High MCHC (≥ 37.5)

When you have a sample with a high MCHC (≥ 37.5), please perform ALL of the following steps, as a sample may have more than one reason for the high MCHC:

Step 1: Perform a manual spun HCT

A. Check plasma color
   1) Is the sample Lipemic or Icteric?
      Yes: Cancel HGB, MCH, MCHC with corresponding comment (SLIP or SCOL)
   2) Is the sample hemolyzed?
      Yes: Cancel RBC, HCT, MCV, MCH, MCHC with corresponding comment (SHMR).
B. Confirm HCT (for lipemic or icteric samples): Spun HCT must match the instrument HCT within 4% and each HCT tube within 2% of each other. If they match, report out manual HCT with "Spun HCT" comment.

Step 2: Warm the Specimen

A. Place the tube in the heatblock, set a timer for 20-30 minutes
B. Place slides on the slide warmer
C. Remix and rerun the sample while warm
   1) Mix the tube and push the slide for Step 4 using the warmed slides
   2) If WARM run has a MCHC <37.5 and the RBC has increased, report that run with the comment , "Increase in RBC on warming to 37 degrees C suggests Cold Agglutinin"
   3) If WARM run has a MCHC ≥ 37.5, push a smear to check RBC morphology

Step 3: Check the electrolytes

A. Critically low electrolytes can cause a falsely elevated MCHC
   1) If sodium or chloride is critically low: Cancel the MCV, MCH and MCHC with the comment "Unable to report indices due to electrolyte imbalance." The manual spun HCT should also be reported with the comment, "Spun HCT"
   2) If electrolytes are normal, move on to step 4

Step 4: Push Smear

A. Smear should be pushed while the sample is still warm (see Step 2)
B. Stain smear per usual protocol.
C. The smear should be reviewed for sickle cells, spherocytes, or agglutination
   1) If sickle cells or spherocytes are seen: internally comment the morphology seen, report results as is
   2) If agglutination is present: Cancel the RBC, MCV, MCH, MCHC with the comment "RBC Agglutinin present. Unable to report RBC and indices." The manually spun HCT should also be reported with the comment, "Spun HCT"