



**DIAGNOSTIC ACCREDITATION PROGRAM**  
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# Proficiency Testing Investigation: Sources of Error

The sources of error and internal review worksheets are for internal use. Submission to the DAP is optional.

<b>SOURCES OF ERROR</b>	
<b>Method/equipment</b>	
<input type="checkbox"/> Calibrator – incorrect calibrator value/calibrator variability/calibrator problem <input type="checkbox"/> Reagents – imprecision between reagent lot numbers/problem in manufacture, including lot number problems/unstable <input type="checkbox"/> Method – imprecision/low-end sensitivity problem <input type="checkbox"/> Method – bias <input type="checkbox"/> Incorrect identification of organism by system database <input type="checkbox"/> Failure of automated system to generate correct susceptibility test result <input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 30px; margin-top: 5px;"></div>	<input type="checkbox"/> Poor staining leading to incorrect results <input type="checkbox"/> Inappropriate incubation conditions <input type="checkbox"/> Instrument defect /carryover from previous sample/ repair or PM required <input type="checkbox"/> Instrument/reagent vendor-identified reagent/calibrator problem <input type="checkbox"/> Instrument/reagent vendor recall affecting patients/ PT <input type="checkbox"/> Instrument computer/software problem <input type="checkbox"/> LIS software problem <input type="checkbox"/> LIS rounds PT results inappropriately
<b>Technical</b>	
<input type="checkbox"/> Sample not assayed/missed reporting deadline <input type="checkbox"/> Inappropriate handling of sample (including reconstitution, dilution, mixing, pipetting, storage) <input type="checkbox"/> Inappropriate handling of standards or reagents (including reconstitution, dilution, mixing, pipetting, storage) <input type="checkbox"/> Inadequate instrument or equipment maintenance/expired materials used <input type="checkbox"/> Technique – poor technique <input type="checkbox"/> Sample mix-up <input type="checkbox"/> Procedure – written procedure not followed <input type="checkbox"/> Procedure – procedure requires revision <input type="checkbox"/> Procedure – poor validation of method <input type="checkbox"/> Misinterpretation of result/cell/organism morphology <input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 30px; margin-top: 5px;"></div>	<input type="checkbox"/> Inappropriate interpretive criteria used <input type="checkbox"/> Failure to report/interpret mixed culture <input type="checkbox"/> Inappropriate isolation techniques <input type="checkbox"/> Incorrect inoculum used <input type="checkbox"/> Run accepted in non-linear range <input type="checkbox"/> Internal QC – limits set too wide/QC program inadequate <input type="checkbox"/> Internal QC – material not assayed at relevant analyte concentration/inappropriate material <input type="checkbox"/> Internal QC – shift recognized but no action taken <input type="checkbox"/> Run accepted even though internal QC was out of range or not identified as out of range prior to performing assay <input type="checkbox"/> QC material outdated or improperly stored

# Proficiency Testing Investigation: Sources of Error *continued*

<b>SOURCES OF ERROR</b>	
<b>PT material</b>	
<input type="checkbox"/> Inappropriate shipping (including late shipment/leakage in transit/breakage) <input type="checkbox"/> Sample contamination/Hemolysis <input type="checkbox"/> Unsuitable PT material <input type="checkbox"/> Unstable PT material <input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>	<input type="checkbox"/> Presence of interfering substances <input type="checkbox"/> Matrix effect incompatible with method <input type="checkbox"/> Survey material bias <input type="checkbox"/> Poor image quality for morphological assessment
<b>PT provider evaluation</b>	
<input type="checkbox"/> Peer group inappropriate <input type="checkbox"/> No comparable peer group <input type="checkbox"/> Peer group size inadequate/too small <input type="checkbox"/> Target value inappropriate <input type="checkbox"/> No participant consensus <input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>	<input type="checkbox"/> Incorrect data entry by provider <input type="checkbox"/> Incorrect method assigned by provider <input type="checkbox"/> Narrow statistical range – not clinically significant <input type="checkbox"/> Vendor does not accept “<” or “>” results
<b>Clerical errors</b>	
<input type="checkbox"/> Transcription error <input type="checkbox"/> Incorrect reporting units/misplaced decimal <input type="checkbox"/> “>” or “<” used inappropriately <input type="checkbox"/> Calculation/conversion/rounding error <input type="checkbox"/> Mislabeled vial or slide <input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>	<input type="checkbox"/> Incorrect method/instrument/reagent code/analyte/form <input type="checkbox"/> Computer keying error/Website data entry error <input type="checkbox"/> Electronic transmission/faxed results did not go through <input type="checkbox"/> Results not “approved” prior to submission
<b>Random or unknown</b>	
<input type="checkbox"/> Investigation yields no satisfactory explanation and unable to repeat erroneous result	

<b>TRANSFUSION MEDICINE</b>	
<b>General sources of error</b>	
<input type="checkbox"/> Test result misinterpreted – staff lacks experience/needs training <input type="checkbox"/> Test result misinterpreted – written procedure inadequate <input type="checkbox"/> Test result misinterpreted – background in tube test not examined <input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>	<input type="checkbox"/> Test result misinterpreted – clinical information missing <input type="checkbox"/> Written procedures not followed <input type="checkbox"/> Additional testing not performed <input type="checkbox"/> Results not transcribed correctly onto PT form <input type="checkbox"/> Did not check that patient identification/ID on sample and paperwork matched

Proficiency Testing Investigation: Sources of Error *continued*

<b>TRANSFUSION MEDICINE</b>	
<b>Crossmatch</b>	
<input type="checkbox"/> Incorrect antiglobulin crossmatch	<input type="checkbox"/> Incorrect interpretation of results
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	
<b>Phenotyping</b>	
<input type="checkbox"/> Test performed on recently transfused patient	<input type="checkbox"/> Incorrect result reported
<input type="checkbox"/> Test not performed on unit to be issued for patient with Antibody present	
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	
<b>ABO</b>	
<input type="checkbox"/> Mixed field agglutination not detected	<input type="checkbox"/> Weaker than expected/unexpected reaction reported with no further action or comment
<input type="checkbox"/> Mixed field agglutination reported that was not present	<input type="checkbox"/> Incorrect ABO group
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	
<b>Direct antiglobulin test</b>	
<input type="checkbox"/> Incorrect reagent/method used	<input type="checkbox"/> Incorrect result reported
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	
<b>Rh</b>	
<input type="checkbox"/> Mixed field agglutination not detected	<input type="checkbox"/> Rh interpretation made in the presence of mixed field agglutination
<input type="checkbox"/> Incorrect results reported for anti-D and/or Rh control	<input type="checkbox"/> Incorrect Rh interpretation
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	
<b>Antibody detection</b>	
<input type="checkbox"/> Antibody detected that was not present	
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	
<b>Antibody identification</b>	
<input type="checkbox"/> Antibody incorrectly identified	<input type="checkbox"/> Antibody identification not performed
<input type="checkbox"/> Other (specify): <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	

Proficiency Testing Investigation: Sources of Error *continued*

<b>INTERNAL REVIEW</b>				
<b>Internal review</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments</b> <i>If you require additional space, please attach a separate electronic document.</i>
Proficiency testing material was received in satisfactory condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
The appropriate sample was tested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Procedures for sample preparation were followed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
The appropriate method was used for analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
The method performed according to documented procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Appropriate reagents and controls were used	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Equipment was operated according to documented procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Equipment has been appropriately maintained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
QC was acceptable at the time of testing PT samples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
PT report was examined for discrepancies prior to submitting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Results were interpreted appropriately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Results were correctly coded for instrument/method /reagent/units	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Results were submitted prior to due date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Repeat testing on properly stored PT sample produces similar results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There is a bias/trend leading to failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Proficiency Testing Investigation: Sources of Error *continued*

<b>TRANSFUSION MEDICINE</b>				
This problem has occurred previously with PT samples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Data is consistent with previous PT distributions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Recalibration of the method was performed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
A reference or secondary method comparison was performed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Equipment/reagent/kit manufacturer was consulted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
PT program results compared to appropriate method/ peer group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There was a low consensus for the analyte/sample	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There were <10 participants in the evaluation group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
PT program provider was consulted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Patient results were acceptable at the time of PT testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Laboratory director has been advised of all PT result deficiencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	