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CRITICAL VALUES – CRITICAL TROPONIN OR CK-MB/INDEX

☒ **St. Joseph Medical Center, Tacoma, WA**   ☒ **St. Anthony Hospital Gig Harbor, WA**   ☒ **Harrison Medical Center, Bremerton, WA**
☒ **St. Francis Hospital, Federal Way, WA**   ☒ **St. Elizabeth Hospital Enumclaw, WA**   ☐ **Harrison Medical Center, Silverdale, WA**
☒ **St. Clare Hospital Lakewood, WA**   ☒ **Highline Medical Center Burien, WA**   ☐ **PSC**

PURPOSE

To provide instructions for calling critical troponin (TnI) and/or CK-MB/CKI results when the TnI and/or CK-MB/Index are critical for the first time during an encounter, or if the patient had prior critical levels but they had returned to baseline and are now critical again.

BACKGROUND

"Fliers" are false positive results due to fibrin strands that form when tubes aren't properly mixed at the time of the blood draw. While rare (~0.007%), these fliers occur during the first (and sometimes second) immunoassay performed on the DXI and Access, which is often a troponin and/or a CK-MB/Index and can cause critically high results. Thus, all first time critical TnI and CK-MB/Index values must be confirmed by re-spinning and re-running the specimen to ensure accurate results.

RELATED DOCUMENTS

R-PO-AD-0551   Critical Value Policy – Laboratory
R-PR-AD-0550   Critical Value Process
R-W-CH-1825   DXI & Access CK-MB
R-W-CH-1826   DXI (TnI) Troponin I
R-PO-AD-0730   Error Management Policy

STEPS

Patient with critically high TnI and/or CK-MB/Index

1. Check for prior critical results. If previous critical value is found, proceed to Verified Previous Critical Value Called section below.

2. If this is the first critically high TnI and/or CK-MB/Index in this admission or encounter (or if the patient had prior critical levels but they had returned to baseline and now are critical again) proceed with the following:

First time critically high TnI and/or CK-MB/INDEX

1. Call the provider and report the results.

2. *Document in the Comm Log and add the smartphrase .BKRCCALL1, which reads* "Per laboratory policy, all first critical troponin and CK-MB/Index results will be repeated. The provider will be notified of any discrepant results." *after the prepopulated Comm Log comment.*

3. If TNI is critically high and patient has a "RALS Troponin I" (ER order code for i-Stat troponin) that is critical, the "RALS Troponin I" may serve as the "first critically high TnI". In such circumstances, the lab

methodology serves as confirmation for the i-STAT Troponin I critical value and it does not need to be repeated. Call the critical TnI value to the provider. Document in the Comm Log and add the smartphrase .CCALL2, which reads "*Troponin not repeated in lab due to critical i-Stat result*" after the prepopulated Comm Log comment "*Critical Values(s) for *** Called/Read Back to *** (Loc***) at ***by***.*"

4. Prelim verify the result. Proceed with the steps below under Repeat of First Critical TnI and/or CK-MB/Index.

Repeat of First Critical TNI and/or CK-MB/Index

1. Aliquot the specimen, spin it, and re-run the assay(s). This repeat needs to be done as quickly as possible.

2. If the new results <u>increase</u> by more than 20%, there may be an issue with the instrument. Re-run the specimen on a different instrument. Consider asking for a re-draw and/or troubleshooting the instrument to determine the cause.

3. If the new results <u>match</u> within 20% and are still critical, enter non-chartable comment (yellow Lab Box) .BKRRPT ("*Verified by repeat analysis*") on TnI and/or CK-MB/Index. (see section below)

4. If the Troponin and/or CK-MB/Index repeat testing shows that the true results are not critically high (the results are <u>lower</u> by >20% and there is a change in interpretation (critical to indeterminate or critical to negative), call the <u>doctor</u> immediately and say "I'm calling from the lab regarding patient John Doe, DOB 1/3/66. We have repeated the troponin and/or CK-MB/Index tests and the results are **not critical**. The previously reported results were **falsely elevated**. The true results are ---." Do your best to speak directly with the doctor. If the doctor is unavailable, report the information to the nurse and ask her to notify the doctor immediately.

5. Ask for a read back. Correct the first results and open Comm Log to add the chartable comment .LCALL "*Laboratory value(s) for *** Called/Read back to *** (LOC***) at *** by ***.*" Complete a Quality form.

6. If you are told that a patient with a flier had an invasive procedure because of the false positive result, notify Manager on site or call the on call clinical pathologist.

Verified Previous Critical Value Called

If the patient had a previous critical value for TnI and/or CK-MB/Index, and we can verify that the previous critical value was called/documented, then we do not need to notify the provider again. Use the following steps to document in the LIS.

1. In the Comm Log, the critical result will auto populate the critical value comment with the value and reference range (see example) "*The following critical results were read back and acknowledged. Troponin I 1.282 ng/mL High Panic (Ref. Range 0.00-0.04).* <u>Verify that this is the same admission/encounter</u> as the first critical TNI and/or CK-MB/CKI <u>and that it was documented as being called</u>.

2. Delete the Critical documentation that auto populated in the Comm Log box.

3. Update the Contact by deleting the provider name and typing "NONE". Delete or backspace through the number in phone field to leave it blank.

4. Add the smart phrase .VPC, type enter and type F2 to expand the list. You may want to widen the Comm Log box before you press F2, in order to see the whole comment.

5. Select the correct smart phrase for the Verified previous crucial result and press enter. Example is for "*Verified previous critical values called for TNI*" (see below).

6. Click Accept.

Viewing Documentation of the Critical Value

Review of the CV documentation can be seen in the Comm Log section. Providers and RN's can see the information below the results by scrolling to the bottom of their view.

Example:

16SJ-004C0560		Instrument ID: 2908	
Alban, Eunice (MRN 1006010)		**Blood**	
F, 57 yrs, 3/21/1958	Coll. Dept: SJMCLAB	Collected 1/4/2016 1459 by Dana Haas	
		Container: 1 GRN PST	

Flags, Holds & FYIs

Critical result requires follow-up on Troponin I

Contacts

Patients Contacts			Francis Burns, MD		N/A
Personal		713-555-3908 Home	Authorizing Provider		
SJMC CLINICAL LAB		253-426-6682 Phone	SJMC FMB FAM MED		253-274-7503 Phone
Ordering Department - TROPONIN I [LAB747]		253-426-6385 Fax	Ordering Department - LIPID PANEL [LAB18]		253-274-7993 Fax

Communication (Completed) for TROPONIN I (FHS)

	Contact	Occurred	Topic
✓	RN, Tessla 713-555-3908	04/17/2017 1213 by Megan Alban	Critical
	The following critical results were read back and acknowledged. Troponin I: 1.25 ng/mL High Panic (Ref. Range: 0.00-0.04)		
✓	NONE 713-555-3908	04/17/2017 1231 by Megan Alban	Critical
	Verified previous critical values called for TNI		

- Notify provider of result and that it will be repeated per policy
- Doc. In Comm Log – CCALL1
- PreLim Verify Result

ED Critical RALS Troponin I
1. TNI do not repeat
2. Report result
3. Call CV
4. Doc in Comm Log-CCALL2

START HERE
Critically high
TNI, CKMB or Index

Prev. CV Doc? —YES→ Doc. in Comm Log VPC

No

1. Call CV
2. Doc. In Comm Log
3. Q Form Miss CV

ER Patient
1st critical
I-STAT

First critical in this encounter?

- Aliquot
- Spin
- Repeat

- RPT CV Confirmed
- Doc. in Test/Panel Non-Chartable-Yellow Lab Comment Box - BKRRPT
- Final Verify

Did results change by >20%

Yes, >20% LOWER
Critical->Interderminant
Critical -> Neg

Call doctor immediately.
Say "I'm calling from the lab regarding patient John Doe, DOB 1/3/66. We have repeated the troponin and/or CK-MB and the **results are not critical.** The previously reported results were **falsely elevated.** The true results are…"
Speak to the nurse if the doctor is not available.

Yes, >20% HIGHER

- Re-run on another instrument
- Troubleshoot
- Consider re-draw

- Correct the first result
- Call Corrected Value
- Doc. in Comm Log-LCALL
- Q-Form to Document