS systems maintain a 24-hour (or longer shift) schedule. The link between fatigue and poor safety outcomes is well documented throughout the literature. When EMS personnel do not get sufficient uninterrupted sleep, fatigue may cause increased risk to responder safety, patient safety and the safety of the community.

Adapted Practices and Equipment. EMS culture is built on a history of adapting practices, vehicles and equipment originally developed for other settings (ER, ICU, OR, mortuary) for use in a prehospital care setting. In recent years, a growing list of equipment and protocols have emerged designed exclusively for field use, but the industry historically has not demanded its own set of tools. In many cases, the market has not been large enough for manufacturers to create EMS-specific products. The general acceptance of resource limitations within the EMS profession may lead to a corresponding acceptance of the status quo. In such an environment, adapting existing practices *itself* becomes a "best practice."

Disasters. Stakeholders further noted that safety goals are sometimes compromised when local EMS organizations respond to disasters or large-scale incidents outside the scope of normal operations.

Attitude/Individual Factors

Misplaced Beliefs. Stakeholders also observed that responder safety and patient safety suffer from the widespread cultural belief in "going all out" for patients, which can lead to poor safety choices and unsafe actions (such as driving unsafely, rushing procedures, taking shortcuts, failing to use personal protective equipment, etc.). A related factor is the misplaced belief that "doing things" equals "helping"—that is, a genuine desire to help the patient may lead to unnecessarily aggressive treatment that carries risks that outweigh the potential benefit to the patient. For a culture that is so action-oriented, it is difficult to accept the idea that intervention does not always lead to better outcomes, and can even cause harm—and that sometimes doing nothing is the best treatment.

This factor is complicated by variability in practice among (and sometimes within) EMS systems. Misperceptions may be further reinforced by gaps or delays in translating current science to the field, a phenomenon in which even accepted evidence takes a long time to be reflected in alterations to protocols, particularly when information is not readily available for leaders to make appropriate system/practice changes. There is also a need for field practitioners to have education, information and the clinical judgment to understand the "why" of evidence-based changes—not merely technical proficiency in proscribed skills.[52] A "why" mindset may enable field practitioners to support changes and stop doing things that aren't safe or that no longer represent acceptable practice.

Stakeholders further noted that both responder-safety and patient-safety protocols are often treated as optional when they are viewed as hindering care, comfort or convenience.

Public Misperceptions About the Nature of EMS Work. Depictions of EMS in popular culture, particularly in television, movies and the media, often reinforce the urgent, life-and-death nature of the work, and contribute to the impression that risk-taking is part of the job. The public may also harbor unrealistic expectations about

"heroes who risk it all when lives are on the line." Such misperceptions have the potential to attract certain candidates who are inappropriately drawn to the perceived adventures that accompany a career involving lights and sirens and life-and-death situations. The concept of tombstone courage (that is, courageous but risky behavior that gets EMS personnel killed) and the importance of responder safety have long been presented in EMS training programs, but may be diluted by traditions, peer pressure and practices such as commendations for heroism, even posthumously. (See statement from the National Fallen Firefighters Foundation under "Reinforcement of Unsafe Behaviors," above.)

Misperceptions Regarding Patient Safety. Although no published research supports this, there is an anecdotal belief, expressed by EMS stakeholders attending the National EMS Culture of Safety Conference in June 2011 in Washington, D.C., that many EMS personnel do not fully understand the concept of patient safety, particularly when it comes to medical errors or harm that results from errors of commission or omission. Typically, they think of patient safety as protecting the patient from injury resulting from drops or crashes.

Cynicism/Mistrust of Leadership. EMS stakeholders participating in developing this strategy described a common (although not universal) cultural phenomenon in which field-level EMS practitioners do not trust leadership and/or respond cynically to leadership directives and initiatives. This may be rooted in the often unreasonable expectations that individuals must somehow perform to a very high standard despite limited resources and difficult circumstances, combined with a sense that administrators are too far removed from the reality of the field to understand the concerns of EMS field personnel. This could present an obstacle when it comes to implementing a culture of safety, although experts report successes with organizations that sincerely invest in safety-culture initiatives with visible, firm support from top management.

"Check the Box" Safety. EMS culture often treats safety as a one-time, static consideration, checklist-style. EMT and paramedic testing typically requires candidates to ask whether the scene is safe before entering, but the answer is almost always yes, and safety is not typically a permeating consideration in such testing. This reinforces a limited view of safety, commonly focused more on external or event-based safety problems such as traffic hazards or downed power lines, rather than on internal, system or process-related safety concerns.

"Undoing" Education. In some cases, newly hired EMTs and paramedics are paired with a partner or field training officer who either intentionally or unintentionally "undoes" responder-safety and patient-safety habits and beliefs instilled in the new employee's initial education program. This is commonly described as the "that was all well and good in the classroom, but now let me show you how we do it in the real world" effect.

Cultural Attitudes About Provider Mental Health. Cultural attitudes toward provider mental health are a powerful influence on whether or not a responder is willing to seek help for stress reactions related to EMS work. There is direct and powerful messaging to new EMS personnel that "if you can't handle it, you don't

belong here." This attitude discourages conversation that may normalize stress reactions and allow for permission to seek assistance when needed; it also stigmatizes those who may be dealing with posttraumatic stress. EMS personnel may not be willing or able to admit when they need assistance, and may continue to work even when they are impaired. Even sub-threshold PTSD has been found to cause levels of social and occupational impairment equivalent to that caused by PTSD, with a presumed corresponding reduction in ability to function safely.[53]

Historical Lack of National Priority. Prior to the NEMSAC recommendation that led to this Strategy, there have been a number of prominent documents that have helped shape the course of EMS in the U.S. (1966 White Paper, 1996 *EMS Agenda for the Future*, 1998 *Leadership Guide to Quality Improvement for Emergency Medical Services Systems*, 2000 *EMS Education Agenda for the Future: A Systems Approach*, 2004 *Rural and Frontier Emergency Medical Services Agenda for the Future*, 2006 National Institutes of Medicine *Future of Emergency Care: Emergency Medical Services at the Crossroads*, 2008 *EMS Workforce for the 21st Century: A National Assessment*, 2011 *EMS Workforce Agenda for the Future*, and others). Many of these documents reference responder safety or patient safety in EMS, either directly or indirectly, but until NEMSAC's recommendation, neither topic had risen to the level of a pressing, high-priority need.

IV. Importance of Both Leadership & Field Personnel in Building a Culture of Safety

Numerous published works addressing safety culture have noted the essential role played by the leadership of individual organizations, especially when it comes to patient safety. Indeed, the Institute for Healthcare Innovation (IHI)'s white paper *Leadership Guide to Patient Safety* characterizes the critical role of senior leaders thusly: [54]

> "Leadership is the critical element in a successful patient safety program and is non-delegable. Only senior leaders can productively direct efforts in their health care organizations to foster the culture and commitment required to address the underlying systems causes of medical errors and harm to patients."

The IHI paper identifies the unique role of an organization's leadership in:

- Establishing the value system in the organization;
- Setting strategic goals for activities to be undertaken;
- Aligning efforts within the organization to achieve those goals;
- Providing resources for the creation, spread, and sustainability of effective systems;
- Removing obstacles to improvements for clinicians and staff; and
- Requiring adherence to known practices that will promote patient safety

Stakeholders participating in the development of this Strategy have generally agreed that the role of EMS leadership as it applies to patient safety also extends to responder safety and community safety.

The Strategy notes that an individual organization may have competing goals and values. Organizational leaders play an important role in overtly acknowledging that values such as safety, patient care, privacy and compassion will compete at times.

It is the shared experience of many of those stakeholders that EMS organizational leadership often works to create or support an organizational culture consistent with the goals of improving responder safety and patient safety. However, stakeholders also reported widespread cases in which leadership works to undermine either the organizational culture or the ability of individual EMS field practitioners or field supervisors to act in the interest of responder safety or patient safety. In these cases, leadership's intentions may be good, but they ultimately fail to create support for a culture of safety. Many causes for this phenomenon have been reported anecdotally, chiefly:

- Attention diverted by other issues of perceived higher priority;
- Limited resources;
- Limited or no information/education about safety culture or practices;
- Pressure to meet ongoing demands for services;
- Limited mandates or incentives for proactive safety-related initiatives

Recent research shows that many frontline workers have a "non-positive" perception of EMS management commitment to safety, and that perceptions of workplace safety culture vary widely across EMS organizations.[45]

The National EMS Advisory Council's recent paper *The Role of Leadership in EMS Workplace Safety Culture* described the following core elements of leadership related to safety culture:

- Setting and regularly promoting the expectation for safe operations;
- Communicating a vision of a safe workplace, developing a process for achieving that vision, stimulating and arming co-workers with the resources needed to achieve that vision;
- Adopting safety and a positive safety culture as a value rather than a priority, because the latter are susceptible to change over time;
- Developing and sustaining processes for regular internal and external evaluations of safety conditions in the workplace and disseminating findings to create an "informed culture";
- Providing an avenue for management and front-line workers to recognize the need or availability of innovations that improve the workplace safety;
- Facilitating a variety of process and interventions in and out of the workplace that promote the safety of workers and their families.

There is little data to illustrate the *specific* role that EMS personnel—i.e., EMTs and paramedics—play in a culture of safety. But it is nonetheless evident that these dedicated responders are essential stakeholders in the process of improving safety for themselves, their patients, and members of the public they encounter in the course of their work.
It is therefore critical that wherever possible, activities and initiatives that are designed to improve safety also be evaluated in how they will impact the people whose decisions and actions will ultimately lead to improved safety.

Because of the key importance of both organizational leadership and EMS personnel in building and implementing a culture of safety, the Strategy envisions a construct in which resources, requirements, information, support, feedback and other elements flow to, and through, organizational leadership, as well as to EMS personnel directly, as appropriate. This coordinated effort will motivate and support both the leaders of EMS organizations and individual EMS responders nationwide, in ultimate support of pervasive safety-oriented attitudes and actions among all members of the EMS team, at all levels.

In other words, the desired outcome of the Strategy is a national culture of safety within EMS that both supports and comes from a collection of EMS provider organizations with their own cultures of safety.

Part 4
Elements of a National EMS Culture of Safety

Overview

The Strategy envisions six Elements that will work together to create and support a national culture of safety in EMS (presented without implication as to either importance or order of implementation):

- Just Culture
- Coordinated Support and Resources
- EMS Safety Data System
- EMS Education Initiatives
- EMS Safety Standards
- Requirements for Reporting and Investigation

These Elements were conceived in a consensus process by the Steering Committee for this project and further defined in subsequent group discussions.

These Elements are intended to work cooperatively with Federal, State, regional and local entities, as well as national stakeholder organizations, to channel resources, requirements, information, support, feedback and other elements to, from and among organizational leadership and EMS personnel.

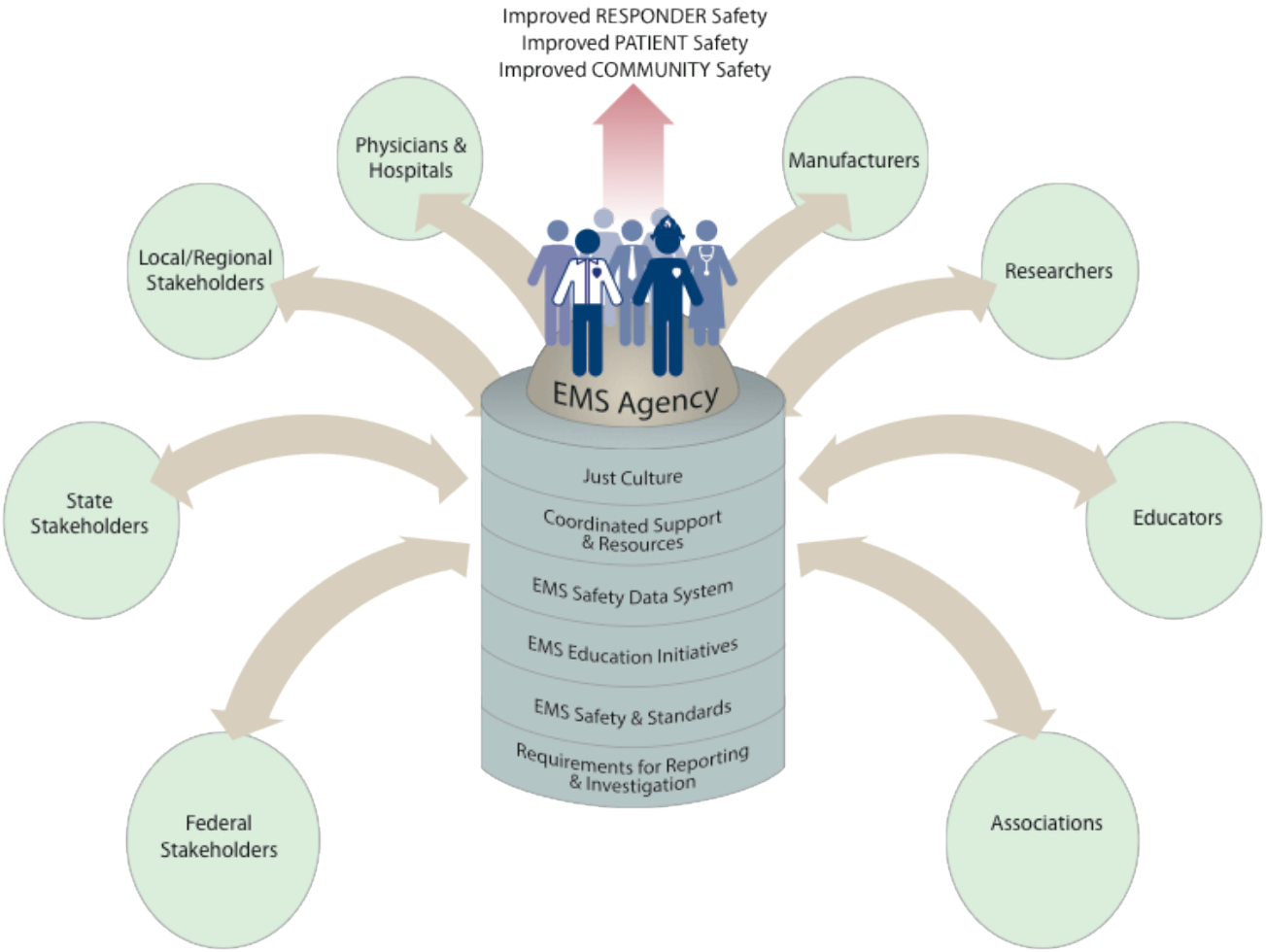
It is the intent of the Strategy to avoid duplicating effort or creating unnecessary overlap. Wherever possible, the Strategy has considered opportunities to build on past work and to partner with existing institutions and entities in envisioning these Elements.

Strategy Framework

The following diagram provides a high-level overview of the envisioned Elements of a culture of safety and its place in the EMS community. They are presented without implication as to either importance or order of implementation.

To be successful, these Elements will require collaboration among many stakeholders. The depictions of components and relationships in this illustration are not intended as a literal, hierarchical or exhaustive representation of the complex EMS universe.

The diagram is provided as a framework to enhance understanding of the Strategy concepts presented throughout this document.



Element 1: Just Culture

The Strategy envisions a Culture of Safety within EMS that embodies values similar to those of a school of thought known as Just Culture. Widely adopted throughout healthcare, aviation and a growing number of other fields, Just Culture is an *open-source, non-proprietary approach that embodies fairness and accountability*. It describes an organizational environment that encourages individuals to report mistakes so that the precursors to errors can be better understood in order to fix system issues.

A prevailing blame culture in healthcare has been suggested as a major source of an unacceptably high number of medical errors, and blame culture is more likely to occur in organizations that rely predominantly on the type of functional management systems typical in EMS—i.e., hierarchical and compliance based.[55]

In testimony before Congress in January 2000, Lucian Leape, M.D., a member of the Quality of Health Care in America Committee at the Institute of Medicine and adjunct professor of the Harvard School of Public Health, noted the following:

> *"Approaches that focus on punishing individuals instead of changing systems provide strong incentives for people to report only those errors they cannot hide. Thus, a punitive approach shuts off the information that is needed to identify faulty systems and create safer ones. In a punitive system, no one learns from their mistakes."*[56]

Dr. Leape's observation speaks to the need for a concept like Just Culture. Such a concept creates an atmosphere of trust, in which people are encouraged—or even rewarded—for reporting essential safety-related information, but in which they understand the difference between acceptable and unacceptable behavior. It also supports learning from at-risk behavior, failures and safety incidents.

Just Culture describes three duties, all of which should be already familiar to anyone working in EMS:

The duty to **act.**

The duty to **follow a procedural rule.**

The duty to **avoid causing unjustifiable risk**.

It should be noted that errors have the potential to be caused by a complex array of contributing factors, including failures of process or equipment as well as human factors. Not all errors are random occurrences or the result of failures of practitioners to perform as expected.

Regardless of whether nonhuman factors are involved, when it comes to unsafe acts, Just Culture describes three degrees of behavior:

Human error. Human error describes inadvertent actions in which there is general agreement that the individual should have done something other than what he or she did, and the action(s) inadvertently caused (or could have caused) an undesirable outcome.

At-risk behavior. At-risk behavior describes situations in which an individual makes a choice to engage in a behavior out of a belief that the risk is insignificant, or out of the mistaken belief that the behavior is otherwise justified.

Reckless behavior. Reckless behavior describes a behavioral choice to consciously disregard a substantial and unjustifiable risk.

All three types of behavior warrant a response. Just Culture expert David Marx recommends separating behaviors from outcomes—that is, basing the response to unsafe acts on the behavior itself and the risk it presents, rather than on the outcome (i.e., overlooking unsafe behavior if no harm resulted, and punishing the person involved only when harm occurs). His simplified model for escalating response:[57]

Console human error.
Coach at-risk behavior.
Punish reckless behavior.
…independent of outcome.

The qualifier in the above model (basing the response on the behavior, not the outcome) is a critical component of Just Culture. The opposite approach, basing the severity of the response on the severity of the outcome, is believed to be common in EMS and many conventional fields. However, such an approach ignores the risk created by the behavior, encourages people to hide mistakes, and in fact *rewards* at-risk behavior when there is no negative outcome. In other words, "no harm, no foul" has no place in Just Culture.

Medicine, aviation and a growing number of other fields have made significant moves toward Just Culture in recent years. This is noteworthy not only because of the successes that have been achieved, but as a dramatic example of cultural shift, because Just Culture contrasts with the traditional culture in healthcare and other high-risk disciplines, which often held individuals accountable for all errors or mishaps. Although Just Culture does not hold individuals accountable for system failings over which they have no control, it is not a blame-free model (see description of behavior types that may result in unsafe acts, above). It acknowledges that humans inevitably make mistakes, and that systems should be designed to reduce the chance of harm in the event of such mistakes.

In 2009, the American Nurses Association released a position paper formally endorsing the concept of Just Culture, citing its value in improving patient safety, noting:[58]

"The Just Culture concept establishes an organization-wide mindset that positively impacts the work environment and work outcomes in several ways. The concept promotes a process where mistakes or errors do not result in automatic punishment,

but rather a process to uncover the source of the error. [At-risk behaviors] result in coaching, counseling, and education around the error, ultimately decreasing likelihood of a repeated error. Increased error reporting can lead to revisions in care delivery systems, creating safer environments for patients and individuals to receive services, and giving the nurses and other workers a sense of ownership in the process. The work environment improves as nurses and workers deliver services in safer, better functioning systems, and that the culture of the workplace is one that encourages quality and safety over immediate punishment and blame."

Other models may exist that embody similar values. Such values may increase the likelihood that the steps necessary to create a true culture of safety will be perceived positively by those who will ultimately determine its success or failure—that is, EMS field personnel.

It is important to note that Just Culture is not a substitute for a comprehensive safety management system. Its inclusion as a key element in this Strategy is intended as an important, appealing and achievable first step toward larger cultural change.

Element 2: Coordinated Support & Resources

Advancing EMS responder safety and safety of patients and the public requires participation from a wide variety of stakeholders. This Strategy envisions a centralized function for coordinating this participation and a wide variety of resources, and allowing for a unified, credible message to be presented to the EMS community on a national basis. This, in turn, increases the likelihood of building buy-in among individual EMS provider agencies.

To fulfill this function, the Strategy envisions a centralized resource and coordination center. Its fundamental mission would include:

- Communicating with a broad group of stakeholder organizations of all types to coordinate efforts, for a unified message
- Providing additional visibility in support of a culture of safety in EMS
- Functioning as a communication channel to the EMS community
- Serving as a repository/library/collection of links with "one-stop shopping" for tools, best practices, education, research, standards and related resources that the EMS community can use to advance a culture of safety (e.g., NAEMT's EMS Safety Course and related resources)
- Collaborating with appropriate entities in advancing the other five elements in this Strategy (Just Culture, EMS Safety Data System, EMS Education Initiatives, Standards, and Requirements for Reporting and Investigation)
- Sharing research activities such as those affiliated with the National Academies' Transportation Research Board (TRB)

For ease of reference, this envisioned resource and coordination center has been given the placeholder name EMS Safety Resource Center (EMSSRC).

The Strategy does not envision EMSSRC, in any form it takes, as having oversight, regulatory or enforcement authority, although it would communicate and work closely with existing authorities as appropriate. The Strategy anticipates that EMSSRC's role would be one of support, coordination, monitoring of progress, and sharing of centralized information, rather than a direct, hands-on role in conducting research or implementing specific intervention programs. EMSSRC is envisioned as supplementing and supporting, not replacing, initiatives by stakeholder groups such as associations, researchers, States, etc., and helping communicate success stories and best practices so that the entire EMS community may benefit.

Possible EMSSRC Structures

Although it is the intent of this Strategy to tap into existing resources wherever possible and avoid "reinventing the wheel," several possible structures for EMSSRC have been suggested for consideration. They are presented here in no particular order; no preference is expressed.

1. **Foundation Model:** Under this model, EMSSRC would be chartered and funded as a foundation similar to the National Fallen Firefighters Foundation, with an overseeing board of directors. The foundation model could be applied either to a startup entity or to an existing organization whose scope is expanded to specifically encompass EMSSRC as a core program. *Note:* NFFF was chartered by Congress, which may or may not be necessary for this model to be successful.
2. **Institute Model:** Under this model, EMSSRC would be chartered as an institute similar to the Institute for Healthcare Improvement, funded through a combination of grants, donations, and program fees.
3. **Cooperative Agreement Model:** Under this model, EMSSRC would be housed at a university, institution or non-profit organization. Examples include the Cardiac Arrest Registry to Enhance Survival (CARES), at Emory University, in cooperation with CDC; and the National EMS for Children National Resource Center, housed at Children's National Medical Center, in cooperation with the Health Resources and Services Administration, Maternal and Child Health Bureau.
4. **Association Model:** Under this model, EMSSRC would be maintained by a national stakeholder association or combination of associations.
5. **Combination Model:** Various combinations of the preceding models can also be considered.

However EMSSRC is structured, the Strategy envisions that it would encompass a panel of representatives from a broad spectrum of stakeholder groups, similar to the makeup of the Steering Committee associated with this Strategy.

Also regardless of structure, it is envisioned that EMSSRC would work closely with State EMS officials and a variety of Federal stakeholders with an interest in EMS.

To support its mission in supporting the implementation of the other five Elements described in this Strategy, it will be helpful for EMSSRC to undertake the following support activities:

Outreach and Resources for EMS and Other Stakeholders. EMSSRC is a natural body to take on the task of communicating with the EMS community (both directly and via associations, Federal partners, states, regions, local authorities and similar channels) about the concept of a culture of safety and specific initiatives undertaken. As a safety advocate, EMSSRC is also an appropriate entity to deliver credible, actionable, nationally endorsed information on best practices and safety culture initiatives, continuing education materials for leaders and practitioners, and the like for organizations' use. EMSSRC could also: act as a centralized clearinghouse for data and published research; track safety-related regulations enacted by Federal entities and States and report details to the EMS community; track Federal and State legislation affecting EMS safety, and house model legislation; report on funding sources; coordinate and support collaboration among stakeholder groups; and share news and ideas. Such resources could be made available via an online portal.

Resources for Public Outreach. EMSSRC could house educational materials (such as press-ready brochure files, public service announcements, campaigns, etc.) for use by stakeholder groups and EMS provider agencies in communicating the proactive stance of the EMS profession about patient safety, as well as the

importance of supporting safety initiatives for EMS personnel. Such communication can help build support for EMS safety initiatives, and can also help shape public perception and expectations (helpful in, for example, understanding response times; using EMS appropriately; and attracting prospective workers). Outreach materials may also be helpful in educating the public about yielding to emergency vehicles, being aware of emergency scenes on roadways, appropriate expectations and to correct misperceptions about EMS (for example, the expectation that every call must generate a lights-and-siren response, regardless of the nature of the problem).

Measuring Progress and Success. Working with stakeholder groups, EMSSRC should disseminate criteria, national expectations and milestones for progress toward responder safety and patient safety goals. It should coordinate efforts to track and report on that progress. One tool that may be useful is the national benchmarking survey of attitudes about safety in EMS used by the Emergency Medical Services Agency Research Network (EMSARN) at the University of Pittsburgh.[45] Wherever possible, EMSSRC contributors should use actual data and evidence from the field in measuring progress, and should publicly report on that progress (or lack thereof).

Additional Activities to Consider

Many of the factors considered and/or addressed in the Strategy have been discussed previously, and the envisioned elements may have been previously recommended, in some form, in past efforts that did not focus on safety specifically. The Strategy anticipates that one of the initial activities for EMSSRC will be to review these past recommendations and goals, affirm that they are currently supported, evaluate progress and set up channels of communication with the groups responsible for implementing them.

Specific to patient safety, EMSSRC contributors should consider recommendations in the National EMS Advisory Council Oversight, Analysis, and Research Committee report *Reducing Adverse Events in EMS: Creating a Culture of Safety.* Possible priorities include:

- Leading the development of standards and methodologies to identify and reduce adverse events in EMS
- Exploring possibilities for regulatory or financial incentives to drive patient safety in EMS
- Encouraging peer-reviewed research focused on a system approach to medical errors and patient safety in EMS
- Considering a patient safety reporting system (national vs. state)
- Developing model legislation/regulations regarding patient safety in EMS
- Creating a list of EMS “never events” – that is, particularly shocking adverse events that should never occur, such as the list developed by the National Quality Forum in 2006 for events that should never occur in a hospital (for example, surgery on the wrong body part, discharging an infant to the wrong parent, patient death or serious injury from a fall while being cared for in a hospital, etc.)[59] or the Joint Commission’s “sentinel events” policy[60]
- Defining a taxonomy/data dictionary for EMS adverse event reporting

- Creating or collaborating on, and distributing, a toolkit for local implementation of an EMS patient safety program
- Cataloguing best practices in EMS patient safety
- Seeking opportunities to encourage the Centers for Medicare and Medicaid Services (CMS), in any "value-based purchasing" system developed for EMS, to include a mechanism to financially reward EMS programs that have implemented a culture of safety

Specific to EMS responder safety, EMSSRC contributors should consider recommendations in the *Emergency Medical Services Workforce Agenda for the Future,* including cultivating policies, procedures, training and programs in industries with similar dynamic risk profiles to EMS, such as trucking, shipping, mining and agriculture, and evaluating these programs to establish clear workforce safety practices and procedures.

The same document also identifies such priorities as:

- Identifying successful wellness programs from other industries and tailoring them to the EMS community
- Establishing regular forums for sharing best practices with provider groups
- Extending awareness of the culture of safety into educational programs so that new workers enter the field with a broader appreciation for their own safety and well-being and that of their peers

The *Workforce Agenda* does not directly address patient safety or medical errors in the prehospital setting.

EMSSRC contributors should also consider the strategic goals identified in the report of the National Public Safety Sub-Sector Agenda for Occupational Safety and Health Research Practice in the U.S., under the National Occupational Research Agenda (NORA). The *Emergency Medical Services Workforce Agenda for the Future* cites five strategic goals identified for EMS in the above document (including any updated timelines):

- "Reduce traumatic injury and fatalities among EMS personnel associated with vehicle crashes…"
- "Reduce traumatic injuries among EMS personnel that occur during movement of patients and equipment…"
- "Reduce hazardous exposures to EMS personnel through effective design and use of PPE, and proper work practices…"
- "Identify and implement effective policies among EMS agencies regarding work organization factors to reduce related illnesses and injuries…"
- "Create an integrated occupational health and safety surveillance data system for Emergency Medical Services (EMS) personnel and evaluate risks for their exposures, illnesses, injuries, and fatalities…"

Furthermore, EMSSRC contributors should consider other goals identified in the NORA document, such as improving EMS vehicle design and developing guidelines for EMS worksite medical surveillance and wellness programs.

Element 3: EMS Safety Data System

There is a pressing need to understand the scope, frequency and nature of EMS responder injuries and adverse medical events, in order to project the cost to the EMS profession; the impact on EMS personnel; the cost to patients; and the cost to society, as well as to identify priorities, set goals and measure progress toward a culture of safety.

Currently, data that could help build an understanding of these issues may be housed in many different places. In one of the largest EMS agencies in the country, for example, the occupational injury data system is an Excel file created and maintained by a single lieutenant. In addition to residing in thousands of data systems, information is not reported uniformly and lacks a common data dictionary.

Making data more accessible and useful can enable that data to support recommendations and conclusions. As a first step toward this, the Strategy envisions a national EMS Safety Data System as a key element. This is envisioned as a national, robust, well-designed, secure data system encompassing key information about EMS safety, made available for research and policy-makers, as well as use by national stakeholder organizations and individual EMS provider agencies. It should be noted that the Strategy envisions the National EMS Safety Data System as a data *system* linking and communicating with existing data systems, rather than a new data*base.*

When it comes to data elements, it is important to consider the concept of a data dictionary, or standardized measures/definitions/metrics to promote the adoption of one set of language that allows for comparisons and aggregate datasets.

Any useful data systems must also capture *denominator* data. For EMS occupational injuries, for example, that denominator data must include many factors, including hours worked (by gender and job title), call volume and miles driven, among others.

Considerations From Past Works

The designers of the data system may benefit from a review of a 2007 NHTSA-sponsored report, *Feasibility for an EMS Workforce Safety and Health Surveillance System*, which offered rationale for a comprehensive program for surveillance of EMS illness and injury rates.[61] The report recommended the creation of a National EMS Workforce Injury and Illness Surveillance Program (EMS-WIISP).

The *Emergency Medical Services Workforce Agenda for the Future* describes the value of research and injury surveillance, including such data as:[62]

- Types and prevalence of illness and injury;
- Incidence of disability and mortality;
- Etiology of illness and injury;
- Workforce demographics;
- “Near miss” incidents;

- Vehicle crash-related morbidity and mortality

The same paper also endorses fundamental research questions that should be routinely addressed, including, for example:

- Risk of experiencing illness and injury;
- Impact of illness and injury on the workforce and the overall EMS industry, including
    - Recruitment
    - Retention
    - Economic cost to industry

Applying Lessons Learned

The Strategy envisions that the National EMS Responder and Patient Safety Data System would apply lessons learned from successful data-centric initiatives such as the International Association of Fire Chiefs' (IAFC's) Near Miss Database, (http://www.firefighternearmiss.com/) which has been up and running since 2005 and has received broad cooperation from the fire service nationwide in gathering meaningful information.[63] One key lesson from the success of the Near Miss Database is its strategy for providing information back to participants, which further encourages their cooperation and participation. The IAFC's EMS Section would be a valuable ally in structuring the National EMS Responder and Patient Safety Data System and encouraging its use.

The North Carolina EMS Data System is one example of the successful development of a large, fully integrated, comprehensive EMS data and quality improvement effort at the statewide level.[64] The program has achieved significant improvements in the quality of EMS service delivery, patient care and integrated systems of care. Consistent with the goals of the 2007 Institute of Medicine's recommendations for EMS, the linkage of the North Carolina EMS Data System with other healthcare registries has created an environment that can evaluate larger systems of care and ultimate patient outcomes.

Another data initiative that should be considered in forming the National EMS Responder and Patient Safety Data System are the EMS Near Miss and EMS Line of Duty Death online reporting forms and database developed by the National Association of Emergency Medical Technicians (NAEMT) in collaboration with the Center for Leadership, Innovation and Research in EMS and supported by the National Association of State EMS Officials (NASEMSO). These tools are included in NAEMT's EMS Voluntary Event Notification Notification Tool (E.V.E.N.T.), which was launched in March 2012.

Additional data-related considerations relevant to the National EMS Responder and Patient Safety Data System include the National Quality Forum's (NQF's) "never events" [59] and Joint Commission recommendations.[60]

Need to Consider Dual Aspects of Patient Safety

One potential concern that must be addressed in developing the national EMS Safety Data System is the need to accommodate two distinct aspects of patient safety unique to EMS—first, protection of patients from physical harm (for example, from crashes, failures of transport equipment, or improper handling); and, second, prevention of medical errors that lead to patient harm (such as incorrect doses of medication, improper diagnoses, missed intubations, etc.). These distinct aspects of EMS patient safety are often the responsibility of two different branches in EMS organizations; the former is typically within the purview of the health and safety officer (or equivalent), while the latter is typically the responsibility of the medical director and quality improvement manager (or equivalent). It is essential to recognize this distinction in creating a system that will facilitate effective reporting and accuracy.

Need to Analyze Opportunities to Incorporate NEMSIS Data

A careful analysis of the National EMS Information System (NEMSIS) should be made to determine the utility of its data for enhancing an EMS Culture of Safety. It is likely that some NEMSIS data will be useful with regard to patient safety issues involving treatment. However, NEMSIS does not offer this same usefulness when it comes to providing data related to patients who are physically harmed while under EMS care (for example, in an ambulance crash). Further, as a *patient*-focused reporting system, NEMSIS does not provide a way to track injuries sustained by EMS personnel, or line-of-duty deaths.

Need to Consider What Data Will Be Included in the National EMS Responder and Patient Safety Data System

The Strategy anticipates that the data for the EMS Safety Data System will come from numerous sources rather than a single entry point. In addition to the sources referred to above, it is possible that individual State agencies will develop their own safety databases for EMS. In view of this, a process similar to that used to develop NEMSIS may be useful in developing the EMS Safety Data System. A core set of data points can be identified and agreed upon, and shared with the partner entities, which would then ensure that the data was appropriately and compatibly captured in their own systems. Following this, mechanisms for sharing data among systems following accepted standards would need to be developed.

It may also be helpful to consider a survey of current safety needs to identify what data will be most useful.

Opportunity to Consider Data Gathered by Insurance Carriers

The developers of the EMS Safety Data System should evaluate the usefulness of data gathered by insurance carriers (e.g., the Healthcare Cost and Utilization Project (HCUP) at the Agency for Healthcare Research and Quality (AHRQ), which tracks hospital inpatient care statistical information).

Need to Capture Broad Occupational Health Data

The EMS community would benefit from surveillance of both mental and physical health conditions among EMS personnel, as both may lead to negative outcomes. Stress exposure has been linked empirically with both psychological dysfunction and physical illness.

Need to Consider Privacy and Liability Concerns

It is essential to consider possible obstacles to sharing data, or restrictions on how data may be shared and with whom, in developing the EMS Safety Data System. Such obstacles could include HIPAA and State privacy laws, organizational policies, cultural resistance to revealing sensitive data, the need for protection from legal liability, and related issues. Legal advice on relevant issues is essential for the designers of such a system, to form a strong understanding of what is allowed (particularly by HIPAA) and what is not. Supporting documentation should be made available for use by reporting agencies, to remove obstacles to sharing (real or perceived).

Protection from legal liability related to the reporting of events and data may be available under a patient safety organization (PSO). Under such organizations, those submitting data are protected under the Patient Safety and Quality Improvement Act of 2005. PSOs are overseen by AHRQ (http://www.pso.ahrq.gov/index.html). The EMS Safety Data System could be formed as part of a patient safety center that is also a PSO.

Element 4: EMS Education Initiatives

EMS education (both initial programs and continuing education) represents a significant opportunity for delivering both responder safety and patient safety information, changing attitudes, and creating a national culture of safety in EMS.[65, 66] As such, it is key to this Strategy.

The Strategy acknowledges that cultural change takes time, often measured in generations. Education-related initiatives related to safety can seek to create cultural change among current EMS team members, and those just entering the workforce via an educational program.

Need to Include Leaders in Safety Education

The Strategy also acknowledges the widely accepted view among safety experts that successful implementation of safety culture hinges on the sincere buy-in from organization-level leadership. The educational component of the Strategy envisions delivering education to both leaders and practitioners at all levels, to equip them with the information they need to "own" EMS responder and patient safety. (Note: The *EMS Education Agenda for the Future* (2000) focused on practitioner-level education and training, rather than leadership, but this should not be viewed as an implication that leadership education should not be a priority.)

Individuals who advance to EMS leadership positions often (although not always) are promoted from within, i.e., from positions as field practitioners. They often must learn leadership skills and competencies "on the job." The National EMS Management Association (NEMSMA) *Leadership Agenda for the Future* notes:[67]

> "In more than 40 years of visioning and creating modern EMS, the industry has been blind to the need for structured EMS leadership and management development….Today, EMS management development mirrors the scattered evolution of the industry. There has been no consensus on management levels and titles or the competencies needed to fulfill those levels. There are no common educational paths or widely accepted curricula for management development, and no widely recognized credentials for EMS managers."

A more systematic approach should be charted for how EMS leaders are educated, or possibly certified, which should strongly emphasize responder safety, patient safety and the concepts of Just Culture.

Need for Early Identification of At-Risk Candidates

Initial EMS education represents the gateway between the pool of potential workers and employment (or volunteer positions) in EMS. The Strategy envisions that entities conducting EMS education (for example, technical schools teaching EMT programs and colleges or college-affiliated programs offering paramedic courses) actively identify candidates who are at

higher risk for dangerous behavior or risk-seeking attitudes, and provide a higher level of focus to those individuals for a greater understanding of safety concerns.

Need to Build Clinical Judgment

The Strategy also recognizes that changes should be encouraged or mandated in the education of EMS personnel, with greater emphasis on creating practitioners who are capable of critical thinking, beyond a focus on technical skills only. It is the belief of stakeholders participating in the development of the Strategy that individuals who are more rounded in clinical thinking skills—as opposed to individuals who are trained to repeat tasks—can more easily assimilate concepts such as a culture of safety.

Accordingly, the Strategy envisions that the goal of the EMS educational process at all points would be not to simply develop skills proficiency but to develop the foundation for clinical judgment. When an EMS practitioner is able to take the whole patient's medical situation into account, there is a greater opportunity for critical thinking and problem-solving in the approach to treatment.

This philosophy is consistent with the position of the Canadian Patient Safety Institute in its report *Patient Safety in Emergency Medical Services: Advancing and Aligning the Culture of Patient Safety in EMS,* which described good clinical judgment as the greatest safety feature of EMS systems (and poor clinical judgment as the greatest risk to safety).[68]

The National EMS Education Standards (2009) are an important consideration in supporting the development of better EMS clinicians through the education process. This document is a natural and essential element to include in assessing opportunities for building greater EMS clinical judgment through education.

Transitioning New Employees

Related to transitioning new employees into the workplace, it is important to note an observation made in the EMS Culture section of this Strategy, about a phenomenon that may impede the effectiveness of any education-related initiatives toward a culture of safety:

> *In many cases, newly hired EMTs and paramedics are paired with a partner or field training officer who either intentionally or unintentionally "undoes" responder-safety and patient-safety habits and beliefs instilled in the new employee's educational program. This is commonly described as the "that was all well and good in the classroom, but now let me show you how we do it in the real world" effect.*

To avoid this, a better transition model is needed so that what is learned in the classroom stays with the individual throughout his or her career. Greater use of realistic simulation and "real world" scenarios, or a more gradual transition from education to duty, may be beneficial. Further, field training educators should not only have preparation for doing the job, but it would be beneficial to a culture of safety for that preparation to support a more strategic goal

of preparing them to be future instructors and academics. Accordingly, such field training instructor programs could also offer academic credit.

It should be noted that the National EMS Management Association, in recognizing the challenge of transitioning new employees, recently created the EMS Field Training and Evaluation Program (FTEP), which seeks to standardize and improve organizations' approach to this critical, but often overlooked, element of education.

Need to Integrate Safety Into Every Component of EMS Education

The Strategy envisions recruitment and education beyond the classroom as vitally important to the successful implementation of a culture of safety, to include:

- Educating recruits about the job before they join (countering impressions about the "glamorous" lights-and-sirens nature of EMS work)
- Instilling a deep understanding that safety is an ever-present, ever-important consideration in EMS work, but acknowledging that sometimes safety considerations conflict with other important values
- Refusing to allow safety education to be set aside once on the job, to include understanding the human tendency to rationalize repeating at-risk behaviors simply because they have not resulted in negative outcomes in the past
- Educating the next generations of EMS team members to be safety-oriented in everything they do, and providing them leadership to support safety procedures and maintain accountability for behaviors regardless of outcomes
- Setting an expectation for life-long learning
- Setting the foundation for a career-long understanding of the importance of personal health, physical fitness, maintaining emotional health and avoiding substance abuse.

The Strategy recognizes that all generations do not learn the same way, and that opportunities should be sought to deliver educational information in a variety of ways, including via apps, mobile methods, social media and other methods.

The Strategy envisions a significant evolution of the EMS education process, in which the values and practical elements of a culture of safety are *fully integrated into each component of EMS education.* This is in keeping with the need expressed in the 1996 NHTSA document *EMS Agenda for the Future*. Under this model, the safety of practitioners, patients and the public would be a persistent, pervasive consideration.

Element 5: EMS Safety Standards

The Strategy envisions that the EMS Safety Resource Center will pursue, as part of its core mission, the promotion of standards in EMS that will enhance safety for EMS practitioners, patients and members of the public whom EMS encounters in the course of its work. Standards are envisioned as encompassing both responder safety and patient safety.

The Strategy envisions the following considerations applicable to EMSSRC in its mission to promote safety-related standards in EMS:

Scope of Mission Related to Standards

It is not the vision of the Strategy that EMSSRC will be a standards development organization in its own right, or that it will duplicate valuable work already performed. Rather, it is expected that EMSSRC will act as a coordination/clearinghouse for the past and future work of other organizations. EMSSRC should work closely with standards development organizations in emergency services and healthcare, review standards using accepted processes, and promulgate those standards to the EMS community. It is anticipated that this would represent ongoing work, as the need for standards grows with the needs of the profession, the needs of patients, and the ever-evolving body of scientific knowledge. This ongoing work would also include advocating for new processes and standards.

Evidence-Based Approach

Organizations involved in development of standards should follow an accepted process—that is, one based on literature/evidence, data and consensus—in selecting and sharing standards. It should be noted that there needs to be more funding for research to develop and support standards.

Initial Work Needed to Develop Standards to Be Addressed

EMSSRC should engage in a collaborative process with experts to develop a prioritized list of standards to be addressed or created by appropriate organizations. High priority should be given to standards that support safety not only from an operational or technical viewpoint, but from a cultural perspective as well. Possible items for consideration include the following (Note: This is a limited list, from topics raised at the National EMS Culture of Safety Stakeholder Conference and via public comment during the development of the Strategy):

- Physical fitness for practitioners (may be preferable for this to initially emerge as recommendations or guidelines rather than standards)
- Shifts/fatigue
- Categorizing and reporting violence against EMS personnel; model legislation outlawing such acts; standards for training to prevent/counter violence and prevent injuries to EMS personnel and patients
- Checking driver records and similar employment screening

- Quality improvement and supervision
- Medical equipment and patient-moving equipment; making equipment loads manageable
- Ambulance design, maintenance, etc.
- Dispatch standards: Encouragement of prioritized dispatch protocols, for ground and air, to ensure that the response is commensurate with the nature of the emergency and that unjustified risk is minimized
- Patient safety considerations specific to equipment design (example: standardization of anesthesia machines led to measured reductions in errors)
- Use of personal protective equipment (PPE) by provider and patient
- Standardized description of the role and qualifications of an EMS safety officer
- Safety competencies
- Standards for safety-related information communicated to responders, to include anticipated data available through Next Generation 911

Element 6: Requirements for Reporting & Investigation

To successfully implement a culture of safety in EMS that will support improvements in safety for responders, patients and members of the public, and to support the creation and population of a national EMS safety data system, the Strategy acknowledges the importance of mandates for reporting of standardized data by all EMS provider agencies.

EMS vehicle crashes represent a high-profile risk for EMS practitioners, EMS patients and the public. Very little is known about the true number of EMS vehicle crashes, and even less is known about the number of incidents in which an EMS vehicle was indirectly involved (so-called “wake effect” crashes). Further, little is known about non-crash incidents involving EMS vehicular operations (e.g., an EMT in the back of the ambulance being injured by a sudden stop or turn). The Strategy envisions mandatory investigation of all crashes and other EMS vehicular incidents that meet certain severity criteria.

It is not currently envisioned that EMSSRC would play a direct role in investigating crashes, but would be a partner in efforts to develop a mechanism for such investigation.

Other high-profile risks for EMS personnel, patients and the public should be identified and prioritized.

Steps for developing reporting may include:

1. **Determining what data types are necessary and useful.** This could include surveying experts to identify the types of information that would be critical for investigation of incidents; identifying high-risk activities, conditions and locations; identifying opportunities for interventions/preventive measures that are most likely to yield improvements, and other criteria.
2. **Determining what data may already be available or mandated.** It is not currently known how many States mandate reporting of vehicle incidents that meet specified criteria, or what is done with the information obtained through such mechanisms. Surveying States to identify existing reporting and investigation requirements is an essential step. This survey should include types of data collected, compliance rates, the ways data is used, how investigations are conducted and by whom, and related information.
3. **Learning from those with hands-on experience.** In gathering information to determine the most appropriate approach, it would be especially helpful for stakeholders to consult with, or even receive direct assistance from, one or more Federal entities that have specific experience in collecting mandated reports and conducting investigations, e.g., the CDC’s National Institute for Occupational Safety and Health (NIOSH) and/or the National Transportation Safety Board (NTSB).
4. **Assigning and obtaining authorization for an investigative body.** A likely entity to conduct mandatory investigations is not known, but there may be significant advantages to assign such responsibility to an organization with relevant experience. Investigations should involve cooperation/communication with local authorities to obtain information.
5. **Identifying existing best practices.** Qualified experts could identify best practices for collecting data, investigating incidents that meet relevant criteria, sharing findings

and ensuring that the resulting information is used in a way that benefits the profession or industry in question.

Additional Considerations

Mandatory vs. Voluntary: There is a general agreement among stakeholders participating in the development of this Strategy that some reporting should be voluntary and some should be mandated. There is no strong sense, however, of where that line should be drawn. Even if data reporting is mandated, high compliance rates may not automatically result. Nevertheless, the Strategy envisions that stronger mandates will result in more complete, more accurate data being gathered, more quickly—and an accompanying increase in the ability to share findings that will affect policy decisions aimed at improving EMS safety. This issue could be tied to funding; that is, each agency would know that supplying *x* data (the minimum) would result in *y* dollars, and that supplying *x*+2 data (the ideal) would result in *y*+2 dollars. It should also be noted that any attempt at improving reporting will be long and complex, and penalties would likely make it longer and more difficult. Not every agency will be able to submit additional reports; focusing on the ones that do and rewarding them for the efforts may be the most effective approach.

Documentation: The bottom-up nature of reporting by EMS personnel and medical directors must be acknowledged. All stakeholders should understand the role that proper documentation plays in improving safety in EMS systems.

Enforcement & Sanctions: The Strategy envisions that any mandates for reporting will have far greater compliance if they are supported by incentives for compliance or penalties for noncompliance. The Strategy anticipates that the greatest compliance will result, and that reporting will be most efficient, if mandatory collection of data is conducted at the State level, with data collated and forwarded to EMSSRC.

Sharing of Best Practices: Agencies may be more likely to comply with reporting mandates if they see a benefit to participating. EMSSRC should regularly share best practices for how incidents, crashes, injuries, etc., can best be handled by individual agencies, using data from the reporting process and the results of investigations.

Anonymous Reporting: The system should include a channel for anonymous reporting, even by individuals. One model for consideration is the Firefighter Near Miss System, in which individuals typically can access the system and submit a report in 10 minutes or less, even if they have no expertise or experience in doing so. Another is the National Association of Emergency Medical Technicians' E.V.E.N.T. Reporting System. The reporting channel should be both accessible and standardized.

Legal Implications: Considerable resistance can be expected from organizational risk managers if they fear that plaintiffs' attorneys will subpoena incident- or practitioner-related information reported via a mandatory reporting system. Mandated reporting should be supported by legal protection from use in claims against provider organizations that report

incidents. There is ample precedent for such protection accompanying reporting requirements in the hospital arena.

Evidence-Based Process: The reporting and investigative component of the Strategy should follow an evidence-based, data-guided approach, especially in identifying key focus areas where the greatest benefit is possible in protecting EMS personnel, patients and the public, and to reduce the likelihood of harmful outcomes resulting from inevitable human error.

Importance of Denominator Data: Any attempt at improving numerator data collection must also address the need for appropriate denominator data. For example, knowing how many crashes an agency had in a given time period is less useful if the data does not also include how many miles its ambulance fleet was driven in the same period, or how many hours its employees worked, or many hours the driver involved in the ambulance crash had worked within the preceding 24 hours, etc.

Part 5
Conclusion & Next Steps

I. Conclusion

EMS is an important partner in the nation's healthcare system, and a critical element in national security and disaster preparedness. Yet EMS operations potentially expose EMS personnel, patients and members of the community to preventable risk of serious harm. This contrasts with advances in safety practices that have been successfully implemented in many healthcare and other settings in recent years.

This Strategy attempts to balance four key desires of the EMS community:

- The desire to help people, often at a time when they need it most
- The desire for pragmatic, immediately actionable steps that can be applied locally as well as nationally
- The desire for strategic, visionary initiatives that will support and empower such steps, and all stakeholder efforts to improve safety outcomes
- The desire to make evidence-based decisions

The structure and culture of EMS, and particularly its variability in service delivery models, present numerous obstacles to creating a national EMS culture of safety. But the very purpose of EMS is to help, not harm, and EMS stakeholders have resoundingly echoed the idea that the time has come to implement a culture of safety in the profession.

II. Next Steps

Throughout the development of the Strategy, and most recently during the National Review Meeting in June 2012, EMS stakeholders have indicated their desire to move forward now, even before this Strategy is fully implemented.

Accordingly, a list of ideas was developed from Steering Committee and EMS community input throughout the development of the Strategy. The ideas are presented here grouped by stakeholder types and mapped where possible to the six Elements of the Strategy. It may be possible to implement some of the ideas now, or to begin laying groundwork. Some ideas may also form the basis for an eventual toolkit for local EMS provider agencies to use in building their own culture of safety.

The list is presented without implication as to either importance or order of implementation. It is expected that this list will function as a "living document" subject to ongoing additions, edits and reprioritizing. It is not represented as exclusive (i.e., any exclusion should not be assumed to be intentional).

Individual EMS Personnel

- Collaborate with EMS management in the development, promotion, and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs to facilitate an honest and prompt reporting of mishaps and errors.
- Support the need for coordination of all EMS safety related programs at the local, regional, state, and federal levels to share items such as best practices and improved safety standards.
- Support the need for better national EMS responder and patient data collection and participate in systems currently available such as the E.V.E.N.T. system.
- Support increased EMS educational initiatives to address EMS system safety and a new culture of safety for EMS and seek opportunities to expand their knowledge base on culture, patient safety, and research on clinical safety, responder safety, personal protective equipment, etc.
- Cooperate in the development of new and improved safety standards that affect all aspects of the EMS system such as participating with studies in safety related research.
- Support the creation of a national EMS safety data system that collects both patient and EMS personnel data.

EMS Provider Agencies

- Collaborate with EMS personnel in the development, promotion, and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs and make EMS safety a corporate value.

- Promote the need for coordination of all EMS safety related programs at the local, regional, state, and federal levels and integrate these into the agencies SOP's.
- Promote the need for better national EMS responder and patient data collection and facilitate EMS personnel participation in systems currently available such as the E.V.E.N.T. system.
- Support new EMS educational safety initiatives within initial EMS education curriculum and through other certification courses such as NAEMT's EMS Safety Course.
- Promote the development of new and improved safety standards that affect all aspects of the EMS system based on best practices and successful safety programs.
- Support the creation of a national EMS safety data system that collects both patient and EMS personnel data.

EMS Physicians & Medical Directors

- Collaborate with EMS management and EMS personnel in the development, promotion, and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs and promote EMS safety as a corporate value.
- Advocate the need for coordination of EMS safety related programs at the local, regional, state, and federal levels and integrate these into the agencies clinical protocols where applicable.
- Promote the need for better national EMS responder and patient data collection and facilitate EMS personnel participation in systems currently available such as the E.V.E.N.T. system.
- Support new EMS safety educational initiatives during initial EMS education.
- Encourage the development of new and improved safety standards that affect all aspects of the EMS system that are referenced to existing Quality Improvement data.
- Advocate for the creation of a national EMS safety data system that collects both patient and EMS personnel data.

Associations

- Support the development and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs.
- Advocate the need for coordination of EMS safety related programs at the local, regional, state, and federal levels.
- Support the need for better national EMS responder and patient data collection and facilitate EMS personnel participation in systems currently available such as the E.V.E.N.T. system.
- Encourage new EMS safety educational initiatives during the initial curriculum and promote the use of certification courses.
- Advocate for the development of new and improved safety standards that affect all aspects of the EMS system that are based on established best practices and benchmarks.

- Advocate for the creation of a national EMS safety data system that collects both patient and EMS personnel data.

Educators

- Support the development and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs and.
- Advocate the need for coordination of EMS safety related programs at the local, regional, state, and federal levels.
- Support the need for better national EMS responder and patient data collection and facilitate EMS personnel participation in systems currently available such as the E.V.E.N.T. system.
- Participate in the development of new EMS safety educational initiatives in the initial education curriculum and promote the use of existing safety related certification courses.
- Support the development of new and improved safety standards that affect all aspects of the EMS system that include topics such as health, nutrition, wellness and fitness.
- Advocate for the creation of a national EMS safety data system that collects both patient and EMS personnel data.

Standards Development Organizations (e.g., NFPA, ASTM, CAAS)

- Promote the development and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs.
- Support the need for coordination of EMS safety related programs at the local, regional, state, and federal levels.
- Support the need for better national EMS responder and patient data collection and facilitate EMS personnel participation in systems currently available such as the E.V.E.N.T. system.
- Promote new EMS educational initiatives to address EMS system safety and promote the use of certification courses such as NAEMT's EMS Safety Course.
- Develop new and improved safety standards that affect all aspects of the EMS system such as safer vehicle design and human factors engineering.
- Participate in the creation of a national EMS safety data system that collects both patient and EMS personnel data.

Local Government Stakeholders

- Promote the implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs.
- Assist in the coordination of EMS safety related programs at the local, regional, state, and federal levels.

- Support the need for better national EMS responder and patient data collection and participation in systems currently available such as the E.V.E.N.T. system.
- Promote new EMS educational initiatives to address EMS system safety and promote the use of certification courses such as NAEMT's EMS Safety Course.
- Support the development of new and improved safety standards that affect all aspects of the EMS system such as safer vehicle design and human factors engineering.
- Support the creation of a national EMS safety data system that collects both patient and EMS personnel data.

State Government Stakeholders

- Implement a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs through state laws and regulations.
- Participate in the coordination of EMS safety related programs at the local, regional, state, and federal levels.
- Support the need for better national EMS responder and patient data collection and participation in systems currently available such as the E.V.E.N.T. system.
- Promote new EMS safety educational initiatives during initial education and promote the use of existing safety certification courses.
- Support the development of new and improved safety standards that affect all aspects of the EMS system such as safer vehicle design and human factors engineering.
- Support the creation of a national EMS safety data system that collects both patient and EMS personnel data.

Researchers

- Support the development and implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs.
- Participate in the coordination of EMS safety related programs at the local, regional, state, and federal levels.
- Support the need for better national EMS responder and patient data collection and participation in systems currently available such as the E.V.E.N.T. system.
- Support new EMS safety educational initiatives during initial EMS education and promote the use of existing safety certification courses.
- Participate in the development of new and improved safety standards that affect all aspects of the EMS system such as safer vehicle design and human factors engineering.
- Participate in the creation of a national EMS safety data system that collects both patient and EMS personnel data and develop safety based best practices.

EMS Vendors and Manufacturers

- Support the implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs.
- Support the coordination of EMS safety related programs at the local, regional, state, and federal levels.

- Support the need for better national EMS responder and patient data collection and participation in systems currently available such as the E.V.E.N.T. system.
- Support new EMS educational initiatives to address EMS system safety and promote the use of certification courses such as NAEMT's EMS Safety Course.
- Support the development of new and improved safety standards that affect all aspects of the EMS system such as safer vehicle design and human factors engineering.
- Support the creation of a national EMS safety data system that collects both patient and EMS personnel data.

EMS Media & Conferences

- Promote the implementation of a comprehensive system-wide safety program for their EMS system such as Just Culture or other similar programs.
- Promote the coordination of EMS safety related programs at the local, regional, state, and federal levels.
- Promote the need for better national EMS responder and patient data collection and participation in systems currently available such as the E.V.E.N.T. system.
- Provide new EMS safety educational initiatives during initial EMS education and promote the use of existing certification courses.
- Promote the development of new and improved safety standards that affect all aspects of the EMS system.
- Promote the creation of a national EMS safety data system that collects both patient and EMS personnel data.

Appendices

I. Project Origin

This project is being produced under a cooperative agreement between the National Highway Traffic Safety Administration (NHTSA), with support from the Health Resources and Services Administration's (HRSA) EMS for Children (EMSC) Program, and the American College of Emergency Physicians (ACEP).

The Strategy stems from a recommendation by the National Emergency Medical Services Advisory Council (NEMSAC). The Council is a Federal advisory committee that serves as a nationally recognized council of EMS representatives and consumers to provide advice and recommendations regarding EMS to the Department of Transportation's National Highway Traffic Safety Administration (NHTSA). In 2009, NEMSAC recommended that NHTSA create a strategy for building a culture of safety in emergency medical services.

NEMSAC characterized developing a culture of safety in EMS as its "top priority" recommendation, chosen via a systematic, evidence- and consensus-based process from among more than 80 possible issues to be addressed, in categories such as: structure/system; education/certification/workforce; funding/billing; public education/information; research/technology/data; medical oversight/quality; disaster preparedness; and operations/equipment.[2]

NEMSAC's original recommendation focused primarily on patient safety, or preventing adverse medical events. (Further details, rationale and references supporting the Council's recommendation can be found at http://ems.gov/pdf/nemsac/sep09/NEMSAC-OAR_Final_Report_092909.pdf.) The scope of the project was subsequently expanded to address EMS safety in a broader sense (to encompass patient safety, responder safety, and safety of members of the community EMS encounters in its work).

Responsibility for the content of this document rests with the American College of Emergency Physicians.

[2] http://ems.gov/pdf/nemsac/july08/Votes_Issues_July08.pdf

II. Project Timeline & Process Overview

The National EMS Culture of Safety Strategy project is structured as a three-year effort to allow for the direct involvement of the EMS community through participation of national EMS organizations as members of a Steering Committee for the project.

This is the fourth of five drafts of the Strategy. Development of the Strategy has been guided by the leadership of the Steering Committee and the project chair, Sabina Braithwaite, MD, MPH, FACEP. The Steering Committee provided detailed guidance to the project team through a combination of in-person and conference call meetings over the course of the project. Additional stakeholder input was gathered over the course of the project via public meetings and public comment on drafts.

- ✓ Steering Committee Meeting ..... April 2011
- ✓ National Stakeholder Conference ..... June 2011
- ✓ First Draft Delivered to NHTSA ..... Aug. 31, 2011
- ✓ Steering Committee Review ..... Sept./Oct. 2011
- ✓ Second Draft Available for Public Review ..... Dec. 12, 2011
- ✓ Collect Public Comment ..... until Feb 24, 2012
- ✓ Third Draft Available for Public Review ..... May 12, 2012
- ✓ National Review Meeting ..... June 19, 2012
- ✓ Fourth Draft Available for Steering Committee Review ..... Oct. 1, 2012
- ✓ NEMSAC Review Draft Complete ..... Dec. 10, 2012
- ✓ Collect NEMSAC Comments ..... Feb. 13, 2013
- ✓ Steering Committee Review Complete ..... Aug. 21, 2013

  Final Report/Project Complete ..... Sept. 23, 2013

The Steering Committee met in person in the Washington, D.C., area in April and June 2011, and again following the National Review Meeting in June 2012.

The Steering Committee was supported prior to and during the development of this Strategy by the Project Team. Support activities prior to the development of the first Draft included (but were not limited to):

- Interviews with industry thought leaders and safety experts
- Review of published literature, including findings presented by the NEMSAC Oversight, Analysis and Research Committee after a review of literature, state laws and related materials
- Review of background materials on cultures and how they change
- Review of materials presented at the National Stakeholder Conference
- Review of facilitated discussions, notes and recommendations from Conference participants

- Review of past EMS Agenda for the Future documents
- Review of discussions and recommendations by the Steering Committee
- Interviews with three authors of past Agenda documents about the processes they followed, what worked and what didn't
- In-depth discussions with physicians and pilots regarding how cultural change related to safety was facilitated within the healthcare and aviation industries.

Periodic conference calls with the complete Steering Committee have allowed the Project Team the opportunity to gather feedback and approval regarding the Strategy concept, outline and development of the first Draft. Guidance regarding the modification of the Strategy from the first to the second Draft was provided in a series of meetings between the project team and subcommittees within the full Steering Committee with specific committees focusing on individual elements of the Strategy. After public review and comment, the project team and Steering Committee again collaborated in a series of meetings to discuss and make decisions about changes to the Strategy, which changes were reflected in Draft 3. Changes reflected in Draft 4 were proposed, discussed and/or approved by the Steering Committee prior to presentation of the document to NEMSAC. Changes requested by NEMSAC were reviewed and incorporated into the Final Draft.

III. Public Input, Review & Comment

In recognition of the importance of input and support from a broad spectrum of stakeholders, the Strategy development process included several opportunities for Public comment:

National Stakeholder Meeting. A National Stakeholder Meeting was held in June 2011 in the Washington, D.C., area. The meeting was open to the public, and invitations were extended to the general EMS community as well as specifically invited individuals and stakeholder organizations, including Federal partners. Presentations included cultural change, safety culture and initiatives for responder safety and patient safety. Safety perspectives and example safety improvement initiatives were presented from outside EMS, in aviation, healthcare, construction, and firefighter life safety. Stakeholders broke into randomly chosen small groups to discuss specific issues and gather input on areas of common concern, for incorporation throughout the Strategy. Immediately following the public part of the meeting, the Steering Committee met to discuss next steps and priorities. The National Stakeholder Meeting agenda appears in Appendix VI of this document.

Public Comment on Drafts. The public review period for the document began Dec. 12, 211, with the release of the second Draft of the Strategy. That Draft was available for public comment until Feb. 24, 2012, when submitted comments were collected, reviewed and considered by the Steering Committee for the third Draft. The third Draft, released May 12, 2012, was available for public review and comment until June 19, 2012, at which point submitted comments were again considered via a similar process.

National Review Meeting. A National Review Meeting was held in the Washington, D.C., area on June 19, 2012. The meeting was open to the public, and invitations were extended to the general EMS community as well as specifically invited individuals and stakeholder organizations, including Federal partners. During the meeting comments were solicited about the document from the public and stakeholders. Specific feedback was sought about whether Draft 3 had achieved an appropriate balance among responder safety, patient safety and community safety. Additional input was sought about the diagram and primary elements of the Culture of Safety vision, as well as ideas for practical steps the EMS community can take to promote safety. The National Review Meeting agenda appears in Appendix VII of this document.

IV. Description of Safety-Related Articles & Materials Considered

The project team worked closely with NHTSA and EMSC to clarify that the literature component of this project should create a compendium of materials to include not only peer-reviewed articles, but periodicals, presentations, white papers and related materials that provided useful background information to the Steering Committee in advance of the development of the first draft of the document. Additional materials were incorporated into the reading list and shared with Project stakeholders throughout the development of the Strategy.

Due to the depth and breadth of the task of creating a national strategy to address such a significant topic, the reading list was organized into categories for consideration. These categories are:

- Safety Culture
- Crew Resource Management
- Risk
- Patient Safety
- Practitioner Safety/Occupational Injury
- Personal Health and Wellness
- Emergency Vehicle Safety

The Strategy's intent is to create momentum that will propel EMS toward success in improving responder safety and patient safety. Many of the factors considered and/or addressed in the Strategy have been discussed previously, and the envisioned elements may have been previously recommended in past efforts that did not focus on safety specifically. The intent of the Strategy is to build on work that has already been done, to the greatest degree appropriate, to enable the Strategy to function as a conduit to channel the expertise of both EMS stakeholders and other professionals toward the ultimate goal.

The *Emergency Medical Services Workforce Agenda for the Future* cited illness and injury among EMS workers as a major workforce concern and reported on research showing that the injury rate in EMS is high compared to other fields, with one study reporting an occupational fatality rate for EMS workers of more than twice the national average.[1]

A 2007 NHTSA-sponsored report, *Feasibility for an EMS Workforce Safety and Health Surveillance System*, offered rationale for a comprehensive program for surveillance of EMS illness and injury rates. The report recommended the creation of a National EMS Workforce Injury and Illness Surveillance Program (EMS-WIISP).

Other references to past works appear throughout this document.

V. Project Participants

Steering Committee

American Academy of Pediatrics
American Ambulance Association
American College of Emergency Physicians
American College of Surgeons – Committee on Trauma
Commission on Accreditation of Ambulance Services (CAAS)
Commission on Accreditation of Medical Transport Systems
Emergency Medical Services for Children, National Resource Center
Emergency Nurses Association
Governors Highway Safety Administration
International Association of EMS Chiefs
International Association of Fire Chiefs
International Association of Fire Fighters
International Association of Flight and Critical Care Paramedics
National Association of EMS Physicians
National Association of State EMS Officials
National Association of Emergency Medical Technicians
National EMS Management Association
National Volunteer Fire Council

Additional Involved Organizations

Advocates for EMS
Air and Surface Transport Nurses Association
Air Medical Journal
Air Medical Physicians Association
American Academy of Orthopedic Surgeons
American College of Osteopathic Emergency Physicians
American Hospital Association
American Society for Testing and Materials (ASTM F-30 EMS)
American Trauma Society
Association of Air Medical Services
Association of Critical Care Transport
Best Practices in Emergency Services
Committee on Accreditation of Educational Programs for the EMS Professions
Continuing Education Coordinating Board for EMS
Emergency Medical Services for Children-NRC
EMS Labor Alliance
EMS World
Federal Interagency Committee on Emergency Medical Services (FICEMS)
International Association for Healthcare Security and Safety
Institute of Medicine
Journal of Emergency Medical Services
National Academies of Emergency Dispatch

National Association for Search and Rescue
National Association of EMS Educators
National Collegiate EMS Foundation
National EMS Association
National EMS Pilots Association
National Fire Protection Association
National Native American EMS Association
National Organization of State Offices of Rural Health
National Registry of Emergency Medical Technicians
National Rural Health Association
National Safety Council
Society for Academic Emergency Medicine
The Joint Commission
Transportation Research Board of the National Academies, EMS Safety Subcommittee

Federal Agencies

National Highway Traffic Safety Administration (NHTSA)
Health Resources and Services Administration's (HRSA) EMS for Children (EMSC)
Occupational Safety and Health Administration (OSHA)
The National Institute for Occupational Safety and Health (NIOSH)
Department of Homeland Security – Office of Health Affairs (DHS-OHA)
Department of Health and Human Services – Assistant Secretary for Preparedness and Response (HHS-ASPR)
Centers for Disease Control and Prevention (CDC)
United States Fire Administration (USFA)

Project Team

American College of Emergency Physicians (Project Lead)
Sabina Braithwaite, MD, MPH, FACEP, Steering Committee Chair

Craig Manifold, DO, FACEP
Rick Murray, EMT-P
Pat Elmes, EMT-P (ret.)
Deb Fly

The RedFlash Group (Technical Writing and Development)
Jeff Lucia, EMT-P (ret.)
Keith Griffiths
Tricia Duva
Jake Knight
Deedee Coffey

VI. National Stakeholder Meeting Agenda

Monday, June 27, 2011 8:00 a.m. – 5:00 p.m.

8 – 8:45 a.m. Welcome and Introduction

Drew Dawson – Director, Office of EMS, NHTSA
Elizabeth Edgerton, MD, MPH, – EMSC and Injury Prevention Branch Chief, HRSA
Sabina Braithwaite, MD, MPH, FACEP – Steering Committee Chair, ACEP

Session 1

8:45 – 9:45 a.m. Just Culture: Engineering Better Outcomes for EMS

K. Scott Griffith, MS – Just Culture Community, Outcome Engineering

Mr. Griffith has more than two decades of experience at American Airlines - the world's largest airline - first as a pilot, then as the Managing Director of Corporate Safety and Quality Evaluations. He now works with airline, healthcare and EMS organizations to develop open, fair, and just cultures that are supportive of system safety by facilitating open communication within the organization, while working within a system of accountability that supports safe behavioral choices among staff.

9:45 – 10:45 a.m. Breakout Discussion

10:45 - 11 a.m. Break

Session 2

11 – 11:30 a.m. Cultural Change – Lessons from the Institute for Healthcare Improvement

David M. Williams, PhD – Principal and Chief Improvement Officer, Positive Eye Consulting

A former urban street paramedic, Dr. Williams has acted as an internal and external improvement advisor to governmental agencies, hospitals, and for-profit and not-for-profit organizations. He is a faculty member of the Institute for Healthcare Improvement (IHI) and is an IHI improvement advisor. He is also on the teaching faculty of The George Washington University School of Medicine and Health Sciences.

11:30 – 12:15 p.m. Breakout Discussion

12:15 – 1:15 p.m. Lunch (on your own)

Session 3

1:15 – 2:15 p.m. The Intersection of EMS Safety and Patient Safety

Daniel Patterson, PhD, MPH, EMT-B and Blair Bigham, MSc, ACPf

Dr. Patterson's efforts to improve quality, safety and performance in emergency medical care are featured in his most recently published article, *Variations in Emergency Medical Services Workplace Safety Culture*. He is a Prehospital Emergency Care Assistant Professor at the University of Pittsburgh School of Medicine and is Director for Research at the Center for Emergency Medicine of Western PA.

Mr. Bigham is an advanced care flight paramedic in Southern Ontario, Canada. He is an investigator at Rescu, the resuscitation science program at the University of Toronto and St. Michael's Hospital, and holds a faculty position at Centennial College. He was the lead author for the recent paper, *Patient Safety in Emergency Medical Services – Advancing and Aligning the Culture of Patient Safety in EMS.*

2:15 – 3:15 p.m. Breakout Discussion

3:15 – 3:30 p.m. *Break*

Session 4

3:30 – 4 p.m. **Building a Culture of Safety From the Ground Up: Insight from the Construction and Healthcare Industries**

Michael Szczygiel, Senior Loss Control Representative, THOMCO - Medical Transportation Division

A paramedic, and faculty member of the Emergency Medical Training Program at the University of Kansas School of Medicine College of Health Sciences, Mr. Szczygiel approved all paramedic training in Kansas and wrote and administered the State paramedic certification exam. After more than 20 years in EMS, he became Director of Risk Management for a tertiary care center, community hospital and a psychiatric hospital. He is a member of the NAEMT Health & Safety Committee, and he helped develop and teach the NAEMT Safety Course. Additionally, Szczygiel serves as Director of Safety, on an ad hoc basis, for Central States Contracting Services, a Mechanical & General Contractor.

4 – 4:45 p.m. **Breakout Discussion**

4:45 p.m. **Reconvene**
Discuss Day Two – Sabina Braithwaite, MD, MPH, FACEP, Steering Committee Chair, ACEP

5 p.m. *Conference Day 1 Complete*

Dinner (on your own)

Tuesday, June 28 8:00 a.m. – noon

8 - 8:15 a.m. **Putting It All Together**

Sabina Braithwaite, MD, MPH, FACEP – Steering Committee Chair, ACEP

8:15 – 8:45 a.m. Case Study – Firefighter Life Safety Initiatives; Everyone Goes Home

Chief Ronald J. Siarnicki, Executive Director, National Fallen Firefighters Foundation

Chief Siarnicki is the executive director of the National Fallen Firefighters Foundation- a nonprofit organization that was established by the United States Congress to honor and remember America's fallen fire heroes and to provide re-sources to assist survivors in the rebuilding of their lives. He oversees the Foundation's programs, services, and activities, including the National Fallen Firefighters Memorial Weekend, survivor support programs, fire service training and support programs, and the expansion of the official national memorial site to create a national memorial park.

8:45 – 10:15 a.m. **Breakout Discussion**

10:15 - 10:30 a.m. *Break*

10:30 – 11:45 a.m. **Full Group Discussion**

11:45 a.m. **Conference Wrap-Up**

Sabina Braithwaite, MD, MPH, FACEP – Steering Committee Chair, ACEP
Elizabeth Edgerton, MD, MPH, - EMSC and Injury Prevention Branch Chief, HRSA
Drew Dawson – Director, Office of EMS, NHTSA

EMS Culture of Safety Strategy
National Review Team Meeting

Sheraton National, Arlington, VA
June 19, 2012
8:30 AM-4:30 PM

8:30 AM	Welcome, Housekeeping and Introductions
8:45 AM	Where We Have Been and Future Direction
9:00 AM	Creating a Culture of Safety – Are we headed in the right direction?

Purpose: *To solicit broad comments about the document, to get the audience talking, to allow folks an opportunity to "say their piece" and to provide positive suggestions for improvement (Philosophical discussion).*

10:00 AM	Break
10:15 AM	Right balance – EMS Personnel, Patient and safety of the public?

Purpose: *One of the challenges Culture of Safety is creating a pervasive culture – one that touches the personnel, the patient and the public. This section will elicit feedback on whether we have established the correct balance.*

10:45 AM	EMS Culture and Safety – What do you think?

Purpose: *To solicit feedback on the "Culture and Safety" component of the document.*

11:45 AM	Summary of morning discussion and introduce afternoon session
12:00 PM	Lunch
1:00 PM	Suggested elements –Will this move us forward??

Purpose: *Focus specific comments on the diagram and each of the elements.*

a. *Discuss diagram*
b. *Data System*
c. *Education Initiatives*
d. *Standards*
e. *Reporting and Investigations*
f. *Other issues?*

3:00 PM	Afternoon break

3:15 PM	Next steps – What can the EMS community do collectively to promote a Culture of Safety? ***Purpose:*** *This session is to identify specific action steps that the EMS community could take right now to implement the Culture of Safety. This is not necessarily Federal action, but activities of local, state and national organizations.* ***(Note:*** *need to be careful that we are not attempting to arrive at consensus)*
4:00 PM	Wrap up and project next steps
4:30 PM	Adjourn

VIII. NEMSAC OAR Report: Reducing Adverse Events in EMS: Creating a Culture of Safety

NOTE: THIS REPORT HAS BEEN OMITTED FROM THIS DOCUMENT TO LIMIT FILE SIZE AND PRINTING EXPENSE. THE REPORT IS AVAILABLE IN PDF FORMAT AT THE FOLLOWING LINK.

http://ems.gov/pdf/nemsac/sep09/NEMSAC-OAR_Final_Report_092909.pdf

National EMS Advisory Council
Committee Reporting Template
June 2, 2009
FINAL

Committee: Safety
Title: EMS Injury and Safety Data

ISSUE SYNOPSIS:

A. PROBLEM STATEMENT

Emergency Medical Services (EMS) has been identified as a high risk industry with injuries and deaths among both service providers and the public. The current lack of a comprehensive EMS injury data system, capable of collecting, cataloging and reporting standardized EMS crash and non-crash related injury data, severely limits the industry's ability to develop, test and implement mitigation strategies. The task of identifying injury causative factors becomes far too speculative without timely, accurate, complete, integrated and accessible data that includes location, cause, contributing factors, and related activities associated with injuries involving EMS personnel. This report does not focus on medical errors.

B. RESOURCES/REFERENCES RELATED TO THE ISSUE

- Model Minimum Uniform Crash Criteria: DOT HS 810 957 June 2008
- American National Standard Institute (ANSI) D16.1 Manual on Classification of Motor Vehicle Traffic Accidents, Seventh Edition
- American National Standard Institute (ANSI) D20-1 Data Element Dictionary on for Traffic Records Systems
- Feasibility for an EMS Workforce Safety and Health Surveillance System, NHTSA
- Bureau of Labor Statistics Injury Data
- Study of Emergency Vehicle Warning Lighting, (July 2005) USFA
- Emergency Vehicle Visibility and Conspicuity Study, USFA

Additionally, there are three projects in progress that may provide insight to this topic. They are:

- NIOSH - National Electronic Injury Surveillance System (NEISS) project
- NIOSH – Project on interior design issues of ambulances.
- NFPA – the development of standard on ambulance design.

C. CROSSWALK WITH OTHER STANDARDS

- National Emergency Medical Services Information System (NEMSIS): NHTSA Version 2.2.1

D. ANALYSIS

Emergency Medical Technicians and Paramedics are routinely exposed to factors that threaten personal as well as patient safety.

The public, government, and EMS industry have a duty to identify these threats, find ways to remove and reduce their impact, and develop a culture of safety in EMS, as espoused by the National EMS Advisory Council.

There are limited sources of existing data that identify threats to personnel and patient safety. Non-vehicle/crash related injuries are by far the most numerous and their cost to the industry and society is staggering. Non-vehicle/crash injuries also present the biggest challenge for researchers as there are few established data definitions and repositories for the collection and analysis of these types of incidents.

In contrast there are several federally sponsored data capture and analysis systems which can be use to obtain EMS transport incidents. The most prominent systems are directed by the National Highway Traffic Safety Administration (NHTSA), Federal Highway Administration (FHWA), Federal Motor Carrier Safety Administration (FMCSA), and the National EMS Information System (NEMSIS).

The data collected by most of these systems originate from traffic crash data recorded by local law enforcement agencies responding to highway crashes. Police Accident Reports (PAR) are completed on scene then uploaded into local and/or State maintained data bases. State crash information is then uploaded into national data collection and analysis systems.

Data definitions used to input information into State crash files is published in the

DOT report “Model Minimum Uniform Crash Criteria (MMUCC)” and the American National Standard Institute (ANSI) D16.1 “Manual on Classification of Motor Vehicle Traffic Accidents”, Seventh Edition. State PAR definitions are reported to be 75% compliant with the standards contained in MMUCC and ANSI D16.1.

The examination of data definitions and elements captured by States indicates a wide range of interpretation related to EMS programs. For example, a search of ANSI D16.1-2007 reveals no references to “ambulance vehicles” or to “fire trucks”. The MMUCC definition for “ambulance” is now defined as, “any public of private ambulance service under contract to a jurisdiction to provide emergency response for medical emergencies.” A fire truck is now included in the general definition of an emergency motor vehicle, “Indicates operation of any motor vehicle that is legally authorized by a government authority to respond to emergencies with or without use of emergency warning equipment, such as police vehicle, fire truck, or ambulance while actually engaged in such response.” Collecting data using dissimilar definitions for EMS is problematic and often results in inaccurate reporting.

There are also other initiatives on the non-governmental side that are capturing data on incidents. The National Fire Fighter Near-Miss Reporting System is a voluntary, confidential, non-punitive and secure reporting system with the goal of improving fire fighter safety. The data collection allows for an EMS provider, regardless of agency type, to report near misses in the collection system. You can find additional information at: http://www.firefighternearmiss.com/. EMSCloseCalls.com is operated by an individual and offers a similar format for personnel to upload information as a result of a close call. CONCERN network is a reporting database system for air medical services to report incidents.

The most blatant limitation with these sources of data is heterogeneity in terminology. For example data definitions used to track vehicle crash and their resulting injuries, fail to identify EMS-specific terms such as: What is an ambulance? What is an EMS System? What constitutes an EMS call? What differentiates a run, trip, call, response, incident, and/or dispatch?

Similar disparities in data collection can be noted when comparing data definitions used to capture information on transportation injuries as vehicles used for EMS purposes are, in some cases, exempted from FMCSA safety oversight. The analysis of EMS injury data is an important step in the process of reducing the rate of crash and non-crash related injuries and fatalities among EMS workers, their patients and the general public. Current data capture systems fail to capture the important elements of injuries and the associated denominator data such as miles traveled, vehicle miles, scheduled work hours, hours on duty, and hours responding to calls. This information is an important foundation for any project designed for the purpose of reducing risks and improving the general culture of safety within the industry.

E. COMMITTEE CONCLUSION

An essential element in creating a culture of safety is establishing a baseline of known hazards and injuries. Existing federal and non-federal systems for measuring worker, patient, and public injuries and fatalities fall short of meeting the needs of the industry.

RECOMMENDED ACTIONS/STRATEGIES:

National EMS Advisory Council

The Safety Committee recommends the establishment of a standing sub-committee on "EMS Safety Data" to pursue the future development of information processing system(s), process or services capable of providing the analytical tools needed for the mitigation of illnesses, injuries, and deaths to EMS providers, patients, and public.

National Highway Traffic Safety Administration

The National EMS Advisory Council recommends a NHTSA review of current data definitions relating to EMS illnesses, injuries and deaths, to include definitions contained in MMUCC, ANSI D 16.1, and any other database system recording EMS illnesses, injuries, and deaths.

The National EMS Advisory Council recommends NHTSA to encourage and develop relationships between federal and non-federal partners utilizing existing reporting systems to improve consistency of terminology and access to data sources on EMS illnesses, injuries, and deaths. (i.e. IAFC Near Miss reporting system, Bureau of Labor Statistics, National Transportation Safety Board)

Other Department of Transportation
None

Federal Interagency Committee on Emergency Medical Services
The National EMS Advisory Council recommends NHTSA work with FICEMS to assure integration and utilization of EMS illnesses, injury, and fatality surveillance databases across federal agencies.

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Appendix I:

NREMT Implementation of AHA Guidelines

National Registry of
Emergency Medical Technicians®
THE NATION'S EMS CERTIFICATION™

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National Registry of EMTs' Implementation of the 2015 AHA Guidelines for CPR and Emergency Cardiovascular Care

In consideration of implementation of the 2015 American Heart Association (AHA) Guidelines for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care (ECC), the National Registry of Emergency Medical Technicians (NREMT) has completed a review of the available published documents to date. The most significant change in the development of the 2015 AHA Guidelines is that this update is based on the International Liaison Committee on Resuscitation's (ILCOR) comprehensive review of prioritized topics and is not a comprehensive revision of the 2010 Guidelines. Of note, the AHA did incorporate many of the 2010 Guideline recommendations, some of which are included below. The NREMT Standards & Examination Committee has discussed and approved the impact of the recommended changes to all National EMS Certification materials. As previously announced, the NREMT will be implementing the associated recommendations of the 2015 AHA Guidelines for CPR and ECC for all levels of National EMS Certification (NREMR, NREMT, NRAEMT, NRP) beginning September 1, 2016.

The NREMT will continue to require that all candidates for National EMS Certification possess a current and valid CPR credential which is equivalent to the AHA's BLS Provider Course. The following will highlight our understanding of the significant changes contained in the 2015 AHA Guidelines.

Basic Life Support

The NREMT supports the 2015 AHA Guidelines which re-emphasize the sequence for CPR to be C-A-B in unresponsive patients (Compressions, Airway, Breathing). In order to minimize delay in beginning chest compressions, simultaneous breathing and pulse check should be limited to no more than 10 seconds. Healthcare providers should provide both chest compressions and ventilations for victims of cardiopulmonary arrest. Administration of immediate, high-quality CPR is considered of utmost importance which is characterized by:

- Ensuring chest compressions at a rate of at least 100 compressions per minute but no more than 120 compressions per minute for both adult and pediatric patients.
- Ensuring chest compressions at an adequate depth of between 2 – 2.4 inches (5 – 6 cm) in adults and adolescents, 2 inches (5 cm) in children, and 1.5 inches (4 cm) in infants. Chest compression depth should not exceed 2.4 inches (6 cm).
- Allowing full chest recoil between compressions to promote venous return. Avoid leaning on the chest wall between compressions.

- Minimizing interruptions in chest compressions in all patients. For adult patients in cardiac arrest, the goal compression fraction (the percentage of time during the entire resuscitation that compressions are being performed) is 60 – 80%.
- Avoiding excessive ventilation. Without an advanced airway, adult patients should receive CPR using a compression-to-ventilation ratio of 30:2. One rescuer for a pediatric patient should use a 30:2 ratio; however two rescuers should use a 15:2 ratio. With an advanced airway in place, ventilation should be delivered at a rate of 10 per minute for adults and 12 – 20 per minute for pediatric patients. Passive ventilation techniques are not recommended when delivering conventional CPR.

We also note the following BLS recommendations:

- Rapid defibrillation remains a significant focus with a recommendation to use an AED as soon as one is available for adult and pediatric patients. CPR should be provided while the AED is retrieved, attached to the patient, and preparing to analyze the rhythm.
- The use of mechanical compression devices may be considered in settings where the delivery of high-quality CPR is challenging or dangerous for the provider (i.e., in a moving ambulance). However, the evidence does not demonstrate a benefit of mechanical compression devices versus manual compressions in cardiac arrest patients.
- After achieving ROSC, oxygen administration should be adjusted to maintain oxygen saturation levels of at least 94% but less than 100%. (2010 Guideline)
- Neonatal suctioning immediately following birth (including suctioning with a bulb syringe) should be reserved for babies who have obstruction to spontaneous breathing or who require positive pressure ventilation. (2010 Guideline)
- In consideration of the significant public health issue of opioid overdoses, it is appropriate for BLS providers who are properly trained to administer naloxone for opioid-associated resuscitation emergencies if the patient is not in cardiac arrest and if permitted by local regulations. Opioid-associated resuscitative emergencies are defined as the presence of cardiac arrest, respiratory arrest, or severe life-threatening instability due to opiate toxicity. However, any pulseless individual should be managed as a cardiac arrest patient using standard resuscitation measures with a focus on high-quality CPR as described above.

Advanced Cardiovascular Life Support

We also note the following updates to the ACLS recommendations:

- Epinephrine may be administered as quickly as possible following cardiac arrest with a non-shockable rhythm. The use of vasopressin for resuscitation is no longer recommended since outcomes were the same as those when epinephrine was administered.
- Amiodarone or lidocaine may be considered for patients with ventricular fibrillation (VF) or pulseless ventricular tachycardia (pVT) that is unresponsive to CPR, defibrillation, and vasopressors. After achieving ROSC from cardiac arrest due to VF or pVT, lidocaine may be considered as an alternative to amiodarone.
- Failure to achieve an $EtCO_2$ greater than 10 mmHg by waveform capnography in an intubated patient after 20 minutes of CPR may be considered as one factor in the decision to terminate resuscitative efforts.
- Atropine should be administered for the initial treatment of bradycardia that produces signs and symptoms of instability (acutely altered mental status, ischemic chest discomfort, acute heart failure, hypotension, or other signs of shock that persist despite adequate airway and breathing). If bradycardia is unresponsive to atropine, IV infusion of beta-adrenergic agonists with rate-accelerating effects (dopamine, epinephrine) or transcutaneous pacing can be effective. (2010 Guideline)
- Immediate transcutaneous pacing might be considered for the treatment of bradycardia in unstable patients who have a high-degree AV block when IV access is not available. (2010 Guideline)
- In the pregnant patient, manual left uterine displacement can be beneficial in relieving aortocaval compression when the fundus height is at or above the level of the umbilicus.
- Out-of-hospital 12-lead ECGs should be acquired for patients who have possible acute coronary syndromes. Interpretation in the field, including the use of computer-assisted ECG interpretations, should be used to determine evidence of STEMI. Providers should notify the receiving facility and/or activate the catheterization laboratory for all patients who have an identified STEMI. Direct transport to a hospital capable of performing percutaneous coronary intervention may be indicated for these patients.
- Use of cold IV fluids after achieving ROSC is not recommended in the out-of-hospital setting. Focus is now placed on in-hospital targeted temperature management.

Pediatric Advanced Life Support

We also note the following updates to the recommendations for management of pediatric patients:

- The early, rapid IV administration of an initial isotonic fluid bolus of 20 mL/kg in children who have hypovolemic or septic shock is recommended. In areas with limited critical care resources, administration of fluid boluses in febrile children should be undertaken with caution and with frequent clinical reassessment.
- Lidocaine or amiodarone are equally acceptable to treat shock-refractory ventricular tachycardia or pulseless ventricular tachycardia in children.
- It is reasonable to use epinephrine during pediatric cardiac arrest. Although epinephrine administration improves ROSC and survival to hospital admission, there is no evidence that treatment with epinephrine improves survival to hospital discharge in pediatric patients.
- Post-resuscitation care for the pediatric patient may include fluids and vasopressors titrated to achieve a systolic blood pressure above the fifth percentile for age. Normoxia should be targeted with oxygen administration weaned to an oxyhemoglobin saturation of 94% to 99%.

Thank you for your interest and support of National EMS Certification. For readily available web access to the integrated 2015 and 2010 AHA Guidelines for CPR and ECC, the reader should visit https://eccguidelines.heart.org/index.php/circulation/cpr-ecc-guidelines-2/.

Appendix J:

“What Works, What Doesn’t”


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4

WHAT WORKS, WHAT DOESN'T

Some study techniques accelerate learning, whereas others are just a waste of time—but which ones are which? An unprecedented review maps out the best pathways to knowledge

BY JOHN DUNLOSKY, KATHERINE A. RAWSON, ELIZABETH J. MARSH, MITCHELL J. NATHAN AND DANIEL T. WILLINGHAM

ILLUSTRATIONS BY CELIA JOHNSON

ANDREW LILLEY /*Stockphoto (blocks)*

Education generally focuses on what you study, such as algebra, the elements of the periodic table or how to conjugate verbs. But learning how to study can be just as important, with lifelong benefits. It can teach you to pick up knowledge faster and more efficiently and allow you to retain information for years rather than days.

Cognitive and educational psychologists have developed and evaluated numerous techniques, ranging from rereading to summarizing to self-testing, for more than 100 years. Some common strategies markedly improve student achievement, whereas others are time-consuming and ineffective. Yet this information is not making its way into the classroom. Teachers today are not being told which learning techniques are supported by experimental evidence, and students are not being taught how to use the ones that work well. In fact, the two study aids that students rely on the most are not effective. One of them may even undermine success.

One potential reason is that the huge amount of research is overwhelming, making it difficult for educators and students to identify the most practical and advantageous ways to study. To meet this challenge, we reviewed more than 700 scientific articles on 10 commonly used learning techniques. We focused on strategies that seem to be easy to use and broadly effective. We also took a closer look at a couple of methods that are very popular with students.

To receive our recommendation, a technique must be useful in a range of learning conditions, such as whether a student works alone or in a group. It must assist learners of various ages, abilities and levels of prior knowledge—and it must have been tested in a classroom or other real-world situation. Learners should be able to use the method to master a variety of subjects, and their performance should benefit no matter what kind of test is used to measure it. The best approaches also result in long-lasting improvements in knowledge and comprehension.

Using these criteria, we identified two clear winners. They produced robust, durable results and were relevant in many situations. Three more are recommended with reservations, and five—including two popular learning aids—are not advised, either because they are useful only in limited circumstances or because not enough evidence supports a higher rating. We encourage researchers to further explore some of the untested techniques, but students and teachers should be cautious about relying on them.

FAST FACTS

Rating the Best Ways to Study

1» **Some study methods work in many different situations and across topics, boosting test performance and long-term retention. Learning how to learn can have lifelong benefits.**

2» **Self-testing and spreading out study sessions—so-called distributed practice—are excellent ways to improve learning. They are efficient, easy to use and effective.**

3» **Underlining and rereading, two methods that many students use, are ineffective and can be time-consuming.**

4» **Other learning techniques need further testing and evaluation. In the meantime, students and teachers can put proved study methods to use in classrooms and at home.**

THE GOLD STAR WINNERS

1. SELF-TESTING Quizzing Yourself Gets High Marks

HOW IT WORKS: Unlike a test that evaluates knowledge, practice tests are done by students on their own, outside of class. Methods might include using flash cards (physical or digital) to test recall or answering the sample questions at the end of a textbook chapter. Although most students prefer to take as few tests as possible, hundreds of experiments show that self-testing improves learning and retention.

In one study, undergraduates were asked to memorize word pairs, half of which were then included on a recall test. One week later the students remembered 35 percent of the word pairs they had been tested on, compared with only 4 percent of those they had not. In another demonstration, undergraduates were presented with Swahili-English word pairs, followed by either practice testing or review. Recall for items they had been repeatedly tested on was 80 percent, compared with only 36 percent for items they had restudied. One theory is that practice testing triggers a mental search of long-term memory that activates related information, forming multiple memory pathways that make the information easier to access.

WHEN DOES IT WORK? Anyone from preschoolers to fourth-year medical students to middle-age adults can benefit from practice testing. It can be used for all kinds of factual information, including learning words in foreign languages, making spelling lists and memorizing the parts of flowers. It even improves retention for people with Alzheimer's disease. Short, frequent exams are most effective, especially when test takers receive feedback on the correct answers.

Practice testing works even when its format is different from that of the real test. The beneficial effects may last for months to years—great news, given that durable learning is so important.

IS IT PRACTICAL? Yes. It requires modest amounts of time and little to no training.

HOW CAN I DO IT? Students can self-test with flash cards or by using the Cornell system: during in-class note taking, make a column on one edge of the page where you enter key terms or questions. You can test yourself later by covering the notes and answering the questions (or explaining the keywords) on the other side.

RATING: High utility. Practice testing works across an impressive range of formats, content, learner ages and retention intervals.

WE REVIEWED MORE THAN 700 SCIENTIFIC ARTICLES ON 10 COMMON LEARNING TECHNIQUES TO IDENTIFY THE MOST ADVANTAGEOUS WAYS TO STUDY.

ISTOCKPHOTO (*star*)

2. DISTRIBUTED PRACTICE
For Best Results, Spread Your Study over Time

HOW IT WORKS: Students often "mass" their study—in other words, they cram. But distributing learning over time is much more effective. In one classic experiment, students learned the English equivalents of Spanish words, then reviewed the material in six sessions. One group did the review sessions back to back, another had them one day apart and a third did the reviews 30 days apart. The students in the 30-day group remembered the translations the best. In an analysis of 254

studies involving more than 14,000 participants, students recalled more after spaced study (scoring 47 percent overall) than after massed study (37 percent).

WHEN DOES IT WORK? Children as young as age three benefit, as do undergraduates and older adults. Distributed practice is effective for learning foreign vocabulary, word definitions, and even skills such as mathematics, music and surgery.

IS IT PRACTICAL? Yes. Although textbooks usually group problems together by topic, you can intersperse them on your own. You will have to plan ahead and overcome the common student tendency to procrastinate.

HOW CAN I DO IT? Longer intervals are generally more effective. In one study, 30-day delays improved performance more than lags of just one day. In an Internet-based study of trivia learning, peak performance came when sessions were spaced at about 10 to 20 percent of the retention interval. To remember something for one week, learning episodes should be 12 to 24 hours apart; to remember something for five years, they should be spaced six to 12 months apart. Although it may not seem like it, you actually do retain information even during these long intervals, and you quickly relearn what you have forgotten. Long delays between study periods are ideal to retain fundamental concepts that form the basis for advanced knowledge.

RATING: High utility. Distributed practice is effective for learners of different ages studying a wide variety of materials and over long delays. It is easy to do and has been used successfully in a number of real-world classroom studies.

THE RUNNERS-UP

Despite their promise, the following learning techniques fall short, in many cases because not enough evidence has been amassed to support their use. Some techniques, such as elaborative interrogation and self-explanation, have not been evaluated sufficiently in real-world educational contexts. Another emerging method called interleaved practice has just begun to be systematically explored. Nevertheless, these techniques show enough potential for us to recommend their use in the situations described briefly here.

3. ELABORATIVE INTERROGATION Channel Your Inner Four-Year-Old

HOW IT WORKS: Inquisitive by nature, we are always looking for explanations for the world around us. A sizable body of evidence suggests that prompting students to answer "Why?" questions also facilitates learning.

With this technique, called elaborative interrogation, learners produce explanations for facts, such as "Why does it make sense that…?" or "Why is this true?" In one experiment, for example, students read sentences such as "the hungry man got into the car." Participants in an elaborative interrogation group were asked to explain why, whereas others were provided with an explanation, such as "the hungry man got into the car to go to the restaurant." A third group simply read each sentence. When asked to recall which man performed what action ("Who got in the car?"), the elaborative-interrogation group answered about 72 percent correctly, compared with about 37 percent for the others.

WHEN SHOULD I USE IT? When you are learning factual information—particularly if you already know something about the subject. Its power increases with prior knowledge; German students benefitted from elaborative interrogation more when they were learning about German states than about Canadian provinces, for example. It may be that prior knowledge permits students to generate more appropriate explanations for why a fact is true.

PROMPTING STUDENTS TO ANSWER "WHY?" QUESTIONS, CALLED ELABORATIVE INTERROGATION, ALSO FACILITATES LEARNING.

The effects of this technique appear to be robust across ages, from fourth graders through undergraduates. Elaborative interrogation clearly improves memory for facts, but whether it also might enhance comprehension is less certain, and there is no conclusive information about how long the gains in learning persist.

IS IT PRACTICAL? Yes. It requires minimal training and makes reasonable time demands. In one study, an elaborative-interrogation group required 32 minutes to do a task that took 28 minutes for a reading-only group.

RATING: Moderate utility. The technique works for a broad range of topics but may not be useful for material more complex than a factual list. Benefits for learners without prior knowledge may be limited. More research will be needed to establish whether elaborative interrogation generalizes to various situations and different types of information.

4. SELF-EXPLANATION How Do I Know?

HOW IT WORKS: Students generate explanations of what they learn, reviewing their mental processing with questions such as "What new information does the sentence provide for you?" and "How does it relate to what you already know?" Similar to elaborative interrogation, self-explanation may help integrate new information with prior knowledge.

WHEN SHOULD I USE IT? It benefits kindergartners to college students and helps in solving math problems and logical reasoning puzzles, learning from narrative texts and even mastering endgame strategies in chess. In younger children, self-explanation can help with basic ideas such as learning numbers or patterns. The technique improves memory, comprehension and problem solving—an impressive range of outcomes. Most studies, however, have measured effects within only a few minutes, and it is not known whether the technique is more lasting in people of high or low knowledge.

IS IT PRACTICAL? Unclear. On the one hand, most students need minimal instruction and little to no practice, although one test of ninth graders showed that students without training tended to paraphrase rather than generate explanations. On the other, a few studies report that this technique is time-consuming, increasing time demands by 30 to 100 percent.

RATING: Moderate utility. Self-explanation works across different subjects and an impressive age range. Further research must establish whether these effects are durable and whether the time demands make it worthwhile.

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5. INTERLEAVED PRACTICE
Mixing Apples and Oranges

HOW IT WORKS: Students tend to study in blocks, finishing one topic or type of problem before moving on to the next. But recent research has shown benefits for interleaved practice, in which students alternate a variety of types of information or problems. In one study, for example, college students learned to compute the volumes of four different geometric shapes. In a so-called blocked-practice condition, they finished all the problems for one shape before moving on to the next. In interleaved practice, the problems were intermixed. When tested one week later, the interleaved

What Doesn't Work

These techniques were rated as low utility because they are inefficient, ineffective or beneficial only for certain types of learning and for short periods of retention. Most students report rereading and highlighting, yet these techniques do not consistently boost performance, and they distract students from more productive strategies. Other methods mentioned below are just too time-consuming.

HIGHLIGHTING

Students commonly report underlining, highlighting or otherwise marking material. It is simple and quick—but it does little to improve performance. In controlled studies, highlighting has failed to help U.S. Air Force basic trainees, children and remedial students, as well as typical undergraduates. Underlining was ineffective regardless of text length and topic, whether it was aerodynamics, ancient Greek schools or Tanzania.

In fact, it may actually hurt performance on some higher-level tasks. One study of education majors found that underlining reduced their ability to draw inferences from a history textbook. It may be that underlining draws attention to individual items rather than to connections across items.

WHAT YOU SHOULD DO INSTEAD: Highlighting or underlining can be useful if it is the beginning of a journey—if the marked information is then turned into flash cards or self-tests. Given that students are very likely to continue to use this popular technique, future research should be aimed at teaching students how to highlight more effectively—which likely means doing it more judiciously (most undergraduates overmark texts) and putting that information to work with a more useful learning technique.

REREADING

In one survey of undergraduates at an elite university, 84 percent said they reread textbooks or notes during study. It requires no training, makes modest demands on time, and has shown some benefits on recall and fill-in-the-blank-style tests.

Yet the evidence is muddy that rereading strengthens comprehension, and whether its effects depend on knowledge level or ability is also woefully underexplored. Most of the benefit of rereading appears to accrue from the second reading, with diminishing returns from additional repetitions. No experimental research has assessed it using materials from actual courses—ironic, given that this strategy is the one most commonly reported by students.

WHAT YOU SHOULD DO INSTEAD: Don't waste your time—in head-to-head comparisons, rereading fares poorly against more active strategies such as elaborative interrogation, self-explanation and practice testing.

Three less commonly used study techniques also fared poorly in our assessment. "Imagery for text learning" needs more evidence before it can be recommended, whereas "summarization" and "keyword mnemonic" appear to be ineffective and time-consuming.

In summarization, students identify a text's main points, excluding unimportant material. Whether it works is difficult to answer, as it has been implemented in many different ways. It is unknown whether summarizing small pieces of a text or large chunks of it works better or whether the length, readability or organization of the material matters.

With keyword mnemonics, imagery is used to enhance memory; for example, a student learning the French word *la dent* ("tooth") might use the similar-sounding English word "dentist" to form a mental image of a dentist holding a large molar. Mnemonics do seem to help with foreign-language vocabulary, word definitions and medical terminology, but the effects have not been shown to endure, and in the end the effort involved in generating keywords may not be an efficient use of time.

Another technique that uses mental pictures is imagery for text learning, in which students are told to create images for every paragraph they read. Research has revealed a patchwork of inconsistent results that have not been shown to last over the long term. Teachers may consider instructing students to attempt using this technique with image-friendly texts, but further demonstrations of its usefulness are necessary.

» See the *Psychological Science in the Public Interest* article "Improving Students' Learning with Effective Learning Techniques: Promising Directions from Cognitive and Educational Psychology," on which this story for *Scientific American Mind* is based, at the Association for Psychological Science's Web site: **www.psychologicalscience.org**

practice group was 43 percent more accurate. Interleaving allows students to practice selecting the correct method and encourages them to compare different kinds of problems.

WHEN SHOULD I USE IT? When the types of problems are similar, perhaps because juxtaposing them makes it easier to see what is different about them. Blocked practice—doing all the items from one category in a row—may be more effective when the examples are not very much alike because it highlights what they have in common.

It is possible that interleaved practice benefits only those who are already reasonably competent. Outcomes are also mixed for different types of content. It improves performance on algebra problems and was effective in a study that trained medical students to interpret electrical recordings to diagnose cardiac disorders. Yet two studies of foreign-vocabulary learning showed no effect for interleaved practice. Nevertheless, given how much difficulty many students have in mathematics, it may still be a worthwhile strategy for that subject.

STUDENTS ARE NOT BEING TAUGHT THE BEST STRATEGIES, PERHAPS BECAUSE TEACHERS THEMSELVES ARE NOT SCHOOLED IN THEM.

IS IT PRACTICAL? It seems to be. A motivated student could easily use interleaving without any instruction. Teachers could also use the technique in the classroom: After one kind of problem (or topic) is introduced, practice first focuses on that problem. Once the next kind of problem is introduced, it is mixed in with examples of earlier subjects. It may take a little more time than blocking practice, but such slowing most likely is worthwhile, reflecting cognitive processes that boost performance.

RATING: Moderate utility. Interleaved practice improves learning and retention of mathematical knowledge and boosts other cognitive skills. The literature on interleaved practice is small, however, and includes enough negative results to raise concern. It may be that the technique does not consistently work well, or perhaps it is not always used appropriately—topics for future research.

What We Have Learned

Why don't students use more effective study techniques? It seems they are not being taught the best strategies, perhaps because teachers themselves are not schooled in them. In our survey of six educational-psychology textbooks, only one technique—"keyword mnemonics"—was covered in every book. None offered much guidance on the use, effectiveness or limitations of different ways of studying.

A second problem may be that in the educational system, the emphasis is on teaching students critical-thinking skills and content. Less time is spent on teaching them how to learn. The result can be that students who do well in their early years, when learning is closely supervised, may struggle once they are expected to regulate their own learning in high school or college.

Some questions, such as the best age for students to start using a technique and how often they will need to be retrained or reminded, still require further research. But even now teachers can incorporate the most successful approaches into lesson plans so that students could adopt them on their own. For instance, when moving to a new section, a teacher can start by asking students to do a practice test that covers important ideas from the previous section and providing immediate feedback. Students can interleave new problems with related ones from preceding units. Teachers can harness distributed practice by reintroducing major concepts during the course of several classes. They can engage students in explanatory questioning by prompting them to consider how the information is new to them or why it might be true.

These learning techniques are no panacea. They benefit only those who are motivated and capable of using them. Nevertheless, we expect that students will make meaningful gains in classroom performance, on achievement tests and during their lifetime. M

(Further Reading)

- **Ten Benefits of Testing and Their Applications to Educational Practice.** H. L. Roediger III, A. L. Putnam and M. A. Smith in *Psychology of Learning and Motivation,* Vol. 55: *Cognition in Education.* Edited by Jose P. Mestre and Brian H. Ross. Academic Press, 2011.
- **Interleaving Helps Students Distinguish among Similar Concepts.** D. Rohrer in *Educational Psychology Review,* Vol. 24, No. 3, pages 355–367; September 2012.
- **Using Spacing to Enhance Diverse Forms of Learning: Review of Recent Research and Implications for Instruction.** S. K. Carpenter, N. J. Cepeda, D. Rohrer, S.H.K. Kang and H. Pashler, ibid., pages 369–378.
- **When Is Practice Testing Most Effective for Improving the Durability and Efficiency of Student Learning?** K. A. Rawson and J. Dunlosky, ibid., pages 419–435.

Grievance Procedure

Grievance Procedure for Classified Civil Service Employees Not Covered By a Bargaining Unit Agreement

Effective 12/1/79

A. Definition

A grievance is defined as a contention of misapplication or violation of the provisions of the State Higher Education Law, Higher Education Personnel Board rules, compensation plans, or written University or departmental personnel policies and procedures.

B. Classified Staff Grievance Committee

There shall be a standing University Classified Staff Grievance Committee consisting of four classified civil service employees, four administrative exempt employees, and four faculty members. The twelve members will be appointed by the President or designee for a two-year term after consideration of recommendations from the Office of Personnel & Benefits, the Association of Administrators, and the Faculty Senate. Members may be reappointed and serve any number of successive terms.

C. Hearing Committee

Each Hearing Committee shall have three members chosen from the Grievance Committee and shall choose its own chairman. The committee for two or more grievance cases ma y consist of the same members, but a committee shall not consider two cases concurrently unless the grievant is the same person in both cases or unless the grievance is in the nature of a class action involving two or more grievants with the same grievance.

D. Records

Hearings before the Hearing Committee will be tape recorded which will constitute the only record of the proceedings other than the final report of findings and recommendations. The tapes will be kept by the Director of Personnel & Benefits and will be available to the members of the Hearing Committee, the President or designee. the aggrieved employee, and to the immediate supervisor.

E. Evidence

Grievance hearings shall be informally conducted and without the restrictions of evidence which are appropriate in civil courts. Any relevant evidence shall be admitted, whether covered in the preliminary written statements or not. Hearsay evidence should be discouraged except for the purpose of establishing perspective for the subsequent introduction or explanation of other evidence. Substantial evidence of the validity of the grievance must submitted by the grievant, but this shall not prevent inquiry by the Hearing Committee into relevant matters whether or not they are raised by the parties concerned.

F. Hearing

Hearings before the Hearing Committee will be closed and will include only members of the Hearing Committee, their assistants including recorders, the grievant and his/her designated representative, the immediate supervisor and her/his designated representative, and any witnesses while testifying.

G. Grievances

Except as provided in written Higher Education Personnel Board rules and other written University policy, classified staff employees who have successfully completed their probationary service period and achieved permanent status may seek settlement of a grievance as defined using this procedure. The availability of this procedure does not preclude the adoption of other grievance procedures negotiated by organizations having exclusive recognition for an appropriate bargaining unit or by one adopted by the Higher Education Personnel Board under its-jurisdiction.

1.0

All grievances shall be heard during working hours when practicable and the aggrieved employee may at any of the four procedural steps be accompanied by a representative of his/her choosing who is an employee of Central Washington University and not admitted to the practice of law.

1.1

When grievances arise, the following steps shall be observed and each step shall be exhausted before resorting to the next. When a complaint is submitted, all personnel involved will exercise care to ensure that each step is accomplished within the time limit assigned each step. Should the originator or recipient of any written request or decision described in this procedure be absent from campus during the prescribed response time, the response time may be extended by the remaining duration of the absence or the absent party may designate an alternate to act in her/his stead.

- **1.11** Any employee having a grievance shall submit it in writing to his/her immediate supervisor as promptly as possible after its occurrence, but a grievance shall be invalid if not presented in writing within five(5) working days from the time the cause of the complaint became known to the employee concerned.
  Step 1 The immediate supervisor shall review the matter and make a decision in writing to the aggrieved employee within five(5) working days of receipt of such a written request. If the grievance is not settled satisfactorily, the employee shall have five(5) working days following receipt of the decision to submit the grievance in writing to the next senior level of supervision senior supervisor)
- **1.12 Step 2** The senior supervisor shall make a decision in writing to the aggrieved employee within five(5) working days of receipt of such a written request. If the grievance is not settled satisfactorily, the employee shall have five(5) working days following receipt of the decision to submit the grievance in writing to the Director of Personnel & Benefits.
- **1.13 Step 3** The Director of Personnel & Benefits shall, within seven(7) working days of receipt of such a written request, meet with the aggrieved employee, and/or her/his representative, and with the immediate supervisor in an effort to reach a satisfactory settlement of the grievance. A summation by the Director of Personnel & Benefits of the hearing held at Step 3 will be in writing and will be sent to the aggrieved employee, the immediate supervisor, and the senior supervisor within five(5) working days following the hearing. The summation will be made a part of this grievance file to be forwarded to the Hearing Committee, if formed.
- **1.14 Step 4** If the grievance is unsatisfactorily resolved by the Director of Personnel & Benefits as outlined in Step 3, the employee may request in writing, and within five(5) working days of receipt of the summation from the Director of Personnel & Benefits, that a Hearing Committee be formed as a final grievance step. The request for formation of the Hearing Committee shall be

directed to the Chairman of the Grievance Committee

The Hearing Committee shall be formed within five(5) working days of receipt of the employee's written request and shall include three persons not in the same office, department, or subdepartment as the aggrieved employee, selected by lot from among the members of the Grievance Committee. Unlimited challenges for cause may be submitted by either the aggrieved employee or the immediate supervisor. Such challenges will be ruled upon by the Grievance Committee as a whole. Also, the aggrieved employee and the immediate supervisor will each have one preemptory challenge.

Prior to hearing the grievance and as a first step, the Hearing Committee will meet in camera (privately) and make a determination whether on the face of the written grievance sufficient basis exists to proceed with the hearing. If the determination is in the negative, the grievance will be dismissed without further process. If the determination is that a reasonable basis exists for a hearing, the Hearing Committee will then arrange to hear the grievance.

The Hearing Committee will hear the grievance under procedures established by the chairman and after the hearing is concluded will render a written report of findings and recommendations to the President or designee with copies, including dissenting opinions, if any, of members of the Committee, to the aggrieved employee, the immediate supervisor, the senior supervisor, and the Director of Personnel & Benefits. The President or designee will make the final decision on the disposition of the grievance and will render a written report of the decision with copies to members of the Hearing Committee, the aggrieved employee, the immediate supervisor, the senior supervisor, and the Director of Personnel & Benefits. The hearing procedure from the point of formation of the Hearing Committee to the receipt by the parties involved of the President's or designee's written report of decision, shall be carried out within fifteen(15) working days.

Questions and Inquiries

Classified employees may consult with the Office of the Director of Personnel and Benefits concerning matters of classification, compensation, conditions of employment, interpretation of the civil service rules now in effect, or concerning other personnel matters and problems. Such questions are not to be construed as grievances and may be made without reference to the Grievance Procedure described above.

Source URL: https://www.cwu.edu/hr/grievance-procedure

Student Rights & Appeals

Academic Rights

As a student at Central Washington University, you have the right to:

- Petition for a leave of absence
- Receive appropriate advising resources
- Audit a course
- Appeal a grade
- Appeal academic suspension
- Withdraw within the first six weeks of the quarter
- Request a hardship withdrawal prior to the final exam week
- Know the grading policy used by an instructor at the outset of a course and have it applied consistently
- Take one course per quarter to be evaluated on a credit/no-credit basis
- Complete a course for which you receive an “I” within 12 months
- Credit by challenging
- Petition the appropriate department chair for course substitution
- Not take a test that is more than 20% of the course grade the week before finals
- Know of all assignments that will be due the last week of instruction
- Request that the posted final exam schedule be complied with
- Request that one final be moved if you are scheduled for more than two in one day
- Commencement participation
- Initiate a proposal for curriculum change

Due Process Rights

All Central Washington Students are guaranteed the right to due process. Students have protection through orderly procedures against arbitrary or capricious actions or decisions by University authorities. Due process is recognized as essential to the proper enforcement of University rules.

- Any individual can file a report to the Office of Student Rights & Responsibilities concerning a potential policy violation or concerning behaviors.
- Any student who may potentially be in violation of university policy shall receive written and electronic notification from the Office of Student Rights & Responsibilities that informs the student of the specific policies they may have been responsible for violating and the date of the alleged incident. The notification will have a specific time, date, and location of the student’s required Student Conduct Hearing with a University Hearing Officer to discuss the situation.
- The Student Conduct Hearing will allow the student the opportunity to review the Student Conduct Code, review the allegations, and provide an opportunity for the student to share his/her side of the incident.
- Based on the information gathered throughout the investigation and during the Student Conduct Hearing, the University Hearing Officer will determine whether the student is responsible or not responsible for violating the university policy and will assign educational sanctions consistent with the level of offense.
- The student who is accused of the potential policy violation will be notified of the outcome either personally, electronically, or in writing.
- Students have the right to appeal disciplinary action taken through a Conduct Review Hearing or a Student Conduct Council Hearing.

Appeals

As a student at Central Washington University, you have the right to appeal a course grade, assessed fine, academic suspension, or disciplinary action. No individual shall be penalized or retaliated against in any way by the university community for his or her participation in this complaint procedure.

- A course grade:
  - Students have protection from arbitrary, capricious, or discriminatory grading or evaluations. Students looking to appeal their course grade are encouraged to first attempt a resolution with the faculty member, then with the Department Chair, and if unable to resolve with the chair then meet with the Academic Dean. If these attempts fail to provide an outcome that the student finds acceptable, the student has the right to submit a written appeal to the Board of Academic Appeals to schedule a hearing and make a final determination on the course grade.
  - Academic Appeals Process
- Academic suspension
  - Students who have received an academic suspension for several quarters of failing academic performance can choose to submit a written appeal before the Academic Standing Committee to review the case and make a final determination on whether to uphold or overturn the academic suspension.
  - Academic Suspension Appeals (link - http://www.cwu.edu/student-success/instructions-how-submit-academic-susp...)
  - Appeals form (link - http://www.cwu.edu/student-success/academic-suspension-appeal-form)
- Disciplinary action
  - Disciplinary action imposed as a result of a University Conduct Hearing outcome may be appealed in writing to the Office of the Dean of Student Success in Bouillon 204. Students seeking to appeal must submit a completed Student Conduct Appeal form to Bouillon 204 within the applicable time period to be considered.
    - Students seeking to appeal disciplinary action imposing a conduct suspension or conduct dismissal must submit a completed appeal form within 20 days of the outcome.
    - Students seeking to appeal any other disciplinary action must submit a completed appeal form within 10 days of the outcome.
  - If a student is appealing a suspension or conduct dismissal, the student is afford the regular rights and responsibilities of all other students pending the outcome of the Student Conduct Council findings and is allowed to register and attending classes.
- University fine or fee
  - Every student has the right to appeal an assessment by the university of a fee, fine, charge, debt, or other financial obligation by filing a written petition with the appropriate dean or non-academic area director, stating the student's reasons for challenging the validity of the assessed obligation. The written petition must be filed within ten days after the notice of assessment is sent to the student. The dean, director or their designee, shall review the university's decision to assess the fee, fine, charge, debt, or other financial obligation in light of the student's petition appealing the assessment and shall render a decision that shall be final.
  - Appeals regarding housing contracts, fees, or charges may be sent to the Director of University Housing and New Student Programs in Button Hall.

Source URL: https://www.cwu.edu/student-rights/student-rights-appeals