INSIDE CREST

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CREST
CENTER FOR RURAL EMERGENCY SERVICES AND TRAUMA

A message from the Director:

All,
Defining "rural" has become increasingly important in recent years, for purposes of legislation, reimbursement, and research, among other things, but it turns out that there is no agreed upon definition in the Emergency Medicine literature. Chris Carpenter, MD, MSc at Washington University in St. Louis School of Medicine, Steve Hirsch, MST, MSLS at HRSA's Federal Office of Rural Health Policy and I were asked by ACEP's Rural EM Task Force to develop a definition of the term for an upcoming issue of the Journal of Rural Emergency Medicine (www.jorem.org), and I thought I would summarize that effort here.

In short, we could not find a clear definition of "rural" in any medical journals focused on rural health care delivery, and when we looked to the federal government we found multiple definitions of impressive complexity generally based on the idea that rural areas are what remain after the Census Bureau and other agencies have designated urban areas according to various formulas. In medical parlance, "rural" is effectively a diagnosis of exclusion, made only after "urban" has been ruled out. Ultimately we decided that it made sense to align our definition with that of CMS. Luckily, despite the complexity of that definition, there are two simple tools available that allow you to find out if an area meets this definition in a matter of minutes. Those seeking to define an area as "rural" should consider using the "Am I rural?" tool available at http://www.raconline.org/ amirural or the Rural Health Grants Eligibility Analyzer at http://datawarehouse.hrsa.gov/RuralAdvisor/RuralHealthAdvisor.aspx. If you are interested in a more detailed discussion of this matter, watch for the next edition of JREM expected out soon.

- Scott Rodi, MD, MPH
CREST Medical Director

CREST welcomes new Program Manager: Julia Barry, RN, BSN, CEN

We invite you to reach out to Julia. She is eager to learn more about your hospital, and hear your thoughts about how we can provide more value to the network. Please feel free to contact her at 603-650-8329 or via email at Julia.K.Barry@hitchcock.org. We are planning on Julia starting her outreach this summer.

CREST Highlights:

"CREST gives us an opportunity to partner with DHMC to insure we continue to provide evidence based, state of the art care to patients in our rural environment. CREST provides learning opportunities in almost all aspects of Emergency Care and helps us improve the processes of that care. The accessibility of effective, professional consultation and one-on-one feedback on a daily basis, as needed, has significantly improved the quality of care we deliver our patients no matter how big or small the problem." - Rick Marasa, MD; Medical Director at Springfield Hospital and Mt. Ascutney Hospital, Pictured above with Josh Cascadden, PA at Springfield Hospital and Mt. Ascutney Hospital

Springfield Medical Center, Springfield, VT

ED Medical Director: Richard Marasa, MD, MBA Board-Certified in both Emergency and Internal Medicine, has an M.B.A. from RPI and is a Fellow in ACHE and a Certified Physician Executive from ACPE. ED Nurse Manager: Cathy Howland R.N. BSN

Serves a population base of approximately 35,000. Statistical analysis of patients served defines the primary service area as most of Windsor County and northern Windham County, Vermont, and a small portion of Sullivan and Cheshire Counties in NH. And serves as the primary emergency care site for Okemo and Magic Mountain ski areas.

FACTs about Springfield Medical:

ED Annual Visits: >17,000 patients/year which is the busiest Critical Access Hospital in VT with high acuity(About 16% of patients admitted or transferred).
# of Transfers: We have over 1,000 transfers per year and are the #1 transferring Hospital to DHMC and with the highest Case Mix Index(acuity).
Staffing: Springfield's E.D. is a Level 3 E.D. with PA's working with Supervision from an Board Certified Emergency Physician.

22 Board-certified Physician Assistants (PA-C) work under his direction. The PA-Cs are certified in PALS, ACLS, ATLS, and Advanced Airway Management.

28 Full-time RNs
4 LNA/Secretary Staff
5 Hospitalists and 2 NP's cover 24/7
Average Daily ED Census: 48

Basic Specialties Provided On-Call: Surgery, Pediatrics, Hospitalist/Internal Medicine, Ortho,Ophthalmology, OB/GYN, but no specific on-call for any true sub-specialties. This requires a broad range of Emergency Medicine skills.

Hospital website: http://www.springfieldhospital.org/

For more information from the ACEP Rural EM Section, visit: https://www.facebook.com/ACEPRuralEM

Small Rural ED Resource for CREST: The ED Operations Study Group:

I'd like to introduce you to The ED Operations Study Group (EDOSG) www.edopsstudygroup.com as a resource to help you understanding the performance of your ED care processes compared to peer EDs. The EDOSG is a research consortium that collects and disseminates ED operations data to guide evidence-base clinical operations improvement. They focus on process metrics and study the impact of process variability on patient outcomes. With regards to research, they have a focus on cardiovascular disease evaluations in the ED. Maya Yiadom, the Founding Director, is an emergency physician, and emergency care research at Vanderbilt University.

As the EDOSG expands, they are looking for bigger samples of key ED types, including the largely unrepresented small rural ED. Membership involves completing a survey, of ED operations metrics and cardiovascular disease clinical practice, by July 3rd. They request a Letter of Intent to Participate (LOI) in advance of this. In return for submitting data, they provide a Comparative Report (see attached) that benchmarks the EDs performance against that of peer EDs. There is no fee. Similar, (but less comprehensive reports) cost $350-$1000 from other nonprofit organizations, and up to $10K from for-profit firms.

If you have interest in participating in this national initiative, contact **Maya Yiadom** directly at: Maya.Yiadom@vanderbilt.edu or edopsstudygroup@gmail.com

CREST Highlights:

Mt. Ascutney Hospital and Health Center

ED Medical Director: Rick Marasa, MD

ED Nurse Manager: Beth Gould, RN

Around 500 employees, ED staff around 24

Hospital website:

http://www.mtascutneyhospital.org/

What are the unique features of your emergency service area?

- We have a high percent of seniors citizens residing in the our service area
- We have short weight times with bedside registration
- We have a high percent of CEN's working in the ED
- We scored in the 97% on the Press Ganey surveys

What is unique in your area that others may want to know about or take advantage of?

- We provide medical coverage at variety of events: at the VT 100 Mile Endurance race in Hartland in July, the Long Trail Century bike race in June, the Hartland Christmas Under the Tree 5K race, and Paradise Sports Cross Frenzy cycling event in November.
- The ED sponsors a monthly meal at the community dinners for local residents
- The ED sponsors a monthly care package to a local person serving in the military stationed away from home
- We provide education services for a local high school student during the semester learning about health care
- We have students from Franklin Pierce College in the PA program, we support training with local EMS squads and programs

Continuing Education!

ATLS: Physicians and Mid-level providers:

Upcoming **ATLS** courses offered at DHMC in 2015:

When: June 25-26, November 5-6

Where: Dartmouth-Hitchcock, Lebanon, NH

ATLS INSTRUCTOR COURSE: May 1

More information: If you have any problems registering, e.g. if it says the course is full, please contact Hilary Hawkins in the Trauma Department: Hilary.L.S.Hawkins@hitchcock.org, or phone: 603-650-6064.

For more information: ACS link: http://bit.ly/1NWAEZV

Podcasts

For Physicians Working in ED's/Managing Medical Emergencies series. http://bit.ly/1CzluDl

Recent titles include: "Cases that Defy Logic," "Changes in Airway management," Push Dose Pressors: When, Where, Why and How," "The Fussy Infant," and Measurement and Management of Substance Abuse Issues in the ED."

ONLINE GRAND ROUNDS, includes archived grand rounds in cardiology, neurology, pediatrics, and many other areas: http://bit.ly/1cAfG71

Archived Medicine Grand Rounds- Go to: http://bit.ly/1JsskjY

Archived Nursing Grand Rounds - Go to: http://bit.ly/1a9YbsY

Interested in Emergency Medicine related courses?

Check out: DHMC's Emergency Department Education page: http://bit.ly/1Gt4tT2

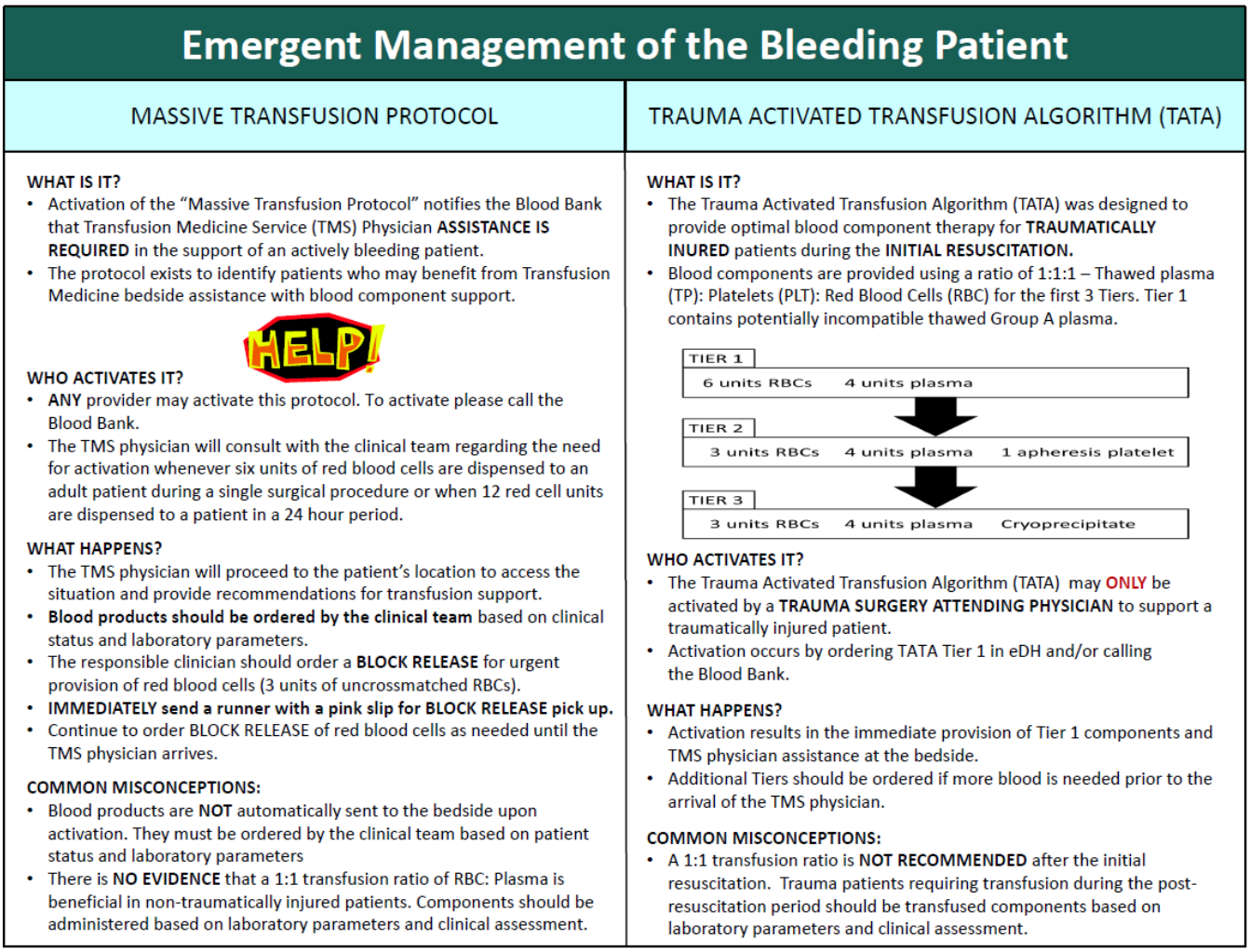
STEMI pearls: Time equals muscle

Please send a copy of the ECG along with your patient!
Sudden Cardiac Arrest is not necessarily a STEMI.

Pearls for EMS:
When the ECG and story add up to ***Acute MI*** contact the receiving hospital as soon as possible with your situation, especially during off hours. This facilitates emergency transport to a DHMC. We need time to assemble the cath lab team. Do not wait for the 10 minute radio check.
If you get an auto-reading of Acute MI, but there is a lot of artifact and/or a wandering baseline, please repeat to assure you are dealing with STEMI. Paramedics may use their training to override the auto-read if the symptoms and ECG don't add up to STEMI. **Note: We have an active STEMI team that reviews every STEMI alert that comes to DHMC. Please contact Sheila Conley (sheila.m.conley@hitchcock.org) or 603-650-5046 if you experience any issues or have concerns about the system.**

Pearls for Emergency Department staff:
Know your hospital. Some hospitals have clear pathway for STEMI transfer to DHMC immediately or administer lytics. Some hospitals have a choice depending on the circumstances. Have awareness of patient condition, weather and EMS availability to help guide decisions.
If you aren't confident that you have a STEMI diagnosis, please call for assistance.
STEMI Alerts activate the cath lab. If your patient isn't going to agree to a catheterization or doesn't meet STEMI criteria, then please don't call a STEMI Alert. Call the transfer center and they will facilitate a transfer. Guidelines support oral dosing of metoprolol, rather than intravenous, for hypertension. If EMS is more than 45 minutes from DHMC at the scene of the STEMI, do not divert that ambulance to DHMC. Guidelines suggest a FMC – First Medical Contact – of 90 minutes or less for primary PCI. The patient should go to the local hospital, receive medical treatment of Plavix, heparin and possibly thrombolytics then transferred emergently.

EMERGENT MANAGEMENT of the BLEEDING PATIENT, and TRANSFUSION TRIGGERS for MASSIVE TRANSFUSION –Laboratory Guided Transfusion in the Non-Trauma Setting
by Dr. Nancy Dunbar, Assistant Professor of Pathology and of Medicine Medical Director, Blood Bank Associate Medical Director, Transfusion Medicine Service



Emergent Management of the Bleeding Patient

MASSIVE TRANSFUSION PROTOCOL

WHAT IS IT?
- Activation of the "Massive Transfusion Protocol" notifies the Blood Bank that Transfusion Medicine Service (TMS) Physician **ASSISTANCE IS REQUIRED** in the support of an actively bleeding patient.
- The protocol exists to identify patients who may benefit from Transfusion Medicine bedside assistance with blood component support.

HELP!

WHO ACTIVATES IT?
- **ANY** provider may activate this protocol. To activate please call the Blood Bank.
- The TMS physician will consult with the clinical team regarding the need for activation whenever six units of red blood cells are dispensed to an adult patient during a single surgical procedure or when 12 red cell units are dispensed to a patient in a 24 hour period.

WHAT HAPPENS?
- The TMS physician will proceed to the patient's location to access the situation and provide recommendations for transfusion support.
- **Blood products should be ordered by the clinical team** based on clinical status and laboratory parameters.
- The responsible clinician should order a **BLOCK RELEASE** for urgent provision of red blood cells (3 units of uncrossmatched RBCs).
- **IMMEDIATELY send a runner with a pink slip for BLOCK RELEASE pick up.**
- Continue to order BLOCK RELEASE of red blood cells as needed until the TMS physician arrives.

COMMON MISCONCEPTIONS:
- Blood products are **NOT** automatically sent to the bedside upon activation. They must be ordered by the clinical team based on patient status and laboratory parameters
- There is **NO EVIDENCE** that a 1:1 transfusion ratio of RBC: Plasma is beneficial in non-traumatically injured patients. Components should be administered based on laboratory parameters and clinical assessment.

TRAUMA ACTIVATED TRANSFUSION ALGORITHM (TATA)

WHAT IS IT?
- The Trauma Activated Transfusion Algorithm (TATA) was designed to provide optimal blood component therapy for **TRAUMATICALLY INURED** patients during the **INITIAL RESUSCITATION.**
- Blood components are provided using a ratio of 1:1:1 – Thawed plasma (TP): Platelets (PLT): Red Blood Cells (RBC) for the first 3 Tiers. Tier 1 contains potentially incompatible thawed Group A plasma.

TIER 1: 6 units RBCs 4 units plasma
TIER 2: 3 units RBCs 4 units plasma 1 apheresis platelet
TIER 3: 3 units RBCs 4 units plasma Cryoprecipitate

WHO ACTIVATES IT?
- The Trauma Activated Transfusion Algorithm (TATA) may **ONLY** be activated by a **TRAUMA SURGERY ATTENDING PHYSICIAN** to support a traumatically injured patient.
- Activation occurs by ordering TATA Tier 1 in eDH and/or calling the Blood Bank.

WHAT HAPPENS?
- Activation results in the immediate provision of Tier 1 components and TMS physician assistance at the bedside.
- Additional Tiers should be ordered if more blood is needed prior to the arrival of the TMS physician.

COMMON MISCONCEPTIONS:
- A 1:1 transfusion ratio is **NOT RECOMMENDED** after the initial resuscitation. Trauma patients requiring transfusion during the post-resuscitation period should be transfused components based on laboratory parameters and clinical assessment.

Dartmouth-Hitchcock

TRANSFUSION TRIGGERS for MASSIVE TRANSFUSION –Laboratory Guided Transfusion in the Non-Trauma Setting

Obtain STAT labs (CBC, INR, fibrinogen) often, after every 4 RBCs.
Give:
- a dose of plasma when INR approaching 2,
- a dose of Cryo when fibrinogen is less than 150,
- platelet when count approaching 100.

We are a bit less restrictive about the criteria because the labs take a while to result and reflect the past, not the present situation.
After each plasma dose, check iCa because the units contain a lot of citrate and critically low calcium is not uncommon in massive transfusions.

A lot of people are stuck on 1:1:1, but in a non-trauma adult patient you don't really begin to see other lab abnormalities until about 10 RBC units in (assuming normal liver function). End stage alcoholics with GI bleed have less reserve so it is important to give plasma earlier for them.

CREST 2015 Calendar of Events

MAY	JUNE	JULY	AUGUST
Central NH EMS Conference at Sunapee Mountain Resort May 2-3rd	**CREST Trauma Rounds** June 3rd 12NOON Webinar	**CREST Trauma Rounds** July 1st 12NOON Webinar	**CREST Trauma Rounds** August 5th 12NOON Webinar
CREST Trauma Rounds May 6th 12NOON Webinar	**EMS Continuing Education** DHMC June 9th 1900	**CREST Case Review** July 15th 12NOON Webinar	**CREST Case Review** August 19th 12NOON Webinar
The American Nurse Screening @ DHMC May 11th 5:00PM	**CREST Case Review - EMTALA Violation** June 17th 12NOON Webinar		
Joint Cardiology / EMS STEMI Review DHMC May 12th 1900			
CREST Case Review - Pedi DKA May 20th 12NOON Webinar			

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CREST Trauma Rounds September 2nd 12NOON Webinar	**CREST Trauma Rounds** October 7th 12NOON Webinar	**CREST Trauma Rounds** November 4th 12NOON Webinar	**CREST Trauma Rounds** December 2nd 12NOON Webinar
CREST Case Review September 16th 12NOON Webinar	**CREST Airway Skills Workshop** October 14th	**CREST Case Review** November 18th 12NOON Webinar	**CREST Case Review** December 16th 12NOON Webinar
	CREST's 8th Annual Northern New England Rural Emergency Services and Trauma Symposium October 15, 2015		
	Nonviolent Crisis Intervention (NCI) Course October 16, 2015		
	CREST Case Review October 21st 12NOON Webinar		

Please visit our website for news and information, http://med.dartmouth-hitchcock.org/crest.html, and follow us via social media at:

Twitter: www.twitter.com/CRESTDHMC **Facebook:** www.facebook.com/CRESTDH

If you are interested in learning more about CREST, please contact CREST@Hitchcock.org.