

The Central Line

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NorthStar Responds After Two Fall Into Ravine

Submitted By Ed Strapp

When you get hurt and you're lying on the ground, it can seem like forever and a day before help arrives. When you don't know how you even got into the predicament you are in, it makes that wait seem longer. On Saturday morning, this scenario played out. Lying on a river bank, holding a friend after a fall over 40 feet, two gentlemen found themselves in need of help. Two others traveling in their party scrambled down the cliff to see what their friends had done; it was then, they realized help was critical. With both victims having multiple lacerations and internal injuries yet unknown, help was critical.

But who is going to help them at 1 am on a Friday night? They scrambled to a local camp, knocked

and screamed, and there they found help. Little did they know they had awoken neighbors who were in the EMS and medical field. This started the chain of events that took a disastrous situation and quickly brought calm to the scene. These neighbors made the call to 911, and more help was summonsed. These neighbors got first aid gear quickly together, and went to the scene. With nothing but a few first aid supplies, and some blankets, they did what they could do.

The 911 tones when out and friends and neighbors from all across Franklin County arose to the clatter, and headed out as quickly as they could. The duty crew at the Northstar Sugarloaf Base, Chuck Twitchell and Deb Clague headed to the scene. First Re-

sponder Ed Strapp hoped on board, and began to respond as they do to every call. You run scenarios through your head. You get as much information as possible from dispatch, and you try to figure out what you need, and prepare for what you might find. Some times you prepare for the worst and find it's not as bad, but today we prepared for the worse, and we came close to finding it just that way.

In this case, we needed everything. Everything? Everything! The call came in as 3 people who had fallen from the falls and were still in the river. Injury extent unknown at this time, but it was 5-6 miles off the main road. We quickly got Eustis fire enroute to the call, and asked for more backup. The scene sounded bad, and we

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She stole my costume idea!

Happy Birthday!!!

October

- **Deborah Clague**
- **Stephenie Whalen**



Puckerbrush Pearls

Submitted by Dennis Kerrigan

After a recent busy weekend of wilderness rescue in NorthStar’s Northern Tier, we should all be reminded that the prevalence and potential for hypothermia will increase with the approach of the changing seasons. Clearly, in one of those incidents aggressive on-scene hypothermia patient management played a critical role in the ability of 2 patients to survive almost 2 hours lying on wet rocks, dressed in cotton shirts and blue jeans (“cotton kills”, remember that), following complete immersion in the 50 degree water of Alder Stream and prior to the arrival of NorthStar medical units. Despite

both patients being found with ALOC (verbal to pain responsive on the AVPU scale), and shivering uncontrollably, they both arrived at CMMC via Lifeflight, now more than 6 hours after the initial fall, Alert and Oriented with normal body core temperature readings. If the trauma of their 35-40’ vertical fall into the rock choked stream bed had not killed them, certainly untreated hypothermia would have. Sharing the same environment as the victims, rescuers on scene quickly had to address hypothermia as not only a critical life threat to survival of both patients, but could affect rescuer judgment and problem solving as well if they were

not prepared for hypothermia conditions, what has often been termed “the killer of the unprepared”. This is where, as Dave Robie succinctly summarized in his Director’s Notes, “the ‘wilderness’ in WEMT training clearly paid off”. But the cold challenge can certainly present in more insidious ways, and it certainly can and does occur in ‘frontcountry’ as well as ‘backcountry’ settings. Take the following ‘streets’ hypothermia scenario, for example: Picture an elderly male on an alpha blocker which, in its side effect profile, can inhibit the peripheral vasoconstriction critical to ‘shunting’ blood from the body’s shell to the central core, in order to maintain the optimum 98.6 F body core temperature. Say he also has a dia-

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Director’s Notes

Submitted by David Robie

I talked about Pride a couple of issues ago. Today I’ll share some thoughts about another of the FCHN values: Caring. (*Quick quiz: what are the other two values?*) “Caring”

is incorporated into **NorthStar’s** mission, “The professionals of **NorthStar** EMS will adhere to the highest standards of respectful patient care...” and is something we practice (or should practice) every day. How do we do that?

Caring for patients comes immediately to mind, of course. We do this exceptionally well at **NorthStar** (see www.fchn.org/NorthStar/praises for a few examples). The training, the experience, the reason you got into this business was to care for

Caring



patients. This is good. But is that all?


What about caring for the patient’s family members? Do we communicate our actions with them? Do we attempt to ease their anxiety over their loved ones? Do we treat them as we would want to be treated ourselves if our wife/husband/child was hurt or with an unknown illness?

And caring for our fellow employees. Do we show our respect for each other by following through on our commitments? Respond timely to our obligations? Do we say (in words and tone) only positive and supportive things about and to our coworkers? Are we open to really finding out the needs, wants and despairs of our

NorthStar family members to be able to respond appropriately?

And lastly but perhaps most importantly, caring for self (and family). Although difficult, are you getting enough sleep? Enough family time? Are you eating right? Getting the right amount of exercise? It can be a strenuous profession and often only one of your several jobs. But balance is critical.

Remember to care for yourself first so you can then care for others.

And, of course you knew that Innovation and Excellence were the other two values didn’t you. Stay tuned for some thoughts on these values in upcoming issues. In 

Hiker (cont.)

wanted as much help coming with us as we could.

Franklin County Emergency workers sounded to the call. As the first rescuers came on scene, everyone knew what was needed. A hasty team quickly set out to make patient contact, and everyone followed suite. Once on scene, we found 2 patients, both in critical condition. Wet and cold from a plunge into the river, and badly hurt. Patient reports were sent out, and the cavalry stepped in. It is always comforting to head into the backcountry and know you have people helping. This was just one of those times. Three strangers fall, and 50+ people come to save them. Mind you this is between 1 am and 8 am, with many having to go to other jobs during the day. But the job gets done. Quickly working in unison, responders from 8 different agencies responded to the call on this night, and things turned out well. Eustis and Carrabassett Valley Fire departments brought a variety of equipment to the scene. Sid Shane became incident command, and helped coordinate the rescue with the medial staff on scene. Additional medical resources arrived from Northstar. Rangeley fire arrived with technical knowledge to support the extrication, and crews from Strong, Farmington, and Industry also responded with personnel and equipment. Franklin County res-

cue team sent members for technical extrication with a near vertical hoist required. When you have responders from so many different entities, it takes planning and corroboration to make it work. It takes the medical crews doing what they do, the fire personally providing the help and knowledge they have, and the specialized rescue groups to jump into action. It takes strong leaders from every department working together, with incident command in full swing to make it seamless. But it all gets done, and done right.

On this night it all happened perfectly. Equipment was stretched to the limits, and each person sees why the towns invest so much money into this equipment. When a \$500,000 ladder truck is purchased, one never thinks about how critical those lights might be for a wilderness medical call, or how important that boom might be for hoisting a patient. On the other hand, it takes 1 call like this to put it in prospective. When fire and rescue companies go to the town for budget items such as training, and educational classes, its situations like this that make it all so obvious how critical it was.

We often never think about what happens when we make a 911 call, and I am sure we never expect 50 people to respond to that one simple call. But on this night, they did, and thankfully. Seven hours after falling 40 feet, these two gen-

tlemen were in the Lifeflight of Maine Helicopters and heading to the hospital. With the quick response of all these individuals hypothermia was avoided, bleeding was controlled, injuries were stabilized and patients were hoisted 50 feet back up the cliff to the waiting ambulances, and transported to the more advanced medical care they needed.

It all happened in unison, this fact is one that so many people in Franklin County might never realize, and how lucky we are to have people like this living in our community and ready ❄️



FYI

As a 'primer' for next months continuation on active hypothermia treatment "Pearls from the Puckerbrush", check out the improvised heater / humidifier / nebulizer system using a cannibalized Non-rebreather O2 mask, a nebulizer t-tube set, and a hot pack and tape that will be showing up at all the bases. Mike Senecal will leave a demo model at each of the stations during his travels in the next week or so. He'll also leave a demo of a warm IV / hot pack system using hot packs wrapped and insulated around the IV bag, and IV tubing spiral wrapped around a hot pack for active convective heat application to hypothermic patients. More on these and other hypothermia thoughts next month. What was that saying again,

betic and stroke history, both of which can impair the ‘thermostat’ temperature setting centers of the brain, deplete glycogen ‘fuel’ stores, and /or inhibit the shivering response critical to thermoregulatory control. Add to his medical conditions an unattended ‘fall in the home’ incident; with poor care-giver support, so no one will check on him for 2 days. Now North-Star EMS enters the picture, dispatched to the residence to find an unresponsive 80 y/o male patient barely breathing, incontinent of his urine and bowels, found lying on his kitchen floor with an obvious hip or proximal femur deformity from an apparent fall. Consider all the possible causes of his altered mentation and imminent respiratory failure; possible spine and / or traumatic brain injury, question hypo/hyperglycemia, possible CVA, possible cardiac dysrhythmia / MI, possible medication overdose/ underdose, question volume shock from his probable hip or femur fracture. He has a shorter ‘laundry list’ of what is *not* wrong with him than his list of actual and anticipated problems. Given his multiple heat loss mechanisms that progressed slowly and quietly over 2 days lying on the floor, and given his limited thermoregulatory compensation mechanisms, unrecognized hypothermia could indeed become “the quiet killer”. Even on the warmest summer day in August, hypothermia would clearly need to be on your ‘differential diagnosis’ list of anticipated problems to treat for, following the ‘Big Net theory’ that all of these anticipated problems are going on with him until proven otherwise. A high index of suspicion would hopefully tell you that this pa-

tient could present with the same critical life threats as the 2 victims of the Alder Stream incident mentioned above, with untreated hypothermia as likely to lead to a poor patient outcome in either of these scenarios.

I am reminded of the ‘mantra’ that Dr. Larry Hopperstead, former CMMC Director of Trauma Services, repeatedly told us in an EMS Trauma case study meeting several years back – that “hypothermia kills trauma patients”. He quoted trauma studies that showed just 3 degree F core temperature drops (from 98.6 F to 95 F), when combined with multi-trauma injuries, resulted in up to 50% reduction in patient survival rates. Even more significantly, less than 90 degree F core temps at the time of ED admit resulted in a virtually 100% fatality rates for victims of multi-trauma insults. The message here is that humans don’t compensate well when we combine comorbid factors of hypothermia and ‘Big 3 System’ trauma; especially in the elderly, the every young, and the medically infirmed. They don’t die in the back of ambulances from hypothermia alone, or in ED’s either generally, but rather in a SICU bed days to even weeks later when they begin a ‘cascade effect’ of clotting abnormalities and metabolic derangements that lead to kidney and end-organ failures, ultimately succumbing to septicemia and vascular shock that perhaps could have been prevented by more aggressive pre-hospital hypothermia management *at the scene*. Hopp, always the advocate for ‘best practices’ in EMS, even before it was the latest buzzword,

was quick to impress upon us that what we do as EMS providers to stabilize core temperatures in the field can clearly make a difference, positively or negatively, on the ultimate patient outcome; depending on how aggressively we choose to recognize and treat patients as “hypothermic until proven otherwise”. Since my intent in this article is to focus on hypothermia packaging issues more than on the pathophysiology and assessment of thermoregulation, I’ll leave it to you readers to review the assessment criteria for mild, moderate and severe hypothermia in the MEMS protocol book, particularly if this ‘gloom and doom’ scenario leaves you a bit ‘fuzzy’ on your hypothermia assessment and treatment memory banks. The MEMS hypothermia assessment and treatment protocols have changed a good bit, with the most recent protocol revisions reflecting the hypothermia research and consensus building of Dr. Gordon Giesbrecht (aka Professor Popsicle) from the University of Manitoba. Check out his website: www.umanitoba.ca/faculties/physed/research/people/giesbrecht.shtml for videos of him going through the ice in his field research studies (hence his nickname), and for the most current information to date on hypothermia management.

How do you stabilize a potentially hypothermic patient’s core temperature, to at least not let a patient get any colder? The first and most important thing initially is to modify their environment in order to maximize their heat retention. This includes protecting them from the ambient environment, and removing or

Puckerbrush, Cont.

cutting off wet clothing. Remember the saying “*cotton kills*”, given its’ heat sapping solid fiber qualities. It is as critical to get dry insulation underneath the patient, to protect from conductive heat loss to the ground, as it is to get insulation on top of the patient. Strip them down to the skin layer (modesty is a lower priority), and wrap the patient in ‘water tolerant’ insulation layers; like sleeping bags or prefab hypothermia bag like the Wiggies Bags we carry in the snowmobile rescue sleds in the Northern Tier. Even better is to put a Tyvec wrap sheet, aluminum impregnated ‘space blanket’ to provide a vapor barrier layer against the skin. For non-wilderness ‘streets’ hypothermia you can improvise this by cutting 2 large bio-hazard bags at the ends, then tape them together to a 3rd bag, making a long ‘tube tent’. These vapor barrier layers reduce evaporative cooling, and prevent the insulation layer from getting wet if the patient loses bladder control, which then merely becomes like ‘peeing in a wetsuit’. Hypothermia often induces an ileus, or temporary bowel shut-down, so bowel movements generally aren’t as much of an issue to manage in the shorter term patient hypothermia packaging concerns.

For ambulance application of ‘streets’ hypothermia like the elderly male scenario, when we don’t have the rescue sled ‘wilderness’ packaging available, you can lay 3 blankets, (at least one of which needs to be wool), in each directional configuration; one long ways, one cross wise, and one in the diamond pattern, so they overlap the 3

layers over the core areas of the body. A wool blanket layer needs to be against the patients skin or *dry* clothing layer. Preferably all the blanket layers should be wool, so they will maintain their hollow fiber insulation quality even if they get wet. Remember the saying “*cotton kills...*” More blankets can then be layered on top of the patient as needed. Rescuers can package the patient for easier vital sign monitoring by inverting the BP cuff upside down from normal, so the bulb and pressure gauge come out at the top of the arm. The stethoscope can then be secured at the antecubital fossa over the brachial artery auscultation area with kling, (the cheapo single tube stethoscopes with the longer tubing work better than the short tube Littman \$thetho\$cope\$). You can then leave the stethoscope earpieces and BP cuff bulb and pressure gauge up near the patients head to be able to monitor their vital signs without having to unpackage them and lose all the heat contained in the patient hypo wrap. Protect the patient and the dry insulation layers from external rain or snow by wrapping them in a waterproof tarp by folding the corners in first, then the foot area, then around the sides, and finally the head in a ‘human burrito’ style configuration. To shed water well it needs to have no folds exposed on the top or sides of the patient where water can pool and begin to leak in. An even easier system is to use a body bag as the external vapor barrier. But don’t tell the patient you are putting them in a body bag – call it a ‘hypo wrap’ for PC pur-

poses. Make sure if it’s a single zipper body bag that the open end of the zipper ends up at the head of the patient. Avoid closing either the tarp or the body bag/hypo wrap completely over the patient’s face, to prevent claustrophobia and /or CO2 retention/rebreathing. A SAM splint curved in a ‘St. Louis Arch’ configuration over the head area of the patient can keep the tarp flap or body bag from laying directly on their face, while still protecting them from the ‘water torture’ of external rain dripping on them (or more likely the litter ‘grunts’ sweating onto them).

If spine injury can not be ruled out, this entire ‘burrito wrap’ is then placed in a foam padded litter, blanket padded backboard, or preferably a fully body vacuum mattress. We carry these on the Northern Tier units, and they are unquestionably ‘the gold standard’ for full spine precautions, both for their warmth and their body conforming features that maximize patient comfort and heat retention during long transports. Remember they need to have a litter or spine board under them to be end-to-end as well as side-to-side patient stable. Removing cold wet clothing, remembering, once again..... yes, *cotton kills..* and getting the patient into dry multi-layered insulation with external and internal vapor barrier protection form the elements will be the most important thing we can do to begin the process of stabilizing the patient’s thermoregulation capabilities. Then we can begin the process of providing more active heat production means towards the goal of increasing the patient’s core temperature response. (To be continued next month). ❄️

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The Back Page

Last but not Least...

What happened to the fitness challenge? The first one was a success with our teams encouraging each other's (or razzing each other) performance. The fitness trail in Farmington was used daily (how many deer did you see?).

There were diet fads: Atkins®, Weight Watchers®, tapeworms, and 48 hour Hollywood blowouts.

And we, the NorthStar health conscious (for everyone else besides us) caregivers that we are., lost weight. And lots of it.

We, the people of 'grab food when you can get it', of exercise is too much work', of Mmmm, ice cream' need to stand up (or get up) and take a (umm, shoot) stand. EMS workers are perceived as fat. And we are. How many fat full-time city firefighters do you see? And we all know that they like their ice cream too.

Firefighters cook together and train together. They plan their meals. They (like us) have some equipment to work out on.

**We're on the web! Check us out
at www.fchn.org/NorthStar**

Now, I'm the pot calling the kettle, aren't I? Lifestyle changes are hard.

Heck, any change is hard for EMSers. But caregivers in general take better care of their patients than themselves. It's the ♪♪ Circle of Life♪♪. One day a young, chubby EMT will come and cart our cholesterol coated butts to the hospital.

And we'll be saying, "I was a paramedic once." ❄️

Hey, remember, this is all B.S.. Or, is it....? If we can't poke fun at ourselves, we'll have to make fun of other people!

