Corewell Health

East Laboratory

Attachment B: Caresphere Flagging Guide

WBC IP Messages

FLAG/IP MESSAGE GENERATED	SUGGESTED ACTIONS	REASON FOR FLAG GENERATION
WBC Abnormal Scattergram	-Smear never been reviewed before or drastic difference in total WBC Count - Hold WBC/PLT/diff, result RBC parameters, and review smear -Smear reviewed recently, verify all results	-Clustering of cells in WNR or WDF channel is abnormal -Increased numbers of abnormal cells
NRBC Abnormal Scattergram	-Review smear to confirm NRBC count -Hold WBC/diff, result RBC/PLT parameters, and review smear	-Abnormal clustering between ghost/NRBC/WBC areas
Critical Neut# <0.5/Neutropenia	-First time <0.5 bil/L, smear must be scanned and sent for path review -Hold diff, result CBC parameters, and review smear -History of <0.5 bil/L, release results	-Numeric Trigger
Lymphopenia	-No action required	-Numeric Trigger
Lymphocytosis	-Hold diff, result CBC parameters, and review smear -Make albumin if needed	-Numeric Trigger
Monocytosis	- Smear must be scanned - Hold diff, result CBC parameters, and review smear -If persistent for 3 months, send for path review	-Numeric Trigger
Eosinophilia	-Review smear first time only - Hold diff, result CBC parameters, and review smear	-Numeric Trigger
Basophilia	-Review smear first time only - Hold diff, result CBC parameters, and review smear	-Numeric Trigger
Leukocytosis (WBC >20.0) CBCWD or CBCND	-Review smear first time only - Hold WBC/diff, result CBC parameters, and review smear	-Numeric Trigger

Critical WBC/Leukocytopenia	-Flag triggers when WBC < 2.0 bil/L -If WBC 0.4-1.9 bil/L first time, smear must be scanned -Hold diff, result CBC parameters, and review smear -Subsequent samples, release results -If WBC < 0.4 bil/L and no previous path review for neutropenia: -Keep CBCWD order, smear must be scanned -Hold diff, result CBC parameters, review smear, and send for path review -If WBC < 0.4 bil/L and previous path review for neutropenia: -Change order to CBCND, release results	-Numeric Trigger
NRBC Present	-No action required	-Numeric Trigger
IG present	-Review smear -Hold diff, result CBC parameters, and review smear	-Numeric Trigger
IG Asterisk Error/Immature Grans?	-Review history of differentials -Previous immature granulocytes reported and <10% immature granulocytes counted by analyzer = Result -No previously resulted immature granulocytes or >10% immature granulocytes: review smear -Hold diff, result CBC parameters, and review smear	-Unreliable analyzer results
Blasts/Abn Lympho?	-ALWAYS Review smear when WBC $\geq$ 0.4 bil/L -Hold diff, result CBC parameters, and review smear -If WBC < 0.4 bil/L, follow steps for critical WBC/leukocytopenia -If order is changed to a CBCND, cancel the second level review	-Abnormal clustering in the region for blasts and abnormal lymphocytes in the scattergram
Left Shift?	-No action required	-Band neutrophils possible
Atypical Lympho?/Abn Lympho?	-ALWAYS Review smear -Hold diff, result CBC parameters, review smear	-Significant clustering in the region for atypical lymphocytes -Will only flag when relative lymphocyte is > 35%
WNR and WDF Difference	-Ensure sample is rerun -If flag persists: -Hold WBC/diff, result CBC parameters, and review smear	-Ratio of the Total Nucleated Count in the WDF channel versus Total Nucleated Count in the WNR channel is too high or too low
Confirm Eos/Neut	-Review smear -Hold diff, result CBC parameters, and review smear	-Unreliable analyzer results

RBC/Retic IP Messages

FLAG/IP MESSAGE GENERATED	SUGGESTED ACTIONS	REASON FOR FLAG GENERATION
Retic Abnormal Scattergram	-Follow Retic ABN Scattergram workflow	-From retic channel -Excessive number of particles in the UPP area (RBC inclusions may be present: H-J bodies, pappenheimers, basophilic stippling, malaria)
RBC Abnormal Distribution	-ALWAYS check for a clot (add Caresphere internal comment) and review smear -Hold diff, result CBC parameters, and review smear -Review RBC histogram for dimorphic population	-Abnormal RBC histogram pattern -Abnormal morphology may be present: anisocytosis, multiple RBC populations, fragmented RBCs. Poikilocytosis, rouleaux, or RBC agglutination
Dimorphic Population	-ALWAYS Review smear -Hold diff, result CBC parameters, and review smear -Review RBC histogram for dimorphic population	-Multiple peaks on histogram -Usually after transfusion -Abnormal morphology may be present: anisocytosis, multiple RBC populations, fragmented RBCs. Poikilocytosis, rouleaux, or RBC agglutination
Reticulocytosis	-No action required	-Numeric Trigger
Anisocytosis	-No action required	-Numeric Trigger
Microcytosis CBCWD or CBCND	-Review smear first time only when MCV <60 - Hold diff, result CBC parameters, review smear, and send for path review -Repeat instances of MCV <60 can be released without review	-Numeric Trigger
Macrocytosis CBCWD or CBCND	-Review smear first time only when MCV >114 - Hold diff, result CBC parameters, review smear, and send for path review -Repeat instances of MCV >114 can be released without review	-Numeric Trigger
Hypochromia	-No action required	-Numeric Trigger
Anemia	-No action required	-Numeric Trigger
Critical Hgb/Hct	-Low critical hgb/hct = ALWAYS check for clot (add Caresphere internal comment) -High critical hgb/hct: no action required	-Numeric Trigger
Erythrocytosis	-No action required	-Numeric Trigger
RBC Agglutination?	-ALWAYS check for a clot (add Caresphere internal comment) -Troubleshoot for interfering substances (cold agglutinin will need to be warmed)	-Calculation and size comparison of RBC parameters
MCHC >38	-ALWAYS check for a clot (add Caresphere internal comment) -Troubleshoot for interfering substances (cold agglutinin will need to be warmed)	-MCHC >38 g/dL -Possible cold agglutinin, hemolysis, icteria, lipemia, lyse resistant erythrocytes, or spherocytes

Turbidity/Hgb Interference?	-ALWAYS check for a clot (add Caresphere internal comment) -Troubleshoot for interfering substances (cold agglutinin will need to be warmed)	-MCHC >38 g/dL -Possible cold agglutinin, hemolysis, icteria, lipemia, lyse resistant erythrocytes, or spherocytes
Iron Deficiency?	-ALWAYS check for a clot (add Caresphere internal comment)	-Calculation and size comparison of certain RBC items (MCV. RDW-CV)
Hgb Defect?	-ALWAYS check for a clot (add Caresphere internal comment)	- Calculation and size comparison of certain RBC items (MCV. RDW-CV)
Fragments?	-ALWAYS check for a clot (add Caresphere internal comment) -Hold PLT/diff, result WBC/RBC parameters, and review smear -HH and RETIC orders: no action required	-RBC size comparisons
MCHC <30	-Review smear first time only -Hold diff, result CBC parameters, and review smear -Repeat instances can be released without review -CBCND order: no action required	-Anemia could be causing hypochromia -Potentially some RBC morphology to report
High RDW	-Review smear first time only -Hold diff, result CBC parameters, and review smear -Repeat instances can be released without review	-Potentially some RBC morphology to report -Numeric Trigger
Suspect Sample	-ALWAYS check for a clot (add Caresphere internal comment) and rerun the sample -If flag persists, review smear -Hold diff, result CBC parameters, and review smear	-Based on an algorithm using RBC results and particle counts from the WNR scattergram
RBC and Retic Difference	-Ensure sample is rerun -If flag persists, review smear -Hold diff, result CBC parameters, and review smear	-Ratio of the RBC result from the RET channel and RBC result from the impedance channel is too high or too low

PLT IP Messages

FLAG/IP MESSAGE GENERATED	SUGGESTED ACTIONS	REASON FOR FLAG GENERATION
XN-10 PLT Abnormal Distribution	-No action required	-Interfering particles in the platelet histogram causing abnormal curve
XN-L PLT Abnormal Distribution	- ALWAYS check for a clot (add Caresphere internal comment) -Hold PLT/MPV/diff, result WBC/RBC/IPF parameters, and review smear -If true platelet clumps, #nm the MPV result	-Interfering particles in the platelet histogram causing abnormal curve
PLT Abnormal Scattergram	-ALWAYS check for a clot (add Caresphere internal comment) -Hold PLT/diff, result WBC/RBC parameters, and review smear	-WBC fragments are overlapping in the platelet area -Possible larger platelets
IPF Asterisk Error	-ALWAYS check for a clot (add Caresphere internal comment) -Hold PLT/diff, result WBC/RBC parameters, and review smear	-WBC fragments are overlapping in the platelet area -Possible larger platelets
Critical Platelet/ Thrombocytosis	-Review smear first time only when PLT > 1000 bil/L -Hold PLT/diff, result WBC/RBC parameters, review smear, and send for path review -Repeat instances of PLT > 1000 bil/L can be released without review	-Numeric Trigger
Critical Platelet/ Thrombocytopenia	-ALWAYS check for a clot (add Caresphere internal comment) -If first time <75, review smear - Hold PLT/diff, result WBC/RBC parameters, and review smear -If <75 and previously reviewed, result only after checking for a clot!	-Numeric Trigger
PLT Clumps?	-If flag on first run only: -ALWAYS check for clot (add Caresphere internal comment) -If flag on second run: -ALWAYS check for clot (add Caresphere internal comment) -Hold PLT/MPV/diff, result WBC/RBC/IPF parameters, and review smear -Only review smear when flag persists on the second run -If true platelet clumps, #nm the MPV result	-Abnormal clustering in the WNR, WDF, or PLT-F scattergrams
PLT and PLTF Difference	-Ensure sample is rerun -If flag persists, review smear	-Ratio of the PLT-F result to PLT result from the impedance channel is too high

	-Hold PLT/diff, result CBC parameters, and review smear	