Dementia is one condition with many causes; the word means to be ‘without a mind’. As a medical term, dementia refers to the loss of the abilities to remember, process and apply information that makes daily existence possible. There are many sources of dementia, including chronic alcoholism and infection; however, this article will focus on the most common and familiar type, Alzheimer’s Disease (AD).

AD is a frightening prospect for most people. Unfortunately, there is little to prevent the onset of AD because the strongest risk factor for its development is simply advancing age\(^{(1)}\). Diet, exercise, drugs or doing puzzles cannot prevent it, nor is there a drug that can cure it. While AD is mainly a disease of people older than 75, it also occurs much earlier. The Alzheimer’s Association estimates there are 500,000 Americans under 65 with dementia of all causes\(^{(2)}\).

Causes and Symptoms

Alzheimer’s disease results from unwanted proteins and chemicals that accumulate inside brain tissue interfering with nerve connections and destroying neurons. The destructive changes generally begin in the hippocampus of the brain where new memories are first formed. From there they spread through the brain areas that store words and language, time and place, recognition and naming of normal objects and visual images, judgment and personality, and the ability to solve problems. The symptoms of AD are not exactly the same for everyone who has it; as brain destruction progresses, the victim loses the abilities that are managed in each affected area.

(continued on pg.6)
Several cases of documented Health Insurance Portability and Accountability Act (HIPAA) violations on social networking sites such as Facebook, MySpace, YouTube, Twitter, etc. have been in the news recently.

Does this mean that all social networking sites should be banned from hospitals and EMS networks? Actually, the opposite is true. These various media outlets need to be embraced and explored as a way to communicate with the patient communities. Safeguards and policies should be established to protect privacy and protected healthcare information.

Many hospitals and healthcare networks have established Facebook pages, blogs and Twitter accounts which are being used as PR tools. Social media is also being utilized to connect with consumers to provide important health care information which enables the consumer to make more informed medical decisions. Physicians have used Twitter to broadcast surgical procedures directly from the operating room, providing an opportunity to share new or unique procedures in real time. Twitter is also being used to keep families informed of the progress and condition of the patient during surgical procedures. Twitter allows the surgical team to provide frequent updates to families and the medical unit expecting the patient without having to leave the operating room.

During the aftermath of recent natural disasters, including Hurricane Katrina and the Haitian Earthquake, the use of social media allowed for communication between international rescue workers and those who were in the affected areas prior to the restoration of traditional phone service. Text messages and Tweets provided a means of coordinating relief efforts as well as informing the world about the conditions being experienced. During the Mumbai terrorist attacks, Twitter delivered eyewitness accounts to the world.

The benefits of social media are many; however, these networks raise issues which require careful consideration regarding confidentiality and professionalism. Even an off-hand remark about an unnamed patient may breach privacy and violate HIPAA when made by a healthcare professional.

Examples of some recent breaches:

A nurse in a doctor’s office made off-hand comments regarding patients seen in the office on her MySpace page. The patient recognized the nurse and stated that she was able to identify herself and a friend, who was also a patient of the practice, as the subjects of one of the comments. The patient filed a complaint with the Federal Government, Office of Civil Rights at Health and Human Services. The nurse was fired from her job.

Five hospital employees at an Oceanside hospital have been terminated and a sixth was disciplined for posting personal discussions regarding hospital patients on Facebook. In Wisconsin, two nurses were fired for allegedly taking a cell phone photo of a patient’s x-ray and posting one on Facebook. In Long Beach, four staff were fired and three were disciplined for taking cell phone photos of a dying man and posting them on Facebook. A Staten Island EMT lost his job after posting photos of a murder victim on Facebook.

While most hospital and emergency responders can be trusted not to post patient photos, victim photos or other protected information, it is happening often enough to reflect poorly on the healthcare community.

It is important for hospital workers and emergency responders to always remember that peoples’ lives are entrusted to them every day and they need to abide by HIPAA laws even when they are not on duty. This is a responsibility that involves patient advocacy and requires a professional, trustworthy and patient-centered approach to providing care and services. Simply omitting a name does not guarantee anonymity of the patient or healthcare provider.

Social media and social networking is still a grey area. Posting ANY patient information or taking photographs should only be done with patient consent or as part of the documentation necessary for the patient’s medical record. Health care providers and emergency responders need to take personal responsibility to ensure compliance with patient confidentiality and professional ethics in all settings.
Imagine this: you are working on an assessment unit when your engine is called out for a “man down”. You arrive on scene; hook up the paddles and fire. Nothing happens. The defibrillator batteries are hastily replaced and the paddles are again charged and fired. Again, nothing; the second batteries are no fresher than the first. When a working defibrillator arrives on an ambulance six minutes later it’s too late. Your 49 year old patient, a co-worker’s father, is dead.

Unfortunately, this is no imaginary scenario. Although the involved city paid $3.2 million to the family of the deceased, there is no way to replace a husband and father or restore a paramedic’s confidence in his colleagues. Simple things, such as new batteries and a daily defibrillator check, may have prevented this sad outcome but the simple things were not done. One of the easiest ways to prevent errors is to create a checklist, which is the premise of The Checklist Manifesto by Dr. Atul Gawande. After years of studying how people perform complex processes during stressful or unpredictable situations, Dr. Gawande has determined that a simple checklist can produce surprisingly good results. His group developed a basic checklist for surgical teams and watched surgical deaths and complications plummet after its implementation. He acknowledges using checklists can be a hard sell, “it somehow feels beneath us to use a checklist, an embarrassment. It runs counter to deeply held beliefs about how the truly great among us…handle situations of high stakes and complexity.”

Those situations pretty much define EMS. We like to believe we are well trained, we know how to do things properly, we are highly skilled and we work hard. While all of the above are true, it is also true that we are human. The sheer amount of what we know may be more than we can do correctly, in the right order, 100% of the time when the stress level is intense.

A good example of how a checklist can be used effectively in EMS is the daily ALS unit inspection (Reference No. 703, Advanced Life Support (ALS) Inventory). As we know from the real-life situation above, having functional equipment on scene can be the difference between life and death. Yet in 2009, the annual ALS unit inspections conducted by the EMS Agency indicated nearly one-fourth of Los Angeles County provider agencies were missing airways, laryngoscope blades, suction equipment and other significant patient care items. Five per cent were unable to demonstrate how to test the defibrillator. In some cases the ALS unit passed inspection only after items were immediately re-stocked from the store room. (All fallouts were remedied prior to the units being placed back into service). If knowing the date, time, and the unit to be inspected results in a 25% fallout in ALS unit inventory compliance, consider the implications for real calls to real patients, around the clock, 365 days a year.

Can the average paramedic name the 20 mandatory medications on the ALS unit? How about each of the 60 required supplies or the 9 pieces of approved optional equipment? Of course not, nor would that be appropriate. As a paramedic, the real value of your EMS training and experience lies in its application to patient care, not in reciting a list of supplies. Put the simple things on a checklist so you can rely on a working defibrillator; the right medications; a complete airway kit. You are now free to concentrate on using what you have learned to care for the patient in front of you.

Using a checklist reduces our error-prone human behavior and helps us better use what we know. When paired with accountability and the expectation that everyone will comply, the checklist can become a powerful tool in our EMS arsenal. As John Becknell, the founding publisher of Best Practices says, “checklists create a pause... for taking stock... they continually bring a certain gravitas or sobriety to what may become routine or ordinary, they remind us that life-and-death consequences may be only one forgotten moment (or monitor) away.”

This article was inspired by John Becknell’s article “In Praise of the Lowly Checklist” from Best Practices, Vol. 15 No. 6, June 2010. The EMS Agency extends its thanks for the inspiration.
TACTICAL MEDICINE

By Christine Bender

It’s February 28, 1997: bank robbers casually walk up a Hollywood street, firing military-grade weapons left and right at police officers. December 5, 2007: a young gunman in an Omaha shopping mall has a rifle to his shoulder, bullets striking down nine customers and store employees. April 20, 1998: two teenage shooters roam a high school firing on teachers and fellow students as a nation watches, transfixed, on television.

Police were on-scene. EMS was available nearby. But in each of these events, it was too unsafe for unarmed and untrained EMS personnel to be in the “hot zone” caring for victims as Special Weapons and Tactics (SWAT) officers worked to neutralize the threat. These are no longer rare events: Anyone watching television news can attest to the numerous violent crimes that constitute the evening news: robberies; barricaded suspects; hostage situations; shootings in neighborhoods, workplaces, college campuses and even a bizarre shoot-out on a military base. And with that grim new reality comes a growing trend in law enforcement to include qualified medical personnel in the tactical unit itself. More and more, the law enforcement community is acknowledging that EMS is needed inside and around the hot zone, not staged a mile away.

Tactical Medicine Programs

Fire, police and EMS often respond to the same scene; however in large critical incidents such as those above, fire and paramedic personnel are staged away from the scene to ensure personal safety. Not only is it difficult for EMS to access patients in a timely manner, they themselves are vulnerable because their uniforms are similar to law enforcement and they could easily be targeted as police. In addition, some providers may not have direct communication with the incident command post which removes them even further from critical information about the event. On the law enforcement side, the inherent confusion and stress of such tense situations may contribute to confusion about the priorities of medical care or potential exposure to disease.

For these reasons, Tactical Emergency Medicine Support (TEMS) teams were developed to provide medical services for law enforcement special operations. Both tactically and medically trained, these special team members are there to help a tactical team accomplish its mission. A TEMS team ensures that the injured are given the best possible on-scene medical treatment and then transferred to the appropriate medical facility in a timely manner.

Team Composition

A TEMS team can be made up of physicians, Mobile Intensive Care Nurses (MICNs), paramedics or EMTs in any combination. Regardless of the team structure, the key is for each member to work within their authorized scope of practice. All TEMS personnel must have tactical medical training as defined by the Peace Officer Standards and Training (POST) guidelines. (The California Commission on Peace Officer Standards and Training develops training standards and approves the curriculum for basic police officer training programs in California.) Ideally, the team includes a medical director who acts as a planning resource and provides medical direction, medical oversight, and a quality improvement program.

Tactical Medicine Training

How are tactical medical personnel trained? The California Emergency Medical Services Authority (EMSA), in conjunction with POST, has released a guideline manual titled “Tactical Medicine Operational Programs and Standardized Training Recommendations” that addresses the critical legal and practical issues of the tactical medicine component of SWAT operations. These guidelines serve as the minimum standards for tactical medicine training. The initial 80-hour course includes didactic instruction, skills, tactical weapons instruction, simulated tactical medicine scenario practice, scenario-based reality training, competency evaluation and testing.

In Los Angeles County, the only approved operational SWAT/Paramedic configuration is the Emergency Services Detail of the Los Angeles County Sheriff’s Department. Since POST recommends the local EMS agency develop policies and procedures for medical support during tactical operations, EMS Agency staff, Sheriff’s Department representatives, team members from other organizations, and interested parties met earlier this year to develop a tactical medicine policy that will provide guidelines for TEMS personnel, training and certification, and responding into hot zones (immediate threat) and cold zones (outer perimeter). The primary goal in any EMS incident is for victims to be cared for quickly and competently. In a SWAT/TEMS action, a second objective emerges: for all responders to return home safely.

Questions? email: jtelmos@dhs.lacounty.gov
helps the ESD unit function in many different geographic areas where they must use not only their medical training but other specialized training to render care in the prehospital setting. ESD utilizes the latest in medical technology in order to deliver advanced medical care. Trauma packs are unique to ESD and hold items such as video laryngoscopes, electronic monitors for complete patient vital signs, mil-spec tourniquets, and hemostatic agents needed to control massive hemorrhaging in the prehospital setting. State-of-the-art medical armored vehicles allow ESD paramedics to provide advanced medical care within the inner perimeter of high risk operational areas.

Tactical training is a requirement to be part of the ESD. Members attend Basic SWAT School, and attend advanced tactical training in firearms, Long Rifle, Explosive Breacher, etc. The members of the ESD unit have been assigned to SWAT detail for one year prior to becoming a candidate. State-of-the-art armor, weaponry, and equipment are managed by ESD members in order to complete any tactical missions, which include the use of an Advanced Life Support armored vehicles. The extensive training allows the ESD to have multiple functions in an incident that has both law enforcement and paramedical implications.

Helicopter operations are an aspect of the ESD unit which allows the Sheriff’s Department to facilitate a rapid response to any emergency in most geographic locations in Los Angeles County. Air Squad 5 is a Sikorski H-3 Sea King helicopter which, along with its 10,000lbs lift capability, is a certified advanced life support air ambulance. This helicopter has the ability to hoist, rappel fast rope, and also has night vision capabilities with a maximum response speed of 166 miles per hour. Air Squad 5 also has an unrefueled range of 500 miles. The five person crew is staffed with two Sheriff’s personnel, who are also licensed paramedics. Air Squad 5 training is key to utilizing all of the other specialized training and facilitating its use throughout the county.

Mountain rescue is another aspect of the training the ESD utilizes. This allows members of the ESD to work with additional resources in various mountain search and rescue missions. The diverse geographical terrain of Los Angeles

**Stephanie Raby, RN**

**2010 Nurse of the Year**

by John Quiroz, Program Director, Medical Alert Center

Stephanie Raby began working at the Los Angeles County Emergency Medical Services (EMS) Agency in 2007 assigned to the Medical Alert Center (MAC). Her work experience included over twenty years of EMS experience and a strong background in emergency nursing, prehospital care and disaster preparedness.

During her tenure with Los Angeles County, she assisted with improving the knowledge level of the staff assigned to the Department of Health Services (DHS) Departmental Operations Center (DOC) including providing Incident Command System training and coordinating training through Texas A&M’s Enhanced Incident Management Unified Command Course. Her expertise and knowledge and involvement with the National Training Center directly benefited the Agency and improved the DOC’s level of readiness.

As the MAC Nurse Supervisor, Stephanie identified gaps in the EMS Agency emergency communications protocols. This led to her chairing a Communications Workgroup, which is tasked with the development and refinement of the emergency communication plan.

Following the Chatsworth Metrolink train derailment in September 2008, Stephanie took a lead role and coordinated the County’s EMS After Action Report and contributed to the report submitted to the Board of Supervisors. She served as the Multiple Casualty Incident (MCI) Task Force coordinator and working with the task force members, reviewed and refined all pre-hospital care policies that pertained to MCIs and developed specific teaching points related to the policies. These policy revisions and teaching points were incorporated into the training materials as part of EMS Update 2010.

Stephanie also presented the findings from the Chatsworth Metrolink train derailment at three major conferences; the EMSAAC conference in Palm Springs, the Northeast Regional Medical Response System Conference in Cleveland, Ohio and recently at the Solano County Emergency Medical Response Summit. In all instances she received letters of commendation for her participation.

As the EMS Nurse of the Year for 2010, this award was well deserved. Along with her major accomplishments, she continues to bring the same attention to excellence on a daily basis to her routine assignments.
The forgetting starts with recent general memories and eventually AD erases the knowledge of who the sufferer is, which leads to changes in their personality. They forget how to perform the skills of daily living such as dressing, eating, shaving and toileting, eventually even walking. Destruction in the frontal lobe leads to changes in moral behavior such as stealing and inappropriate sexual behavior. Loss of the cells that regulate self control can produce uncontrolled anger, rage and violence in an otherwise passive person. Not being able to recognize images has some AD persons conversing with themselves in a mirror because they don’t recognize their own face. As recent memories evaporate, the dementia person bases their daily existence on older and older memories, thus living life backwards. They may not recognize their own spouse or children because the only memories they have left are from life decades before their marriage. As the neurological connections are severed and their brain dies, they continually regress in knowledge and abilities.

Typical AD behaviors are fear and paranoia related to everyday objects and hallucinations of all types. Eventually the person forgets how to read and speak. End stage AD usually finds the person unable to walk and confined to bed with complications from the imposed inactivity. Death itself is usually related to malnourishment and pneumonia brought on by the inability to swallow and ‘forgetting’ to breathe. The slow relentless process from simple forgetting to death takes approximately 5-7 years but some people endure the decline for 20 or more years.

**EMS Personnel and the AD Patient**

Persons with AD or dementia cannot enter the normal world so EMS personnel must respond in a way that fits the patient’s frame of reference. Be prepared for strange behaviors such as over dressing, inappropriate displays of anger and rage, even overt sexual advances. Rescuers need to remember that AD people cannot always operate as adults. It is natural to want a dementia patient to ‘act normal’ but they simply cannot.

Treat dementia patients respectfully but be prepared to repeat, repeat, and repeat everything you say. In an emergency situation they may not have any idea what happened to them or why you are there. They don’t remember the car accident or falling down, the chest pain or shortness of breath. Speak calmly and quietly and give them time to process information. Speak in short simple sentences. Break each question down to bare essentials. Talk to them, but verify the details with the family. You may need to gather actual details of the event out of sight of the patient.

Always approach a dementia person from the front. Don’t touch them without warning; they need time to process what is happening to them. AD persons commonly do not like to remove their clothing so trying to undress them may be unproductive. If they do become upset or combative do not argue, just distract and redirect them. Change the topic or ask another question or make small talk. They can quickly forget what was upsetting them.

Because most dementia patients are elderly, EMS personnel should expect medical problems other than the initial chief complaint. This is also a population that will very likely have do-not-resuscitate paperwork so discuss potential treatments or medications with the patient and family prior to rendering care. Some medications may be totally inappropriate because the dementia brain does not work like a normal brain. When the caregiver says NOT to give a medication, believe them. Medications given for anxiety and agitation, such as midazolam, may not help and might actually make the behaviors worse or decrease the patient’s level of consciousness.

While it is more likely to become an issue after hospital arrival, NEVER leave an AD person unattended because they may wander away. Do everything possible to keep the dementia person and their caregiver together.

**Impact on EMS**

While medical science has lowered the death rates of other diseases, deaths from AD have increased 46%. The number of aged is expected to double in the next 20 years, eventually becoming 20% of the population. If just 10% of this group develops AD symptoms, then the chances of dementia complicating an otherwise routine 9-1-1 response are enormous. The key component of a successful interaction will be the ability of EMS personnel to feel comfortable working with elderly dementia patients.

**References**

Antelope Valley Hospital Designated as a Level II Trauma Center
by Christy Preston, Trauma System Program Manager

After nearly two years of planning, it was with great pleasure that the LA County EMS Agency announced the official designation of Antelope Valley Hospital (AVH) as a Level II Trauma Center effective May 3, 2010. Trauma Centers are an essential public service that save lives by providing immediate coordination of highly specialized care for the most life-threatening injuries and have proven to be cost effective programs because they lower mortality rates, decrease permanent disabilities, lower morbidity rates, and decrease the number of productive years lost to society.

AVH is the first Trauma Center to be designated in over five years. Trauma knows no boundaries and can affect anyone. AVH’s designation fills not only a critical need in LA County’s Trauma System but in several other systems, including Kern County and San Bernardino County, based on their geographic location. AVH’s designation helps to ensure that patients are transported in the least amount of time to enhance their ultimate outcome.

AVH is a nonprofit hospital founded in 1955. The five-story, 420-bed facility is located 70 miles northeast of downtown L.A. in Antelope Valley – one of California’s fastest growing areas.

Seven board-certified surgeons are now on staff at AVH and are dedicated to caring for trauma patients twenty-four (24) hours a day, seven (7) days a week, three hundred sixty-five (365) days a year. Not only is the trauma surgeon in-house at all times, he/she is often present in the emergency room on the patient’s arrival.

In preparation for their designation, AVH upgraded its ER, enlarged its triage area to expedite care of critical patients, and increased the trauma education and training of staff who care for the critical needs of this new patient population. In addition, AVH resumed Paramedic Base Hospital operations, previously relinquished in 2001. As a Paramedic Base Hospital, AVH has the ability to communicate directly with the EMS field personnel, provide on-line medical direction, and garner first-hand knowledge of the patient’s condition to facilitate preparation for their imminent arrival.

Having a local Trauma Center provides numerous benefits to the Antelope Valley community. More lives will be saved because patients can be treated faster and closer to home. Prior to AVH’s designation, patients were transported to Providence Holy Cross Medical Center nearly fifty (50) miles away. Due to this distance, patients often required transport by air, which could be limited in severe weather conditions, and often travel the distance proved to be burdensome for families visiting loved ones. AVH’s designation will save families time and money because they’ll be able to visit loved ones locally and avoid travel-related expenses.

“Without the support of the Los Angeles County Board of Supervisors, becoming a base hospital and applying for Trauma Level II designation would never have been possible for Antelope Valley Hospital,” said Edward Mirzabegian, AVH Chief Executive Officer, in a news release. “Supervisor Michael Antonovich and his staff have been very focused on ensuring that the residents of the Antelope Valley have the necessary healthcare facilities and resources. They should be commended for their efforts to improve health care in the Antelope Valley.”

LASD ESD (from page 5)

County is a challenge that the ESD must face on a daily basis. ESD personnel are required to attend an intensive six week, POST approved, mountain training course that is designed to make each ESD unit member capable in mountain rescues. Successful completion of the course qualifies that member to be part of a TYPE 1, snow and ice, high altitude Search and Rescue team. Being skilled in mountain rescue has been effective in not only search and rescue missions, but responding to injured persons in these diverse regions of the county.

The dive rescue operation of the ESD is a large unit that is one of the most diverse public safety dive programs in the world. Los Angeles County has 75 miles of coastline, 29 major lakes and reservoirs, 4 major rivers, and over 90 miles of the LA Aqueduct. This makes the need for a skilled dive rescue program vital for the safety of Los Angeles County residents who populate these regions. Team gear consists of additional underwater communications equipment, search tools and equipment, underwater navigation equipment, underwater metal detectors, salvage equipment and tools, scanning sonar, side scanning sonar, Remote Operated Vehicles (ROV) and Diver Propulsion Vehicles (DPV) The ESD unit maintains and utilizes a fleet of boats ranging from a 55’ diesel powered jet for ocean operations to 12’ RIBs. Additionally, the ESD unit regularly uses its Sikorsky H-3 helicopter for dive deployments and extractions. The ESD is available to respond to any underwater dive emergency 24 hours a day, 7 days a week.

The specialized training that is utilized to make the ESD a very diverse, functional branch of paramedicine has changed the manner in which paramedics deliver care in the field. The members of ESD are able to use their law enforcement training and integrate their paramedic knowledge to serve the residents of Los Angeles County.
The California Department of Public Health declared a statewide epidemic of pertussis on June 23, 2010. As of November 2, 2010 ten infant deaths related to pertussis have been reported. Pertussis, also referred to as whooping cough, is highly contagious early in the illness when symptoms may be similar to a common cold. Pertussis can cause uncontrollable, violent coughing making breathing difficult between coughs. A deep “whooping” sound is often heard when the patient tries to take a breath between coughing spells.

Symptoms

Initial symptoms usually develop about a week after exposure to the bacteria, and can be very mild. Severe episodes of coughing start about 10 to 12 days later. In children, the coughing often ends with a “whoop” noise. The sound is produced when the patient tries to take a breath. In children less than six months of age, when childhood immunizations have not reached full effect, the whoop is rare. Coughing spells may lead to vomiting, turning blue, or a short loss of consciousness. Pertussis should always be considered when vomiting occurs with coughing or a cough lasts more than three weeks. In infants, choking spells are common. Other pertussis symptoms include runny nose, slight fever (102 °F or lower) and diarrhea.

Many infants with pertussis will not have the typical cough or whoop and initially may have unimpressive clinical presentations resulting in a missed diagnosis. During this current pertussis resurgence, any infant presenting with a history of respiratory difficulty should be taken seriously and should be transported so that they can be evaluated for pertussis.

Vaccination

In order to reduce the incidence of pertussis, a high level of community immunity is needed. This can be achieved through immunization. While many of us have been vaccinated for pertussis, immunity from vaccination wanes over time and requires a booster shot of the vaccine. Increasing community immunity through widespread immunization will decrease the chance that vulnerable infants will be exposed to pertussis and will also prevent debilitating cases of pertussis in older children, adolescents and adults.

The 2010 Statewide Medical and Health Exercise is scheduled for November 18, 2010. The scenario for 2010 is a detonation of an improvised explosive device resulting in mass casualties. Los Angeles County will utilize the State’s scenario, multi-phased approach and timeline. The EMS Agency, in coordination with the Disaster Resource Centers, has formed an exercise planning team to develop LA County specific objectives which will be distributed as they become available. Any questions, please contact Gary Chambers at gchambers@dhs.lacounty.gov.

The J. Michael Criley Paramedic Training Institute Commemorative album is now available for purchase ($55.00 cash or check). The limited edition, hardcover album features the history of EMS in Los Angeles County, letters from Randy Mantooth and Kevin Tighe, profiles of 911 public provider agencies, and over 350 pages of paramedic photos. To purchase the album, please visit the EMS Agency at 10100 Pioneer Blvd, Suite 200 Santa Fe Springs, CA or contact us at: 562-347-1500 or ems@dhs.lacounty.gov.