

**CBC REVIEW CRITERIA - LH ANALYZERS**

- St. Joseph Medical Center Tacoma, WA   
  St. Clare Hospital Lakewood, WA   
  St. Elizabeth Hospital Enumclaw, WA  
 St. Francis Hospital Federal Way, WA   
  St. Anthony Hospital Gig Harbor, WA   
  PSC

**POLICY**

The FHS Laboratory has defined parameters for reviewing results from the LH Series Hematology analyzers.

**REPORTABLE RANGE FOR HEMATOLOGY ANALYZERS**

**FHS CRITICAL VALUES FOR ADULTS**

Parameter	Beckman LH Series
WBC	0.4-400.0
RBC	0.82-7.81
HGB	2.6-24.0
MCV	0-150
PLT	10-999
RET	0.2-10.0

Parameter	Critical Low	Critical High
WBC	< 2.0	>50.0
HCT	<22.0	>60
PLT	< 30	>1000

**SLIDE REVIEW CRITERIA**

Parameter	First Action	Second Action	Final Action	Related Document(s)
<b>WBC COUNT</b>				
WBC : (+++++), or WBC: >100.0 LH WBC: >90.5 HMX	Dilute and repeat.	Follow procedure for Elevated WBC's. Correct RBC/indices, if indicated.	Slide review. WBC estimate. Man Diff, if Indicated.	DXH LH Elevated WBC M-W-HEM1318
WBC with "R" flags	Check for clots If WBC >90 dilute and repeat.	Check for NRBC or plt clumps	Slide review. WBC estimate. Man Diff, if indicated.	WBC Slide Estimates R-W-HEM1420
WBC: <2.5 or >30.0	Scan slide at 1 <sup>st</sup> presentation	AND, every 3 days	Slide review.	
WBC: <1.0	Scan slide; Follow Procedure; Low WBC Counts.	Scan for immature or ABN cells. If sufficient cells, Auto or MAN diff reported. If insufficient cells, cancel and credit Diff (if necessary).	Submit for path Review if indicated.	WBC Low Count R-W-HEM1325

Parameter	First Action	Second Action	Final Action	Related Document(s)
<b>RBC / HH / Indices</b>				
RBC: > 7.8			Dilute and repeat.	
HGB: <2.6	Below linearity- unable to report		Report as See Com and footnote as HGB <2.6	
HGB: > 24.0			Dilute and repeat.	
HCT: Any value.	Failed delta.	Confirm sample ID and integrity	Review patient or TX history	
MCV: <65 OR >115	1 <sup>st</sup> presentation, Slide review	AND, every 30 days	Or, if Failed delta. Check sample ID.	
MCV: Any value.	Failed delta.		Check sample ID.	CBC Interference from Abnormal Chemistries M-W-HEM1576
MCHC: >37.0	Suspect Cold Agg, lipemia, hemolysis, spherocytes.	See Procedure for RBC Agglutinins, Plasma Replacement	Prewarm, saline replace, or dilute specimen, as indicated.	RBC Agglutination Management R- W-HEM1413 Plasma Replacement R-W-HEM1319 CBC Interference from Hemolysis R-W-HEM1582
MCHC: <30.0	AND, Normal or High MCV	Check for instrument error.	Check for sample related causes, contamination, hypochromia	CBC Interference from Abnormal Chemistries M-W-HEM1576
RDW: >24.0	1 <sup>st</sup> presentation		Slide review.	
<b>PLT COUNT</b>				
PLT: (+++++) PLT: >1000	Dilute and repeat	Slide review for 1 <sup>st</sup> presentation.	Perform slide estimate.	Platelet Count Estimate R-W-HEM1421, Platelet Estimates Range Microscope R-F-HEM0300
PLT: <80	Check for clot	1 <sup>st</sup> presentation.	Slide review and estimate	
PLT: <10	Check for clot	1 <sup>st</sup> presentation.	Slide review and estimate-if they match, report as <10	
PLT: Any value	Failed delta.	Check for clots.	Slide review and estimate.	

Parameter	First Action	Second Action	Final Action	Related Document(s)
<b>Differential</b>				
A. Neut : <1.0 or >20.0	Scan slide-1 <sup>st</sup> presentation	AND, every 3 days.	Follow Slide Review Procedure	
A. Lymph: >5.0 adult >7.0 (<12 y.o.)	Scan slide-1 <sup>st</sup> presentation	AND, every 3 days	Follow Slide Review Procedure	
A. Mono: >1.5 adult >3.0 (<12 y.o.)	Scan slide-1 <sup>st</sup> presentation	AND, every 3 days.	Follow Slide Review Procedure	
A. Eos: >2.0	Scan slide-1 <sup>st</sup> presentation	AND, every 3 days.	Follow Slide Review Procedure	
A. Bas: >0.5 or Percent>6.0%	Scan slide-1 <sup>st</sup> presentation	Follow Slide Review Procedure	Suspect instrument error If baso's not present on slide.	
Diff Vote-out or "R"	Check for clots.	Repeat, if indicated.	MAN DIFF if unresolved.	
<b>Flags / Codes</b>				
Vote-Outs (.....)	Check for clots.	Repeat, if indicated.	If diff vote-out & unresolved: MAN DIFF	
"R" Flags	Check sample and repeat.	If persists, scan slide.	WBC/PLT estimate may be indicated.	WBC Slide Estimates R-W-HEM1420 Platelet Count Estimate R-W-HEM1421, Platelet Estimates Range Microscope R-F-HEM0300
IMM NE2	Slide Review for 1 <sup>st</sup> presentation	AND, every 3 days if WBC consistent with previous.	Repeat slide review if WBC or differential results have significant changes.	
Blast: MO, NE, LY	Repeat, if indicated.	Repeat, if indicated.	MAN DIFF if blasts seen in slide review. CBC PR if indicated.	
Variant Lymph	1 <sup>st</sup> presentation.	AND, every 3 days.	Slide Review.	
Cellular Interference	Check sample. Repeat, if indicated.	See procedure for Cellular Interference WBC/PLT estimate.	Slide Review	LH Cellular Interference M-W-HEM1320
Platelet Clumps	Check sample. Vortex and repeat.	Slide review.	See procedure for Platelet Clumping.	Platelet Clumping-EDTA Induced Correction R-W-HEM1317
Giant Platelets	1 <sup>st</sup> presentation.		Slide review.	
NRBC#: NRBC flag	Check sample. Vortex, if indicated.	See procedure for slide review.	Note: If NRBC present, WBC count may need correction.	LH Cellular Interference M-W-HEM1320

Dimorphic RBC's	1 <sup>st</sup> presentation.	AND, no TX history	Slide review.	
Parameter	First Action	Second Action	Final Action	Related Document(s)
<b>Retic Count</b>				
Abs. Ret: >0.100 or %Ret: >10% Abn Ret Pattern flag Verify Retic flag	See procedure for Auto-Retic.	Prepare retic slide and perform estimated retic count.	If count is inconsistent with auto-retic, perform a manual retic. If reporting manual retic, change the test ordered to RET MAN before resulting.	Retic Manual Count R-W-HEM1423
<b>Neonates</b>	<b>DLMAN Orders</b>			
Neonate: <1.0 mo old DLMAN: Any	DLMAN test order is for Beckman DL2000 users only		Perform MAN DIFF	

## REFERENCES

Coulter LH750 Series Operator's Guide.

International Consensus Group for Hematology Review, International Society for Laboratory Hematology, 2004.

**Please Complete Review by date: 6/10/2013**

Reviewer	Approval Required?	Date Reviewed	OK?	Not?	Suggestions
Karen Benson	N				
Danielle Capers	N				
Susan Guillen	N				
Mary Hancock	Y	9/6/13	y		
Jacqueline Hilyard	Y	7/9/13	Y		See new comment j15 above.
Gary Meyer	Y	5-30-13	Y		
Anne Tuttle	Y	5-17-13	N		See notes in pink above. More notes 7-9-13

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Please Complete Review by date:					
Reviewer	Approval Required?	Date Reviewed	OK?	Not?	Suggestions
Nuria Adem					
Linda Burkhardt					
Cecil Dunn					
Roberta Dutcher					
Teri Emerson					
Linda Guay					
Carla Herl					
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Jezelin Temporosa					
Claudia Willis					
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Katie Wilkinson		9/6/13	y		

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<input type="checkbox"/> No significant change to process in above revision. Per CAP, this revision does not require further Medical Director approval.

<b>Committee Approval Date</b>	<input type="checkbox"/> Date: <input type="checkbox"/> N/A – revision of department-specific document which is used at only one facility	<b>Medical Director Approval</b> <i>(Electronic Signature)</i>	
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