

Whatcom County EMS Providers Working Together

Emergency DISPATCH



TRAUMA CARE COUNCIL

Proper Spinal Immobilization

By Ying Wu, M.D.

In February 2007 I was completing one of my duty days in the aid room at Mount Baker when the ski patrol brought in a patient strapped to a backboard. The patient, a 50-year-old woman, had taken a tumbling, twisting fall near the bottom of Chair 8 in hardpack snow conditions. Her on-scene exam had indicated a possible spinal injury. The patrollers in attendance had immobilized the patient using “D rings,” which are the primary device used on the mountain for patient immobilization.

The indicative findings in the patient’s aid room exam included extreme focal midline spinal tenderness in the lower lumbar spine and persistent paresthesias and intermittent numbness in both lower extremities. She also had significant pain on logrolling, which was a bit disturbing, but fortunately she had no change in her distal neurologic exam with logrolling. We felt it was essential that we examine her back to complete our survey and rule out other injury. It is also part of the routine trauma survey. Some components of her sensory changes were probably cold induced, but others were almost certainly neurologic as they persisted after warming. I think the numbness was mostly cold induced, but the paresthesias were almost certainly spinal in origin. Her vital signs were stable throughout and she responded well to pain medication. We left her on a spine board the entire time she was in the aid room, with a pillow under her knees for comfort. We did clear her C-spine, so she did not have to remain in a collar the whole time. When the medics arrived, we transferred her to the vacuum splint for transport down the mountain.

Some weeks later, I received a phone message from this patient at my office in Bellingham, ask-

ing me to call her. She was profuse in both her thanks and her praise for the care she received on the mountain. Her neurosurgeon at Harborview had specifically requested that she let the ski patrol know that their proper immobilization likely prevented spinal cord injury and preserved her neurological function. Spinal cord injury at this level would have resulted in paraplegia and loss of control of bowel and bladder. This patient was able to spend three months in a clamshell brace and resume her normal activities.

Emergency medical responders in Whatcom County are fortunate to have a clear, proven spinal protocol to follow in order to identify patients who need immobilization and those who do not. Keep up the good work!

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Mt. Baker Ski Area volunteer patrollers Nan Lloyd, Wayne Chaudiere, and David May work to immobilize a patient on the mountain.



Whatcom Medic One Update

**By Randy VanderHeiden,
Division Chief of EMS**

In 2007, the City of Bellingham created a new Office of Emergency Management. Assistant Chief Andy Day was selected to head up this division within the Bellingham Fire Department. Roger Christensen was then promoted to Assistant Chief of Operations, and in April I took over Roger Christensen's position overseeing Whatcom Medic One. In the time that Chief Christensen held this position a great deal was accomplished. He was instrumental in securing the new sales tax funding for Medic One, and made great advances in building partnerships with the county fire districts. Realizing the strides he has made in this office, I hope to continue the good work already started.

My career in the fire service started at the age of 18 when I joined Whatcom County Fire District #1. I have now served with WCFD #1 for the past 22 years. I was a paramedic when hired with Bellingham Fire Department in 1990, and have served most of my 17 years with Bellingham on medic units assigned to the county. I enjoy working with the staff and volunteers of the fire districts that serve the citizens of Whatcom County.

There are numerous changes in store for EMS in Whatcom County. Our Whatcom Medic One system has long been recognized as one of the best in the nation. We owe much to the vision of

past leadership. We must proceed carefully as we continue to provide the best and most fiscally responsible service to the citizens of Whatcom County.

Over the past couple of years, we have changed the way we deliver service to our customers. Several fire districts, as well as fire departments from the cities of Bellingham and Lynden, have established themselves as basic life support (BLS) transporting agencies. To maintain our current level of advanced life support (ALS) service in the midst of the ever-increasing call volumes, other agencies will be called upon to assist in providing BLS transports. Much planning and cooperation is required to bring this plan to fruition.

Due to increasing call volume and attrition of paramedics, Whatcom Medic One continues to train new paramedics. We have established a high standard for paramedics who choose to work within Whatcom Medic One. In 2007, three experienced firefighter/paramedics from outside Whatcom County were integrated into Whatcom Medic One. We also have six BFD firefighters who are nearing the end of their paramedic training and our hope is to have them all certified in the beginning of 2008.

Technology also continues to change the way we do business. We are currently working on two different computer systems for the medic units. The first is a mobile data computer that will be used to receive dispatch information, aid in communication, provide access to mapping, and much more. The computers have been in use on Bellingham fire apparatus and are now making their way to EMS as well. The other is a computer for an electronic medical incident reporting system. We are moving away from handwritten reports and heading toward an all electronic reporting system. The software being used for the report writing is from the same company that provides the billing software in Medic One's accounts receivable department. Our hope is that this transition will provide greater security, allow for more complete medical reports, decrease documentation errors, and reduce the amount of time office staff spends inputting data. Another piece of technology being investigated involves video laryngoscopy. Whatcom Medic One is currently evaluating

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Whatcom County Fire District #1 and Whatcom Medic One responded to a semi-truck rollover in August 2007. The truck was carrying a load of plate glass windows when it failed to negotiate a turn on State Route 9. The truck had four occupants, including two children in the cab's sleeper. One adult and one child were transported to St. Joseph Hospital with non-life threatening injuries.



St. Joseph Hospital ED Renovations Near Completion

By Debra L. Taylor, RN, BSN

In March of 2004, the St. Joseph Hospital emergency department (ED) staff began planning for a renovation of the hospital's ED. The current ED was built in 1993, and demand for services was putting a strain on the facilities. Many issues for our patients, physicians, and nurses in the existing ED were primarily due to a lack of space. The ED was built to accommodate 39,000 visits per year for a Whatcom County population of 140,000. Since 1993, the county population has grown by more than 20% and ED visits have increased by 50%. St. Joseph Hospital ED expects to see more than 56,000 patients this year, an average of 155 visits per day.

In January of 2007, we began expanding and renovating the emergency department. Funding from the Hospital Foundation allowed the addition of glass breakaway doors on the new trauma bays just inside the ambulance entrance. Equipment upgrades and other modifications were completed as well.

At the completion of the second phase of ED A renovation, the department will have grown from 13,500 square feet to 22,800 square feet. The 1993 ED had a total of 26 beds, with several 6-bed rooms. ED A will have predominately private rooms with universal features, so that any level of care can be provided in any room. ED B will still have all semi-private rooms, but the rooms will be utilized as private until the demand for beds exceeds our ability to do so.

All beds in ED A have state-of-the-art physiologic monitoring. Both ED A and ED B are installing sensors so that in 2008, as soon as it is available, the ED will have an electronic tracking system.

Phase 2 of the renovations began in August, with completion in early December 2007. The ongoing construction resulted in multiple challenges for patients, families, physicians, staff and ambulance teams. A leaky roof further complicated matters, and was replaced in late August. While construction continued until late 2007, the opening of ED A Phase 1 allowed an increased capacity up to 38 beds, with semi-privates in use at ED B.

Finally, the walk-in entrance to the ED moved on July 12th to the east side of the building be-

tween the East Tower entrance and the Child-birth Center. We have extensive signage and maps for people to find the new location. The ambulance entrance reopened on July 5th and will remain operational throughout construction. Ambulances continued to go straight at Ellis and Squalicum, but the entrance to the ED from the Squalicum parking lot is barricaded so we can divert the walk-in and drive-in arrivals to the new eastern entrance.

There is a community open house in early January that we hope you all will be able to attend. The hospital will officially open the remainder of ED A on January 16th.

We hope you will join us in looking forward to an expanded and improved emergency department that will enhance the ability of St. Joseph staff and emergency responders to continue serving the citizens of Whatcom County. Thank you for your patience and cooperation throughout this ongoing construction.

WCFD #1 and Whatcom Medic One personnel work on a patient from the August semi-truck rollover. From left to right are Dwayne Faber (WCFD #1), John Scurlock (Medic One), Devon Pelkie (Medic One), Ken Myhre (WCFD#1), Marv Simonsen (WCFD #1), and Tim Wells (WCFD #1).



Brain Attack: Initial Diagnosis and Management

By Marvin A. Wayne, MD, FACEP, FAAEM

Current data from The Greater Cincinnati/Northern Kentucky Stroke Study indicate that at least 731,000 first ever and recurrent strokes occur each year in the United States. Prior studies based on data from Rochester, MN and Framingham, MA with primarily white and relatively affluent populations had placed that number at 500,000 per year. The current estimate of 40% more strokes per year than had been previously accepted makes stroke the number one cause of adult disability in America and the third leading cause of death, at a cost in excess of \$40 billion a year.

The generic term “stroke” encompasses acute neurologic syndromes with multiple etiologies. Approximately 80 – 85% of strokes are ischemic and result from either vascular thrombosis or emboli originating from the heart or a major vessel. The remaining 15 – 20% of strokes are hemorrhagic, with bleeding into the brain parenchyma itself or the subarachnoid space. It is virtually impossible to conclusively distinguish between hemorrhagic and thrombotic stroke on clinical grounds alone, making timely access to imaging a critical issue in stroke management.

Primary and secondary prevention of stroke is a most important priority in reducing morbidity and mortality from this devastating syndrome. Despite recognition of numerous risk factors, the incidence of stroke has been increasing. In an effort to provide primary care physicians with a single resource for stroke prevention information, the National Stroke

Association recently published an evidence-based review of the subject. Currently recognized risk factors for cerebrovascular disease include hypertension, myocardial infarction, atrial fibrillation, diabetes mellitus, blood lipid abnormalities, obesity and carotid artery stenosis. Lifestyle risks include cigarette smoking, excessive alcohol use, and lack of exercise.

For many years our ability to intervene on behalf of stroke victims has been so limited that we have developed a rather fatalistic attitude toward stroke. Indeed, the nihilism prevalent among health care providers regarding stroke care goes back centuries to ancient Greek civilization. Apoplexy, a synonym for stroke derived from ancient Greek means “struck with violence” implying the catastrophic and seemingly apocalyptic nature of stroke. This deep-seated helplessness in the face of cerebrovascular “accident” continues to prevent many health care providers from acknowledging legitimate advances in acute stroke care.

Treatment of acute ischemic stroke is extremely time sensitive. Accordingly, a successful approach must combine public awareness campaigns with EMS educational initiatives so that patients with acute neurologic events reach emergency medical care within a time frame that allows for acute intervention. Emergency physicians must be educated in the assessment and management of acute stroke and they must be enfranchised to initiate cutting edge care. Systems that ensure prompt response to accomplish diagnostic assessments and needed consultation in an acceptable time frame are integral to success. Only by heightened awareness that “time is brain” can we ever hope to achieve the success in stroke care that we have attained in acute cardiac care (“time is muscle”) and trauma care (“the golden hour”).

On June 18, 1996, the FDA approved the use of tissue plasminogen activator (t-PA) for the treatment of acute ischemic stroke in patients who could have treatment initiated within three hours of symptom onset. This recommendation resulted from data published in 1995 from the National Institute of Neurologic Disorders and Stroke (NINDS) t-PA Stroke Study Group in the

Mt. Baker Ski Area patrollers practice evacuation procedures on chair 6. Volunteer and paid patrollers also update their medical, avalanche, and toboggan handling skills annually.



New England Journal of Medicine. The follow-up study, which tracked patients out to one year, was published in 1999. This was the first major study of thrombolytic therapy in stroke patients to show substantial benefit. Earlier studies using both streptokinase and t-PA either failed to show benefit or were stopped because of excessive early mortality or symptomatic hemorrhage in the treated groups.

Approval of t-PA for acute stroke therapy creates both an enormous opportunity for stroke victims and substantial challenges for the entire health care system. Given the very tight time constraints in order to enable t-PA administration, potential candidates must seek medical attention at the onset of symptoms and the system must be geared up to receive stroke patients in an expedited manner analogous to heart attacks or trauma victims. For rapid assessment and treatment to be accomplished, all three phases (I Patient recognition; II EMS response; III ED care) of emergency care must be extremely efficient.

Phase I: Efforts at public education to make patients aware of stroke symptoms and the potential benefit of arriving at the emergency department as soon as possible after their onset began in the early 1990s when pilot studies of lytic therapy for stroke were attempting to enroll patients. Surprisingly, 50% of patients presented to the hospital within three hours of stroke onset. Other data place this figure at less than 30%. In evaluating the effects of a stroke study on patient behavior in this regard, Barsan and colleagues noted an increase in the use of 911 from 39% to 60% during the study period, resulting in substantial reductions in mean time to hospital arrival to 1.5 hours. Overall, 85% of patients were at home at stroke symptom onset, and in 50% of patients stroke onset occurred between 6 a.m. and 6 p.m. The most important factor resulting in early emergency department arrival appeared to be utilizing 911 as the first medical contact. Subsequent investigations indicated that arriving by EMS to the emergency department also shortened time to initial physician examination (0.5 hour decrease). Accordingly, current public awareness campaigns emphasize stroke symptom recognition and the importance of calling 911 quickly.

Phase II: Recent expert panel proceedings indicate that the training of basic EMTs and paramedics (EMT-p) is currently inadequate in terms of stroke and TIA recognition. Well-

trained EMS providers could alert receiving emergency departments with confidence of the impending arrival of a stroke victim resulting in expedited emergency department care. Training recommendations toward achieving this goal are available on the internet.

Phase III: Emergency department care begins with patient triage either at the time of arrival or before, in the case of patients using EMS. Currently, many emergency departments across the country are experiencing increased patient volumes resulting in delays in the care of acutely ill patients. Trauma and cardiac patients currently receive priority triage status and standing orders facilitate timely care. Stroke patients must receive similar status if assessment is to be accomplished within the necessary time frame. Triage protocols that allow nurses to initiate standing orders that follow AHA Stroke Council Guidelines for workups could expedite the process.

Evaluation of these patients by the emergency physician must occur promptly and CT scans must be obtained on a priority basis. Neurology consultation is highly desirable, but in locales where it is not immediately available, emergency physicians can act independently. The formation of "stroke teams" that mobilize rapidly to accomplish acute stroke care has been recommended and should include neurologists or neurosurgeons with special interest in stroke. "Telestroke" has been suggested as a method of using telemedicine to extend stroke care to areas where local expertise is lacking. Utilization of specialized stroke units have been associated with better outcomes for stroke victims, including lower mortalities (7.3% vs. 17.3%), higher proportion of patients at home after 30 days (5.6% vs. 33%), and better functional outcome. Accordingly, current guidelines recommend the development of stroke centers with stroke units dedicated to the care of stroke victims.

We are at a junction in time when the aging population will make cerebrovascular disease even more prevalent and costly than it already is. We must aggressively continue to bring the remarkable insights of the basic science of stroke quickly to the bedside. "Gearing up" to be able to accomplish t-PA therapy for stroke is a timely and critical first step.

**North Region EMS and
Trauma Care Council**
www.northregionems.com

**Whatcom County EMS
and Trauma Care Council**
www.whatcomcountyems.com

Bellingham Technical College
www.btc.ctc.edu

WCFD#2

www.wcf2.org

WCFD#4

www.wcf4.org

WCFD#5

www.fire5.com

WCFD#7

www.wcf7.org

WCFD#8

www.whatcomfire8.org

WCFD#11

www.lummiislandfire.com

WCFD#14

www.wcf14.org

Bellingham Fire Department

www.cob.org/fire/

Lynden FD

www.lyndenfirefighter.org

North Whatcom Fire and Rescue

www.nwfrs.net

Editor's Box

Emergency Dispatch is a publication of the Whatcom County Emergency Medical Services and Trauma Care Council, with generous funding from the Nooksack Tribe. We welcome comments on the newsletter. Please send article submissions and letters to the editor for inclusion in a future issue to erica@renlabs.com. All articles and letters are subject to editing.

Erica Work, Editor

Rural/Metro Provides Service in Whatcom County

By David Phillips
Operations Manager, Whatcom County

Rural/Metro Ambulance is now operating in Whatcom County. Rural/Metro is licensed for basic life support with trauma verification in Whatcom County. Rural/Metro was founded over 50 years ago, and today has grown into a company with more than 7,800 employees who provide health and safety services throughout the United States. Annually, Rural/Metro's employees respond to more than 1 million calls for assistance.

In Whatcom County, Rural/Metro offers many unique services. We operate two ambulances and one cabulance from our headquarters on

Bakerview Road. Rural/Metro also has a bariatric unit on standby for the ever-increasing number of bariatric patients. Our Whatcom County division is located in the Pacific Northwest division of Rural/Metro Ambulance. Our regional headquarters is located in Mountlake Terrace, near Seattle. We have contracted customers in Pierce, King, Snohomish and now Whatcom County. On average we transport over 6000 patients in these four counties every month. Rural/Metro is glad to become the newest partner in the EMS community in Whatcom County.

East Region Update

By Denise Christensen
District Division Chief, WCFD #14

The East Region has been meeting regularly now for almost four years! On our agenda lately has been the challenge of responding to aid calls with our volunteers. Basic life support transports pose a difficulty in the East Region, and we are trying to find some solutions. It is a challenge to have volunteer EMS personnel available to respond during the day when most of the jobs in the county are located outside of our service area. The difficulty of having personnel available for transports is compounded by rising call volumes. Last spring, District 1 hosted an EMT class at Nugent's Corner. The class gave us the opportunity to add some EMTs to the east county. Seven

of the EMT students were from the "east side." District #14 has four more students scheduled for the winter 2008 class at Bellingham Technical College.

We are still in the process of naming a new chair for the East Region group. Floyd Roorda will be stepping down due to other commitments. We appreciate the hard work that Floyd has put into our bimonthly meetings.

At our last meeting we discussed the negative impact to the east county arising from the Balfour Village plans and the urban growth area in our service area.

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a laryngoscope that has a small camera at the end. This allows extraordinary visualization of the anatomy of the airway by looking at an LCD screen for placement of an endotracheal tube into the trachea. Initial evaluation of the device looks very promising.

I am currently involved with others in the fire, EMS, and hospital community in the development of a new county wide EMS plan. We are putting the final touches on our efforts, and

will test the new plan during our participation in a national level exercise taking place May 6th, 2008. The name of the exercise is Ardent Sentry, and will require the cooperation of multiple agencies from throughout the region.

Please bear with me as I continue to get up to speed with all that is happening within Whatcom Medic One and EMS county wide. I have worked with many of you in the past and look forward to continuing our strong working relationships.