

## OEC 5<sup>th</sup> Edition Updates/Changes

<b>Chapter 1</b>	
<b>Page number</b>	<b>Updates/Changes</b>
Pgs 4-6	Expanded history of NSP, taken from Patroller's manual
Pg 12	CPR Changes – Performed in front of CPR instructor (not just qualified person)
Pg 18	Assumption of Risk- Legal principle stating that there are inherent risks involved in snow sports activities and protects patrollers while performing their duties from some liability. This principle does not protect patrollers or resorts from liability involving transportation (i.e. chair lifts, toboggans, area vehicles)
Pg 19	Documentation- Concise, thorough, legible incident forms are needed for legal reasons. It is important to include involved party/witness statements.
Pg 21	Joint Statement of Understanding – Understanding between NSP and NSAA that patrollers do not work of the NSP but for the resort that they are patrolling for. Important for patrollers to understand their role as a patroller.
Pg 24	Judgment- OEC technician needs to show proper judgment in what skills are needed in a particular situation.
Pg 25	EMS system Regulations Clarification – Understanding of your state laws in respect to the level of care the OEC technician can provide, including area management protocols.
Pg 25	Privacy Laws- HIPAA laws are enacted to protect the privacy of an individual's medical information. Even though volunteer patrols are exempt from HIPAA laws, OEC technicians should always be conscious of the privacy of injured skiers and should not use their names or provide any information that could identify them, unless absolutely necessary.
<b>Chapter 2</b>	
Whole Chapter	Explanation of EMS system is thoroughly done. The importance of a team approach is emphasized as is commonality, having common goals, using common language and following practices and procedures. How do you interact with the local system?
<b>Chapter 3</b>	
Pg 82	Needle handling- Correct procedure discussed for handling and disposing of needles.

<b>Chapter 4</b>	
Pg 99	NIMS – National Incident Management system explained (Multi-agency coordination system a new standardized framework for responding to, and managing, emergencies or situations involving multiple jurisdictions. NIMS is a nation “all hazard” model, federally mandated for use by all government and civilian organizations which extend to ski patrols and OEC technicians. ICS (incident Command Systems) is part of NIMS
Pg 115	ID-ME- New name for Triage System, acronyms for 4 specific triage categories. Immediate (RED) Delayed (Yellow) Minimal (Green) Expectant (Black)
<b>Chapter 5</b>	
Pgs 144 Pgs 161-162 (skills & Guide)	New Bridge Lift Acronym BEAN ( Do Not use this lifting technique if pt. has suspected spinal injury)
Pg 143-144 Pgs 160-163 (Skills & Guide)	New Direct Ground Lift Acronym BEAM
Pgs 156-157	Basic Helicopter Safety – How to act around and load a helicopter, setting up an LZ (landing zone) etc.
Pg 154	Air Transportation Protocols- refer to area management.
Pg 158	Sled CPR Method- discussed in detail how to perform CPR on a sled
<b>Chapter 6</b>	
Pg 146	Semi-Fowler and High Fowler Position added
Pg 176	Circulatory System, now the Cardiovascular System
Pgs 171-172	Body Cavities defined
Pg 195	Skin system, now Integumentary System
Pg 199	Musculoskeletal System, now the Muscular System
Pg 201	Genital System, now the Reproductive System
Pg 206	Lymphatic System, new material
<b>Chapter 7</b>	
Pgs 217-226	Return to Primary Assessment
Pgs 226-235	Return to Secondary Assessment

Pgs 222	AAOx4- new Terminology
Pgs 222-223	New skill in assessment chapter- Glasgow
Pg 224	New Terminology- Decorticate and Decerebrate posturing
Pg 232	Use of stethoscopes for breathing sounds (Fig 7-12) -Described in detail in Chapter 13, Respiratory Emergencies.
Pg 235	New term in evaluation – Tandem Gait
Pgs 239-241	New BP procedures
Pgs 242-244	New test – Orthostatic BP and new discussions on causes of Orthostatic BP
Pg 245	New concern- Cultural Diversity
	BSI now covered under Standard Precautions in Chapter 3, Pgs 76-77 and not introduced until Physical exam.
<b>Chapter 8</b>	
Pgs 268-279	New terminology and acronyms – SOAP, CHEATED, FACTUAL-OEC, SAILER HIPAA
Pgs 272-273	NSAA Forms
Pgs 284-286	New material on medical documentation – Refusal of care, Communication methods
<b>Chapter 9</b>	
Pgs 297-298	Gravity, finger sweep, cross-fingers technique
Pg 299	Advise pre-oxygenate patient before suctioning
Pg 300	New name (“Haines”) for “recovery position”, and more clearly defined procedure for positioning patient in this position, several synonyms eliminated (e.g., NATO, semi-prone, etc.)
Pgs 302-304	If patient gags with OPA in place, remove, do not attempt reinsertion.
Pg 303	Use of OPA as bite block suggested.
Pgs 304-305	Discusses use in text, of Face Shield ventilation.
Pg 306	Local protocol for O2 delivery- legality
Pgs 311-312	Improved, more complete Y detailed instructions for application of nasal cannula
Pg 312	Reset flow rate for oxygen with nonrebreather mask by observing collapse of bag with inspiration

Pg 315	Pulse Oximetry – New information and recommendation for indication of supplemental O <sub>2</sub> based on pulse oximetry readings.
Pg 322	Skill sheet- Suction – Advises Pre-oxygenate patient before suction, not specific method advised to open mouth, specifies suction duration FOR ADULT only (nothing re: pediatrics), nothing RE: measuring catheter or guidance Re: moving catheter while suctioning, added “open mouth” as CPI
Pg 323	Skill sheet – NPA- much more specific and detailed instructions, added some new CPI’s,
Pg 324	Skill sheet – OPA Specifies cross-fingers to open the mouth more detailed instructions for insertion and adds CPI’s
Not in Chapter 9 OEC 5 <sup>th</sup> edition	Skill sheets for oxygen deliver, bag valve mask, and pocket mask use.
<b>Chapter 10</b>	
Pg 336-343	Four types of Shock Hypovolemic, Cardiogenic, Distributive, and Obstructive – very different terminology and categorization of causes of shock between editions.
Pg 335	New vocabulary - Homeostasis (see chapter 6 Pg 206 for more detailed definition)
Pg 329 Also see pg 962	New vocabulary – Hypoperfusion (One of the most serious threats to life is the condition known as shock, or hyperperfusion)
Pg 332	New terminology – cardiac output
Pg 332	New terminology – stroke volume
Pg 334	New information – Hematocrit
Pg 344-345	Entire new section specifically addresses factors that exacerbate evolution of shock, including age, illness, etc. and MEDS/Drugs
Pg 347	Detailed protocols for respiratory support and supplemental oxygen delivery in treating shock.
Pg 347-348	Management of Shock- Focuses on general principles in this chapter and defers discussion of details of shock management for specific types of shock to later chapters.
<b>Chapter 11</b>	
Pgs 363-365	New terminology on classification of seizures
Pgs 359-381	The entire format of the OEC 5 <sup>th</sup> ed Chapter 11 on Altered Mental Status has been changed from the OEC 4 <sup>th</sup> on Neurologic Emergencies. OEC 5 <sup>th</sup> Chapter 11 is organized around AEIOU-TIPS.

<b>Chapter 12</b>	
Pg 388	Transdermal is absorption through the skin
Pg 389	New discussion- Bodily distribution and elimination related to medication usage in body. Blood-brain barrier new.
Pg 391	New: acid/base discussion, sedative hypnotics now it is anti-anxiety and sedatives section on antipsychotics and antidepressants section on designer drug/club drugs i.e. Ecstasy, GHB, Special K
Pg 393	New aspirin section, overdose information
Pg 394	New iron overdose section and section on methane poisoning.
Pg 401	Poison Control contact number, and CHEMTREC contact number.
<b>Chapter 13</b>	
Pg 412	Child respiration rates 15-20, Infant 20-25
Pg 420	New - Aminophylline (see Note for list)
Pgs 422-423	Stethoscope and Pulse Oximeter.
Pg 424	Transport Respiratory IP head up hill. Much more specific description
Skill 13-1 pg 426	Use of stethoscope
Skill 13-2 Pg 427	Demo of use of inhaler
<b>Chapter 14</b>	
Pg 436	OEC 5 Defines Antigen OEC 4 <sup>th</sup> defined allergen
Pg 437	Defines Hypersensitivity
Pgs 439-440	Defines allergic reactions - Mild, Moderate, and Severe
Pgs 440-442	Discusses prevention
Pgs 444-445	Discusses sign and symptoms of Mild, Moderate, and server reactions
Pg 446-447	ABCD's are referenced
Pg 447	Remove tight fitting articles form around neck and extremities.

Pgs 447-449	Addresses EPI dosing
Pgs 450-452	More detail for EPI administration Skills 14-1, 14-2, 14-3
<b>Chapter 15</b>	
Pgs 468-470	<u>New Terms and Topics</u> New Term: Sudden Cardiac Arrest (SCA) New Term: Return of Spontaneous Circulation (ROSC) New Term: Cardiovascular Disease (CVD) New Topic: Hypertension New Topic: Thromboembolism and Pulmonary Embolism New Topic: Abdominal Aortic Aneurysm (AAA) and Thoracic Aortic Aneurysm New Topic: Heart Valves
Pgs 476-481	OEC 5 <sup>th</sup> emphasizes ABCD, after opening the airway simultaneously check for breathing and pulse, if no pulse is detected after 10 seconds, then start chest compressions, perform 30 chest compressions at a rate of 100 per minute alternating with 2 breaths.
Pgs 481-484	OEC 5 <sup>th</sup> follows the new BLS AED defibrillation guidelines which call for application of the AED as soon as possible, then deliver shock if indicated, then start chest compressions immediately after one shock and continue for 5 cycles or 2 minutes until rechecking pulse and evaluating if further shocks with the AED are recommended.
Pgs 479-485	OEC 5 <sup>th</sup> describes five links in the CPR change <ol style="list-style-type: none"> <li>1. Immediate recognition of cardiac arrest and activation of emergency response system</li> <li>2. Early CPR that emphasizes chest compressions</li> <li>3. Rapid defibrillation if indicated</li> <li>4. Early and effective advanced life support</li> <li>5. Integrated post-cardiac arrest care</li> </ol>
Pgs 485-487	New emphasis on assisting patient with taking the cardiac medications Nitroglycerin and Aspirin, including new information relating to indications and side effects of these drugs.
<b>Chapter 16</b>	
Pgs 502-504	OEC 5 <sup>th</sup> covers the following: Pyelonephritis Nephrolithiasis Bowel obstruction and perforated bowel Hematochezia Abdominal Aortic Aneurysm (AAA)
Pg 509	Palpating above Bladder

<b>Chapter 17</b>	
Pg 517	New Terms: Kinematics
Pg 521	New Term: Pathophysiology
Pg 526	New Term: Index of Suspicion
Pgs 519-520	Stopping distance and force on different type of tissue, i.e. hollow (air) dense, and solid (water) dense.
Pg 523	Blast Injury
Pgs 525-526	Three phases of Injury <ol style="list-style-type: none"> <li>1. The Pre-injury phases</li> <li>2. The injury phase</li> <li>3. The post-injury phases</li> </ol>
Pgs 526-528	Trauma Centers and levels are described in detail.
<b>Chapter 18</b>	
Pgs 540-542	Physiology of Bleeding and Clots. Blood thinning medication such as Aspirin, Coumadin, Pradaxa, or Plavix
Pgs 542-549	New material for providing wound care
Pgs 543-545	Subungual Hematoma- special type of hematoma beneath a nail bed
Pgs 548-549	New Topic High Pressure Injection- Mechanical Tattooing
Pgs 552-564	Management of Bleeding -topic different in principal and practice
Pgs 553-555	Tourniquet
Pgs 561-562	Hemostatic Dressing
<b>Chapter 19</b>	
Chapter 19	Whole Chapter on Burns
Pgs 581-584	Expands on different types of burns- Thermal, chemical, electric, & radiation
Pg 582	Inhalation injuries
Pgs 582-583	Electrical – DC, Amp and Volt
Pg 585-587	Includes the category of 4 <sup>th</sup> degree burns under full thickness burns.
Pg 589	CO Poisoning

Pg 588	More extensive discussion on airway management and specifically describes indications for early ALS intubation
Pg 589	Includes a discussion of Carbon Monoxide poisoning associated with burns.
Pgs 592-593	Recommends complete immersion in water of small area burns and then applying a dry sterile dressing. A wet cool dressing is only used for 5% TBSA.
Pg 592	No creams, etc on burns, and C-spine precautions in burn pts.
Pg 593	Do not break any blisters
Pg 585-587	Four categories of burns: Thermal, Chemical, Electrical, and Radiation
Pg 595	Criteria for sending patient to burn center
<b>Chapter 20</b>	
Pg 630	Consider moving pt indoor before removing footwear
Pg 640	General principles of splinting: Key principles and fractures of long bone fractures are different: Traction and Tension
Pgs 644-646	Addresses the Tension vs. Traction Advise the pounds are only a guide vs. rule/Patient comfort as a time measure.
Pg 648	NOTE: Wilderness Rescue Tip: bone end protruding through skin to a higher level of care for more than 8 hours; attempt to place the bone back in the body.
Pg 652	Figure eight splint for clavicle fracture Management of a posterior sternoclavicular dislocation with vascular or respiratory threat of life
Pg 655	Only try to realign deformed elbow if physician is more than <u>2 hours</u> away
Pg 660	Tourniquet is indicated only for <i>severe</i> external bleeding that cannot be controlled by direct pressure and is not indicated for a closed femur fracture.
Pg 663	Distal Femur Fracture: single attempt to realign if definitive care is more than 2 hours away
Pg 665	Recommends one attempt to axially align the knee joint if there are not distal pulses, regardless of the transport time to hospital
Pg 666	Replace quick splint with cardboard splint.
Pg 668	More extensive discussion of management of a floating knee
Pg 668-670	Ankle- Recommends single axial pull if CMS is compromised no matter if definitive care is immediately available or not. No time constraints.
Pg 670	Boot Removal: Leave boot on in outdoor environment

Pg 678	OEC Skill 20-3 Reducing a Posterior Sternoclavicular (C/C injury)
Pg 688	Skill Guide- Posterior Scapula Clavicle Dislocation Reduction
Pg 698-699	ER visits/sports injuries
Pg 699	Long term deficits from TBI Cost and indirect costs of TBI
<b>Chapter 21</b>	
Pg 700	Vocabulary- Neuron
Pgs 702-703	Added to Common Mechanisms of injury list: Electrical injury, including lightning strike
Pgs 703-704	New Material Coup-Countrecoup Injury
Pgs 704-705 Pg 710	Diffuse Axonal Injury Diffuse Axonal Injury defined.
NOTES-Pg 703 NOTES- Pg 710, 724	Geriatric/Pediatric Considerations Pediatric Considerations
Pg 708	New Term: Recurrent traumatic brain injury, as well as Traumatic Brain Injury
Pg 708	New Term: Post concussive Syndrome
709-717	Defines concussion mild, moderate, and severe
Pg 710	New Term: Lucid period
Pg 711	MOI in Spine
Pg 711	Jefferson Fracture, and Hangman's Fracture
Pg 711	Atlas-axis injury and injuries form C1-C5
Pg 717	Halo test and Bull's eye
NOTE-Pg 725	Removing a Player's shoulder Pads
Pg 725, 756,757	Vocabulary- Patent
Pg 712	New term: Neural Ischemia
<b>Chapter 22</b>	
Pg 745	New Term Anisocoria

Pg 749	Epitaxis is defined
Pg 751	Snow blindness
Pg 754-756	Eye assessment
Pg 755	Prosthetic eyes
Pg 755-756	Assessment of ear- look in the ear for "gray/green fluid" an indication of an ear infection
Pg 757	Management of facial (nose, tooth) and Hank's solution
Pg 761	MSDS sheet is mentioned as part of the information gathering on chemical exposure. This is a record of all toxic chemicals in the workplace.
Pg 762	Does not address removal of contacts on unresponsive patient
<b>Chapter 23</b>	
NOTE Pg 779	New terms: Pulsus Paradoxus
Pg 780	New Term: Commotio Cordis
Pg 783	LAP: L – Look A – Auscultate P – Palpate
<b>Chapter 24</b>	
Pg 798-801	More specifics about types of abdominal/pelvis injuries like spleen, pancreas, vascular, etc.
Pg 800-801	More about mechanism of injury of pelvis, hip and lower urinary injures, and Abdominal/pelvis assessment
Pg 801	Saddle injuries
Pg 802-803	Genital injuries should only be examined with a second assistant the same gender of patient
Pg 802-803	Kehr's sign- Spleen/liver pain with ipsilateral shoulder
Pg 806	MOI of suspect fractured pelvis- must perform full spinal immobilization
Pg 805-806	Managing pelvic trauma with a pelvic binder. Shock in managing of abdominal/pelvic trauma and states that patients should not be given anything by mouth.

## Chapter 25

Pg 816-817	Four mechanisms of heat loss are conduction, convection, evaporation, and radiation
Pg 820-821	New Term: Afterdrop
Pg 819-821	Signs and symptoms of Hypothermia are more defined Classification – Stages are Mild, Moderate and Severe Types of Hypothermia- changed to Primary and Secondary
Pg 818-825  Pg 825 Table25-1	Frostnip- Superficial Frostbite Partial thickness Frostbite- full thickness Signs and Symptoms of Frostnip and frostbite
Pg 828	Rapid re-warming of frostbitten area 102-104 degrees Once area is warm, <i>aloe vera</i> ointment and dry dressing may be applied Serve Pain requires ALS services
Pg 829	Two methods of re-warming – Active and Passive

## Chapter 26

Pg 840	Heat Index
Pg 843	Heat – related Syncope
Pgs 843	Addition of stretching to treat heat cramps
Pg 845	Addition of Heat Related Illness Prevention
Pg 846-847	Use of Sunscreen greater than SPF 30
Pg 847	Use of SPF 15 on pediatric patients in limited areas of the body if there is not adequate shade or clothing available.
Pg 848-849	Lightning expanded
Pg 850-852	Assessment of Heat Related Illnessed
Pg 852	¼ to ½ t. of table salt in a quart of cool water for heat exhaustion pt., same for heat cramps.
Pg 853	Added full body immersion on cold water under medical supervision and continued core body temperature checking. Taper off treatment when core body temperature reaches 100 F.
Pg 854 Table 26-2	Differentiating Between Heat Exhaustion and Heat Stroke

<b>Chapter 27</b>	
Pg 862	New Term defined in relation to this section – Necrosis
Pg 863-868	New Plants included some removed such as Mistletoe and Tree Tobacco Plant descriptions and their toxic effect have been given
Pg 864	New Term: Bullae
Pg 870-871	New section on Mushrooms and Morels
Pg 879	New – Alligator and Crocodiles
Pgs 880-881	Additional Marine animals are described
Pgs 882-885	Expanded terrestrial mammals section
<b>Chapter 28</b>	
Pgs 906-907	New Terms: Chilblains is defined Khumbu Cough defined Radial Keratotomy Blindness Solar Keratitis Peripheral Edema
Pg 913	New Term: Gamow bag
Pg 913	Khumbu Cough Treatment
<b>Chapter 29</b>	
Pg 922	Wet and dry drowning defined Mammalian Diving reflex defined
NOTE Pg 922	Description of atmospheres
Pg 923	Description of Boyles Law, Henry's Law , Dalton's Law and Partial pressure
Pg 924	Common Water Emergencies
Pgs 926-927	Water conditions, water temperature role in morbidity, water salinity, tonicity and Barotrauma.
Pgs 927-928	Decompression Sickness (DCS), DCS Subcategories, Arterial Gas Embolism (AGE), squeeze and reverse squeeze, and Divers Alert Network (DAN)
Pg 928	Table 29-2 Signs and Symptoms of Decompression Sickness

Pg 929	Nitrogen Narcosis, swimmers ear, and breath holding
Pg 930	Overview of traumas
Pg 930	Injuries by aquatic animals
Pg 931	Aggravation of existing medical conditions, preventing water emergencies
NOTE Pg 933	Water-Related rescue Methods
Pg 933-934	Patient assessment on water emergency
Pg 934	AGE and DCS signs and symptoms
Pg 934-936	Patient Management of water related injuries
Pg 936	Cold water submersion, unresponsive
<b>Chapter 30</b>	
Pg 943-944	Childs larynx , brain, and body surface, thinner skin, less muscle mass, body fat greater risk for heat loss, faster absorption of toxins, morbidity form burns, and multi organ injuries
Pg 945	Higher metabolism fewer energy reserves
Pg 947	Surfactant- without it newborn survival is decreased Verbal skills begin at one year, 18-20 speaks up to 20 words
Pg 947-948	Preschool child gross motor skills continue to develop, social development
Pg 948	Age 5 generally earliest age to begin skiing/snowboarding Expanded section on development
Pg 948	Table 30-1 Growth and Development
Pg 945, 958	Greenstick fx
Pg 946--975	New Objectives # 2 ,3, 4, 5, 6, 7, 8,, 9, 10, and 12
Pg 949-950	Adolescence expanded growth and development- hormones
Pg 950	Small airway, immature immune systems, respiratory emergencies are common
Pg 950-952	Expanded info croup , tonsillitis, FBAO, Bronchiolitis, pneumonia, asthma
Pg 952	Expanded Respiratory failure and cardiac arrest info
Pg 953	Expanded info Gastroenteritis, appendicitis, nausea vomiting, diarrhea
Pg 954	Status Epilepticus and Meningitis

Pgs 954-955	More information about substances
Pg 957	SIDS and Leading cause of death from accidental trauma vehicle crashes, followed by firearms and drowning, blunt trauma leading MOI
Pg 958	Head and Neck injuries, and TBI in children Expanded info on head injuries, chest, and abdominal injuries. Comotio Cordis, Pelvic injuries Ped Trauma for any given MOI, children are more likely than adults to have more severe injuries and injuries to more than one body system
Pg 959	Burns and Electrocutions
Pg 960-961	Reporting suspected child abuse
Pg 961-962	Shock
Pgs 963-965	Expanded Assessment process Pediatric Triangle
Pg 964	Objective 11 –access using pediatric triangle
Pg 964-965	Child's Appearance, Respiratory Effort, and Circulation
Pg 968	Expanded info on Honesty, Trust, and Communication
Pg 969-975	Expanded Physical exam
Pg 971	Normal Values of Pediatric Vital Signs
Pg 975-977	Expanded Management
<b>Chapter 31</b>	
Whole Chapter	New Chapter
Pg 989	New Terms, Osteoporosis, Scoliosis, Kyphosis, and Lordosis
Pg 998	Elder abused discussed
<b>Chapter 32</b>	
Pg 1013	New info -Autonomic dysfunction
Pgs 1011, 1029, 1016, and 1028	Expanded Objectives 1, 4, 6, 7, and 8
Pg 1019	Expanded list with increased detail of Adaptive Athlete Equipment
NOTE Pg 1020	Listing of 2010 Paralympic Games Adaptive Sports
Pgs 1020-1022	Expanded - General equipment; prosthetics/amputations, crutches

Pgs 10220-1025	Intellectual disabilities, ski bra, and sliding board
Pg 1023	Tether
Pgs 1025-1026	Warm weather sports
Pg 1029	Expanded of Assessment Intellectual and Physical Disabilities
Pg 1032	Getting a disabled athlete out of specialized equipment Cost of Adaptive equipment Service animals
<b>Chapter 33</b>	
Pg 1042	Medical Exposures
Pg 1043	Chemical exposures-how drugs can mimic behavioral emergency Neurosis, psychosis (behavioral conditions)
Pg 1044-1045	Hallucinations, anxiety, Paranoia, Schizophrenia, Bipolar Disorder
Pg 1046	Abuse
Pg 1048	Livor Mortis, Rigor Mortis, Dependant Lividity, and DNR
Pg 1058	Restraints
Pg 1059	Positional Asphyxia
<b>Chapter 34</b>	
Pg 1071-1072	Gestation, gestational period
Pg 1073	Dysmenorrhea
Pg 1074	Cystitis, Ovarian Cysts, and PID Ectopic Pregnancy
Pg 1075	Vaginal bleeding, normal and abnormal
Pg 1075-1076	Sexual assault
Pg 1077	Expanded- Pregnancy, normal and abnormal
Pgs 1077-1078	Premature Delivery
Pg 1080	Breech presentation/deliveries
Pg 1086	States infants with a pulse rate lower than 60 bpm or pulse rate remaining between 60 and 100 bpm, despite adequate vent, should be given chest compressions.

Pg 1088-1089	Expanded- Trauma During Pregnancy
Pg 1089-1090	Expanded- First steps in treating a pregnant pt. and Assessment
<b>Chapter 3</b>	
Whole chapter	All new info