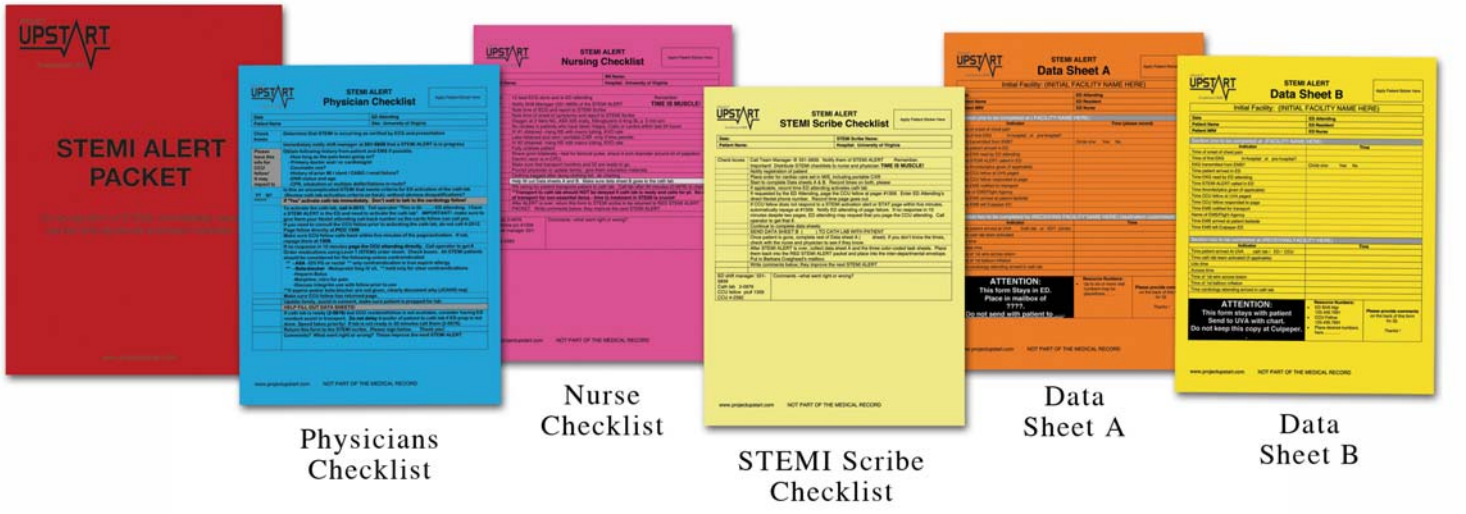
The STEMI ALERT Packet
(At a non-PCI center)

The key to triggering the reperfusion process

- Use of a STEMI ALERT Packet is a key step in optimizing treatment of the STEMI patient. Opening a STEMI ALERT Packet upon first recognition of STEMI acts as the "reperfusion trigger"- shifting the focus from **"early recognition"** to **"immediate reperfusion!"**

- This "if/then" action **(Recognize STEMI…Open Packet!)** provides ED staff with a concrete response whenever they detect a STEMI.

- Each bright red STEMI ALERT Packet contains color-coded versions of five basic forms:



Packet "installation" is easy:

- First, each form is carefully adapted to your site – using whatever details you feel are important for a best-practice STEMI ALERT. These "site customized" STEMI ALERT Packets are then placed in your ED -usually in a highly-visible wall holder.

- Now, whenever a STEMI is recognized, ED staff automatically open a red STEMI ALERT Packet. This provides immediate access to the provider checklists and data collection sheets that give every STEMI ALERT the guidance needed for precise execution.

- This basic approach works for all treatment strategies – emergent PCI, patient transfer or on-site thrombolytic therapy. The provider checklists keep the process on track and encourage early decisions. The two data sheets collect valuable real-time QI data.

A Sample STEMI ALERT Packet

(a non-PCI facility)

The next few pages depict a sample STEMI ALERT Packet from a facility that utilizes thrombolytic therapy and/or inter-facility transfer for treatment of STEMI patients. Non-PCI facilities have more details to evaluate, so it's important to avoid indecision. Remember, time = muscle!

The Physician Checklist from a non-PCI facility should emphasize fast assessment of transport options, quick evaluation of the patient's condition and early consideration for thrombolytic therapy in eligible patients. The decision of "thrombolytics versus "transfer for PCI" is (ideally) made as early as possible. Note the simple progression to decision that the checklists encourage.

At non-PCI centers the ED physician must stabilize the patient, evaluate the patient for possible thrombolytic therapy AND initiate/assess EMS transport options –often all at the same time! Again, the Physician Checklist helps present data logically, provides prompts for the correct actions and encourages efficient decision making.

An actual STEMI ALERT Packet will have color-coded forms to simplify recognition. It will contain three checklists and two data sheets. The checklists and data collection sheets are standardized to format and color but all other details can be adjusted.

Note that two data sheets are completed during each STEMI Alert: After the alert, Data Sheet A is directed to the person responsible for STEMI QI at the initial facility and Data Sheet B is directed to a designated person at the receiving center (or cath lab). Use of two data sheets facilitates immediate feedback at both facilities and provides insurance against lost data. They are very simple and easy to fill out. Directions in the big black box provide clear instruction on where each data sheet should be sent.

Note #2: Data Sheet B is sent with the patient if/when they are transferred. It provides a link between facilities and is designed for efficient retrieval by the receiving facility. They then can then send information back to the "customer" -the non-PCI facility. This simplifies feedback.

The following sheets are from an actual hospital and would be color-coded as shown above. The STEMI ALERT Packet sheets at your facility are customized to fit your specific requirements. Templates of all forms are available by contacting us at info@projectupstart.com.

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STEMI ALERT
Physician Checklist

Apply Patient Sticker Here

Date	**ED Attending**
Patient Name	**Site: Waters Regional Hospital**

Check boxes	Determine that STEMI is occurring as verified by ECG and presentation. Notify nursing staff that a STEMI ALERT is in progress.
AirFlight I: 1800.552.1822 AirAlert: 1800.567.890 ……	****A) Immediately tell ED staff to call for air transport availability.** If air is available, notify them of transport STAT (*If unsure of STEMI, talk to STEMI ALERT Fellow first). If air is not available, assess other transport options! ****B) Have staff call ULA at 834-924-0000. Have them tell the operator, "We have a STEMI ALERT at Waters and need to Speak to the STEMI ALERT FELLOW." This number will get you STAT to the STEMI ALERT fellow!**
Please have this info for Cardiologist! It may impact tx >>>>>>>	Obtain following history from patient and EMS if possible. -**How long as the pain been going on**? - Primary doctor and / or cardiologist -Coumadin use? -History of prior MI / stent / CABG / renal failure or current dialysis? -**Age and DNR status** -CPR, intubation or multiple defibrillations in route? -Patient age, weight and height -History of dye or contrast allergy? -Brief report of Tx and EKG findings
	Ask ED staff if they have heard from air transport/cardiology. If not, re-page them.
Consider lytics if no air transport available >>>	**Consider thrombolytics in qualifying pts (prior to transport) if transfer time of one hour or more is likely –usually the case if air transport is not available. Review Thrombolytics Guide Sheet attached to physician blue sheet. If patient is given lytics they may not need air transport unless unstable. Consider ground EMS.**
	If considering lytics -remember to get stat portable CXR
	Order medications. All STEMI patients should always be considered for the following: • ** -**ASA**:-325 PO or rectal ** only contraindication is true aspirin allergy • ** -**Beta-blocker:** -Metoprolol 5mg IV x3, or 50mg PO If aspirin and/or beta blocker are not given, clearly document why (JCAHO req • **Lovenox:** 1mg/kg Sub Q (up to 100 mg) **OR** heparin bolus if over age 75 (If giving lytics refer to lytics sheet for more information on meds) • Fentanyl, morphine and nitro paste for pain –**no drips –they waste time**!
	If you have paged the STEMI ALERT FELLOW twice and have not heard from them after 10 minutes, call the ULA ED attending directly at (834) 531-5711.
	Update family, assist in consent, make sure patient is prepped for the cath lab
	HELP FILL OUT DATA SHEETS! Make sure COBRA forms are done!
	Record pt. departure time on Data Sheets A & B. **Send Data Sheet B to ULA with patient**
	Please sign this sheet at top and return (with comments) to the person collecting them.
	Comments? What went right or wrong? These improve the next STEMI ALERT. Please write your comments on back for review by Sheila Kawsfel and Dr. Roseblade

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Thrombolytics Assessment Worksheet / Checklist

STEMI patients presenting to Waters Regional without reasonable expectation of PCI **within 90 minutes of presentation** should undergo thrombolysis **within 30 minutes <u>unless contraindicated</u>**" (this recommendation based on AHA/ACC Class I evidence)

In general, short symptom duration, age <75, large infarcts, anterior ST elevation, large reciprocal changes and clear ECG evidence of STEMI indicate patients who may derive the greatest benefit from early administration of thrombolytics <u>if delay to PCI exceeds 1 hour</u>.

I. Consider thrombolytics as the preferred therapy if all the following are true:

- **Y / N** **<u>Transportation time to ULA is likely more than 1 hour**?</u>
  (Usually the case if air transport is not immediately available
- **Y / N** Symptoms started less than **3 hours** ago?
- **Y / N** Clear ST elevation in 2 or more contiguous leads >1mm **<u>or</u>** new LBBB?
- **Y / N** Patient has no absolute contraindications to thrombolytics? (listed below)
- **Y / N** Patient is stable w/o signs of cardiogenic shock? (for shock, PCI is preferred)

II. Absolute contraindications: avoid thrombolytics if any answer is "yes"

- **Y / N** Has the patient ever had an intracranial hemorrhage of any sort?
- **Y / N** Does the patient have a known structural cerebral vascular lesion (i.e. AVM)?
- **Y / N** Is the patient suffering from primary or metastatic brain cancer?
- **Y / N** Has the patient had an ischemic stroke **<u>within 3 months</u>** but not within 3 hrs?
- **Y / N** Do you think the patient is having an aortic dissection?
- **Y / N** Is the patient currently having active bleeding? (excluding menses)
- **Y / N** Has the patient had significant closed head or facial trauma within 3 months?

III. Relative contraindications: benefit of PCI may be > thrombolytics, particularly if multiple factors are present. Reasonably assess combined factors.

- History of chronic severe, poorly controlled hypertension
- Severe hypertension on presentation (SBP >180 or DBP >110)
- History of stroke over three months ago or ? intracranial pathology (not ICH or CA)
- Recent, vigorous CPR for > 10 minutes or major surgery within 3 weeks
- Internal bleeding within 2-4 weeks but not currently
- Noncompressible vascular punctures / Pregnancy
- A questionable dx of STEMI (ECG findings not clear or not diagnostic)
- Prior multiple cardiac stents or known hx of severe CAD
- Age over 75 (age alone is NOT a contraindication to thrombolytics, only a consideration)
-

IV. If patient clearly fits criteria for thrombolytic therapy, proceed immediately! If you are not sure, prepare for thrombolysis (mix drug) while waiting to talk to ULA STEMI ALERT Fellow. Continue to work on transport options. Stable post-lytic patients may not need air transport.

Note: Choice of thrombolytic agent is site dependent. Specific instructions for your site are placed on back of the Thrombolytics Assessment Worksheet

(For example this site utilizes TNK)

TNK (Tenecteplase)
tissue plasminogen activator instructions and dosing

Remember, Time = Muscle! Door to needle goal <30 minutes!

Dosing;

TNK is weight based.
TNK is *a single bolus* injection only.

Patient's Weight	TNK dose	TNK Volume
a. < 60 Kg	**30 mg**	**6 ml**
b. 60-70 Kg	**35 mg**	**7 ml**
c. 70-80 Kg	**40 mg**	**8 ml**
d. 80-90 Kg	**45 mg**	**9 ml**
e. >90 Kg	**50 mg**	**10 ml**

Preparation

1. Patient should have an IV of N saline.
2. Remove "shield assembly" from 10cc syringe. *Note*; do not discard.
3. Withdraw 10 ml of sterile water from (provided) vial using "red hub" device.
4. Gently inject sterile water into TNK vial onto TNK powder.
5. Gently swirl contents; *do not shake or agitate.* Concentration is 5 mg/ml.

It should be colorless to clear - pale yellow.

6. When the decision to give TNK is made, **Heparin should be administered before or concurrently** with TNK.

Administration

1. Withdraw appropriate patient dose from TNK mixture.
2. Stand "shield assembly" vertical on countertop (green cap down) and recap red hub
3. Remove entire shield assembly including red hub.
4. TNK is ready to inject as a bolus through a *needleless* hub into a saline solution IV line.
5. Inject TNK as bolus over 5 seconds.
6. Discard remaining TNK if physician concurs.

Remember to give Heparin or Lovenox in addition to TNK

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STEMI ALERT
Nurse Checklist

Apply Patient Sticker Here

Date:	**RN Name:** **ED Attending:**
Patient Name:	**Hospital:** **Waters Regional Hospital**

	12 lead ECG done and to ED attending **REMEMBER: TIME IS MUSCLE!** Call the nursing supervisor and inform them that you have a STEMI ALERT in progress
	Note time of ECG and patient arrival time and report to STEMI scribe
	Note time of onset of symptoms and report to STEMI Scribe
	Oxygen at 2 liters NC, ASA 325 orally, Nitroglycerin 0.4mg SL q 5 min prn
	No nitrates in patients who have taken Viagra, Cialis or Levitra within last 24 hours
	IV #1 obtained –hang NS @ KVO rate
	Labs obtained and sent / portable CXR done –**especially important for patients getting lytics**!
	IV #2 obtained –hang NS with macro tubing at KVO rate
	Fully undress patient
	Remove hair from groin bilaterally –feel for femoral pulse, remove 8-inch diameter around site of palpation using electric clippers.
****	Fully prepare patient for transport –have you done everything possible? **Verify that transport paperwork is done (COBRA forms) prior to EMS Arrival**
	Prompt physician to update family; give family education materials
	Clothing bagged after doing clothing list, do charting
	Important! Fax patient demographic into to the ULA Bedcenter at (433) 244-7547
	Note EMS arrival time and departure time on Data Sheets A & B
*****	Remember! Please send **Data Sheet B (the yellow copy)** with patient to UVA! Thanks.
	After ALERT is over, return this form to STEMI scribe to be returned to RED STEMI ALERT PACKET to go to Sheila Johnson. Write comments below; they improve the next STEMI ALERT.

AirFlight 1 1-800-552-1826 ULA Cath Lab 434-982-	ULA ED attending cell phone 834-531-5701 ULA ED Charge Nurse 834-531-5839 **Comments –what went right or wrong**

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STEMI ALERT
STEMI Scribe Checklist

Apply Patient Sticker Here

Date:	**STEMI Scribe Name:**
Patient Name:	**Hospital:** **Waters Regional Hospital**

	Call Nursing Manager immediately and notify them of the STEMI ALERT! Open a STEMI ALERT Packet and distribute checklists to nurse and physician.
Check boxes when task done	Immediately call AirAlert @ 1800-542-1846 to assess flight status. Tell them there is a STEMI at Culpeper ED. If they are not available, tell nursing supervisor and ED physician STAT!
	If air transport is not available, immediately start looking for fastest ground transport. Contact local EMS agencies; consider use of AirAlert ground transport –whoever is fastest.
	Ask ED attending if they want the ULA STEMI ALERT FELLOW paged. If yes, call 834-924-0000 (UVA hospital operator). When they answer, use these **exact words: "This is the Waters ED. We have a STEMI ALERT and need to talk to the STEMI ALERT FELLOW."**
	Make sure the patient is registered.
	Place orders for cardiac care set, including portable CXR; call radiology STAT.
	Start preparing EMTALA transfer forms –**they must be done when EMS arrives.**
	If the STEMI ALERT FELLOW does not call back within 5 minutes **automatically** re-page them. Note this in chart and notify ED attending immediately.
	Please fax patient demographic information to the ULA Bedcenter as soon as possible at (433) 288 -7547
	If you have not heard from the ULA STEMI FELLOW in **10 minutes** tell the ED doctor. They may have you call the ULA Emergency Dept. attending @ 834-537-5701 (direct cell #). Record info on Data sheets A and B, including time the cardiologist calls back.
	Complete the rest of Data sheets A and B. If you don't know the times, check with the nurse and physician to see if they know
*****	**Make sure that DATA SHEET B (YELLOW) goes to ULA with patient**.
	After STEMI ALERT is over, collect data sheet A and the three color-coded checklists. Place them back into the RED STEMI ALERT packet and place into the red inter-departmental envelope, attention Sheila Jackson.
	Write comments below; they improve the next STEMI ALERT

ULA ED Charge Nurse 834-531-5839 ULA Cath Lab 834-982-097	ULA Coronary Care Unit 834-924-2582 AirAlert: 1-800-642-1926 **ULA Bed center (fax) 433 244 7547** **Comments –what went right or wrong? -Write on back of this sheet!**

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STEMI ALERT
Data Sheet A

Apply Patient Sticker Here
6/30/07

Initial Facility: Waters Regional

Date	**ED Attending**
Patient Name	**ED Resident**
Patient MR#	**ED Nurse**

Section I -completed at Waters Regional

Indicator	Time
Time of onset of chest pain	
Time of first EKG in-hospital or pre-hospital?	
EKG transmitted from EMS?	Circle one: Yes No
Time patient arrived in ED	
Time EKG read by ED attending	
Time STEMI ALERT called in ED	
Time thrombolytics given (if applicable)	
Time cardiologist/fellow at -------- paged	
Time cardiology responded to page	
Time EMS notified for transport	
Name of EMS/Flight Agency	
Time EMS arrived at patient bedside	
Time EMS left -XXXX-ED	
****Remember –this form stays in the Emergency**	**Department after the patient leaves!**

Section II -completed at ULA

Indicator	Time
Time patient arrived at ULA cath lab / ED / CCU	
Time cath lab team activated (if applicable)	
Lido time	
Access time	
Time of 1st wire across lesion	
Time of 1st balloon inflation	
Time cardiology attending arrived in cath lab	

ATTENTION:
This form stays behind in the ED!
Do not send with patient to ULA.
After STEMI ALERT -collect and place in mailbox of George Thorgrow

Resource Numbers:
- ED Shift Mgr 123.456.7891
- CCU Fellow 123.456.7891

Please provide comments on the back of this form for QI.

Thanks!

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STEMI ALERT
Data Sheet B

Apply Patient Sticker Here
6/30/07

Initial Facility: Waters Regional

Date	**ED Attending**
Patient Name	**ED Resident**
Patient MR#	**ED Nurse**

Section I -completed at Waters Regional

Indicator	Time
Time of onset of chest pain	
Time of first EKG in-hospital or pre-hospital?	
EKG transmitted from EMS?	Circle one: Yes No
Time patient arrived in ED	
Time EKG read by ED attending	
Time STEMI ALERT called in ED	
Time thrombolytics given (if applicable)	
Time cardiologist/fellow at -------- paged	
Time cardiology responded to page	
Time EMS notified for transport	
Name of EMS/Flight Agency	
Time EMS arrived at patient bedside	
Time EMS left -XXXX-ED	
***** Remember –this form transfers with patient**	**when they leave the Emergency Department**

Section II -completed at ULA

Indicator	Time
Time patient arrived at ULA: cath lab / ED / CCU (circle)	
Time cath lab team activated (if applicable)	
Lido time	
Access time	
Time of 1st wire across lesion	
Time of 1st balloon inflation	
Time cardiology attending arrived in cath lab	

ATTENTION:
This form stays with patient! Send to ULA with chart. Do not keep this copy in the Waters ED. At ULA place in the mailbox of Dr. Reirson.

Resource Numbers:
- ED Shift Mgr 123.456.7891
- CCU Fellow

Please provide comments on the back of this form for QI.

Thanks !