**Purpose**

To provide a guide for resulting testing performed manually in Blood Order Processing (BOP)

**Policy**

MLS shall follow these grids for resulting manual testing.

|  |  |  |  |
| --- | --- | --- | --- |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Type and Screen (TSCR),****Type and Screen Extend (TSCREX)** | **UO** | Units Ordered | * Defaults to none
* Can be updated for add-on units in the order
 |
| **HXCK** | Patient History Check | * H—Patient history found applies as follows:
* Blood type in the system
* Antibody Screen in the system
* Any information in the BAD file
* Q—No patient history found
 |
| **PI** | Physician Instructions | * Semicolon (;)
* Enter free text or add appropriate code.

|  |  |
| --- | --- |
| IRR | Irradiated or Pathogen Reduced |
| LKR | Leukoreduced |
| WS | Washed |
| WRBC | Washed RBCs |
| RCWS | Red Cells Washed |
| RCWSI | Red Cells Washed Irradiated |
| RCWSL | Red Cells Washed Leukoreduced |
| RCWSIL | Red Cells Washed Irradiated Leukoreduced |

* Free text if code isn’t available
 |
| **ABR** | ABO/Rh (D) | * Use Reaction Grid found under **Blood Type** for results Interpretation
* A for Group A
* B for Group B
* L for Group AB
* O for Group O
* P for Rh Positive
* N for Rh Negative
* ;NTD for No Type Determined (for ABO)
* ;UNKN for Unknown (use for Rh only)
 |
| **AS** | Antibody Screen | * Use Reaction Grid found under **Antibody Screen** for results Interpretation
* N for Negative
* P for Positive
 |
| **EXX** | Crossmatch Expiration Date | * Defaults to 3 day outdate from specimen draw date. Extensions are allowed for qualifying Preadmission orders
 |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Type and Screen (TSCR)****Type and Screen Extend (TSCREX)** | **Crossmatch****Electronic** | XM (crossmatch result) | * Leave blank
* SAVE
* Eligibility Report is viewable; Click OK
 |
| TS (Transfusion Status) |
| **Crossmatch****Immediate Spin** | XM (crossmatch result) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | 0 | ND | ND | ND |

* Interpretation : ~ **for Compatible**
* ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | **\*** | ND | ND | ND |

* **\*** Any agglutination present
* Interpretation: **$ for Incompatible**
* ND = Not done
 |
| TS (Transfusion status) | * “ **[** “ for OK
* “ **]** “ for Not OK
 |
| **Crossmatch****AHG** | LISS |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | ND | 0 | 0 | ≥1 |

* Interpretation: **C for Compatible**
* ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | ND | **\*** | **\*** | ND |

* **\*** Any agglutination present at either or both phases
* Interpretation: **I for Incompatible**
* ND = Not done
 |
| TS (Transfusion status) | * “ **[** “ for OK
* “ **]** “ for Not OK
 |
| **Crossmatch AHG** | PeG |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | 0 | ND | 0 | ≥1 |

* Interpretation: **! for Compatible**
* ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | **\*** | ND | **\*** | ND |

* **\*** Any agglutination present at either or both phases
* Interpretation: **% for Incompatible**
* ND = Not done
 |
| TS (Transfusion status) | * “ **[** “ for OK
* “ **]** “ for Not OK
 |
| **Crossmatch AHG** | PrewarmPrewarm (continued) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | ND | ND | 0 | ≥1 |

* Interpretation: **@ for Compatible**
* ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | ND | ND | **\*** | ND |

* **\*** Any agglutination present
* Interpretation: **^ for Incompatible**
* ND = Not done
 |
| TS (Transfusion status) | * “ **[** “ for OK
* “ **]** “ for Not OK
 |
| **Crossmatch AHG** | Saline |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | 0 | 0 | 0 | ≥1 |

* Interpretation: # **for Compatible**
* ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | XIS | XINC | XAHG | XCC |
| Unit # | \* | \* | **\*** | ND |

* **\*** Any agglutination present at any or all phases
* Interpretation: & **for Incompatible**
* ND = Not done
 |
| TS (Transfusion status) | * “ **[** “ for OK
* “ **]** “ for Not OK
 |
| **Unit Test Add-on** | UR (Unit Tag Reprint) | * Transfusion Tag will reprint for the unit to which test UR is added.
 |
| CM (Unit Tag comment) | * Attach comments to Transfusion Tag.
* Used to indicate split RBC
* Used to indicate Uncrossmatched RBC
* See table C for codes
 |
| AO (Unit Antigen typing | * Enter using appropriate AG code
* Limited print on tag to 3 lines
* Add additional lines via CM (unit comments)
 |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Transfuse Products:*** **TRBC**
* **TFFP**
* **TPLT**
* **TCRY**
* **TRBCP**
* **TFFPP**
* **TPLTP**
* **TCRYP**
* **TFFPN**
* **TPLTN**
* **TCRYN**
* **TWHBLD**
* **TFFPX**
* **TGRAN**
* **TGRANP**
 | **UO** | Units Ordered | * Indicates number of units ordered.
* If patient in non-CPOE area, units can be updated for additional orders of same product type
 |
| **HXCK** | Patient History Check | * H-Patient history found
* Q-No patient history found
 |
| **PI** | Physician Instructions | * ( **;** ) and enter free text.
* Defaults to none unless specifically ordered in Epic.

|  |  |
| --- | --- |
| IRR | Irradiated or Pathogen Reduced |
| LKR | Leukoreduced |
| WS | Washed |

 |
| **PRIOR** | Transfusion Priority | * Emergency Uncrossmatched
* STAT
* Routine
* Planned Transfusion
 |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Direct Antiglobulin Test (DAT)** | **HXCK** | Patient History Check | * H-Patient history found
* Q-No patient history found
 |
| **DBS** | DAT, Broad Spectrum Coombs |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | DISBS | RTBS | DCCBS | DGEL |
| Pt | 0 | ND | ≥ 1 | ND |
| C | 0 | ND | ND | ND |

Interpretation: **N for Negative**ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | DISBS | RTBS | DCCBS | DGEL |
| Pt | **\*** | ND | ND | ND |
| C | 0 | ND | ND | ND |

**\*** Any agglutination presentInterpretation: **P for Positive**ND = Not done

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | DISBS | RTBS | DCCBS | DGEL |
| Pt | **\*** | ND | ND | ND |
| C | **\*** | ND | ND | ND |

\* Any agglutination Present;ICLR for Inconclusive – Needs More Investigation |
| **Add on if DBS is POS** | **DIG** | DAT, Anti-IgG Coombs |

|  |  |  |  |
| --- | --- | --- | --- |
|  | DIGG | DCC | DGEL |
| Pt | 0 | ≥ 1 | ND |
| C | 0 | ND | ND |

Interpretation: **N for Negative**

|  |  |  |  |
| --- | --- | --- | --- |
|  | DIGG | DCC | DGEL |
| Pt | **\*** | ND | ND |
| C | 0 | ND | ND |

**\*** Any agglutination presentInterpretation: **P for Positive**ND = Not done |
| **DCD** | DAT, Complement |

|  |  |  |  |
| --- | --- | --- | --- |
|  | IS | RT | DCC |
| Pt | 0 | 0 | ≥ 1 |
| C | 0 | 0 | ND |

Interpretation: **N for Negative**ND = Not done

|  |  |  |  |
| --- | --- | --- | --- |
|  | IS | RT | DCC |
| Pt | 0**/\*** | **\*/**ND | ND |
| C | 0 | 0 | ND |

**\*** Any agglutination presentInterpretation: **P for Positive**ND = Not done |

|  |  |  |  |
| --- | --- | --- | --- |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Blood Type: ABRH****ABRH2****BBRH** | **HXCK** | Patient History Check | * H-Patient history found
* Q-Patient history not found
 |
| **ABR** | ABO/Rh**Note:**Agglutination strength is recordable as:* 0,1,2,3,4+
* Grade plus M for Mixed Field (i.e. 4M, etc)
* See table A
* H for Hemolysis
* 0R for negative after saline replacement
* Result what is seen
* Resolve per SOP for MF reactions
* Anti-A, Anti-B, and reverse results of wk→1+, hold interpretation until discrepancy is resolved
* Rh result of wk→1+, hold Interpretation until Weak D testing complete.

See Neonatal Blood Type for Grid resulting |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | 0 | ≥ 1 | ND | 0 | ≥ 1 |

Interpretation: **A Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | 0 | 0 | ND | 0 | ≥ 1 |

Interpretation: **A Neg**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | 0 | ≥ 1 | ≥ 1 | ND | ≥ 1 | 0 |

Interpretation: **B Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | A | B | Rh | C | AC | BC |
| BT | 0 | ≥ 1 | 0 | ND | ≥ 1 | 0 |

Interpretation: **B Neg**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | 0 | 0 | ≥ 1 | ND | ≥ 1 | ≥ 1 |

Interpretation: **O Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | B |
| BT | 0 | 0 | 0 | ND | ≥ 1 | ≥ 1 |

Interpretation: **O Neg**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | ≥ 1 | ≥ 1 | 0 | 0 | 0 |

Interpretation: **AB Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | ≥ 1 | 0 | ND | 0 | 0 |

Interpretation: **AB Neg**ND = Not done |
| **ABRH3** | **ABR** | ABO/RhSee above for resulting grid | * Non billable
* Does not display result in ORCA/EPIC
* Only to be used to retype the same sample due to cancellation
* Order using collection and receipt time for sample used to test
* Enter ACCN of the sample used
 |
| **BBCS** | Suppressed Blood Bank Comment |

|  |  |  |  |
| --- | --- | --- | --- |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Neonatal Blood Type (TSCR)** | **HXCK** | Patient History check: | * H-Patient history found
* Q-Patient history not found
 |
| **ABR** | ABO/Rh**Note:**Agglutination strength is recordable as:* 0,1,2,3,4+
* Grade plus M for Mixed Field, (i.e. 4M, etc)
* See Table A
* I for Infant Not Tested
* H for Hemolysis
* Result what is seen
* Resolve per SOP for MF reactions
* Rh result of wk→ 1+, hold interpretation until Weak D is complete
* Anti-A or Anti-B results of wk→1+, hold interpretation until discrepancy is resolved
 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | 0 | ≥ 1 | ND | INT | INT |

Interpretation: **A Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | 0 | 0 | ND | INT | INT |

Interpretation: **A Neg**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | 0 | ≥ 1 | ≥ 1 | ND | INT | INT |

Interpretation: **B Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | 0 | ≥ 1 | 0 | ND | INT | INT |

Interpretation: **B Neg**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | 0 | 0 | ≥ 1 | ND | INT | INT |

Interpretation: **O Pos**ND = Not done |
|

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | B |
| BT | 0 | 0 | 0 | ND | INT | INT |

Interpretation: **O Neg**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | **C** | AC | BC |
| BT | ≥ 1 | ≥ 1 | ≥ 1 | **0** | INT | INT |

Interpretation: **AB Pos**ND = Not done

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | Rh | C | AC | BC |
| BT | ≥ 1 | ≥ 1 | 0 | ND | INT | INT |

Interpretation: **AB Neg**ND = Not done |
| **Antibody Screen****(ABSCR)** | **HXCK** | Patient History check | * H-Patient history found
* Q-No patient history found
 |
| **AS** | Antibody Screen, LISS |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 37 | AHG | CC |
| SC1/SC2/SC3 | 0 | 0 | ≥1 |

Interpretation: **N for Negative**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 37 | AHG | CC |
| SC1/SC2/SC3 | **\*** | **\*** | ND |

**\***  Any Agglutination in any of the cellsND = Not doneInterpretation: **P for Positive** |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **Antibody Screen****(ABSCR)** | **HXCK** | Patient History check | * H-Patient history found
* Q-No patient history found
 |
| **AS** | Antibody Screen, TANGOFor use when unable to transmit results across SQ interface |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 37 | AHG | CC |
| SC1/SC2/SC3 | ND | 0 | ND |

Interpretation: **N for Negative**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 37 | AHG | CC |
| SC1/SC2/SC3 | ND | **\*** | ND |

**\***  Any Agglutination in any of the cellsND = Not doneInterpretation: **P for Positive*** Add BBCS “Testing Performed on TANGO”
 |
| **ER** | **Emergency Release** | UO (Units Ordered)Use when there is no sample available, or for RBC transfused by Medic One or ALNW | * Allocate Universal blood type to order and issue
* TS **“ [ “** for OK
* TS **“ ] “** for Not OK
* CM-Add comment “Emergency Release”
* For non ALNW or Medic One accessions, add BBC to explain why sample was not received
 |
| **TNRBC** | **Transfuse Neonatal Red Cells** | UO (Units Ordered)Patient History Check | * If neonate is Rh positive, issue group O, Rh positive or group O, Rh negative RBCs
* If neonate is Rh negative, issue only group O, Rh negative
* TS **“ [ “** for OK
* TS **“ ] “** for Not OK
 |
| **ELUT** | **HXCK** | Patient History Check | * H-Patient history found
* Q-No patient history found
 |
| **ELU** | Antibody Eluted | * Enter Results
* Results can been seen under comments in BAD
* If appropriate; when AB code entered it can be seen under AB/AG in BAD
 |
| **Transfusion Reaction Work-up (TRRX)** | **HXCK** | Patient History Check | * H-Patient history found
* Q-No patient history found
 |
| **UNO** | Unit Number | * Indicate component type and unit number
* Use **“ ; “** and free text
 |
| **CLCK** | Clerical Check | * C for CLCKP (Clerical check passed)
* F for CLCKF (Clerical check failed)
 |
| **TXPATH** | Pathology consult | * Do not result until final pathology report
* Result with consulting Medical Director initials
* JRH = Dr Hess
* MBP = Dr Pagano
* HTC = Dr Tsang
* Can be viewed in ORCA as “See final pathology report”
 |
| **TXRINT** | Biovigilance designation | * Do not result until final pathology report
* Result with Biovigilance designation
 |

**Addable Tests:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **TSCR****TSCREX****ABSCR****PREN****DAT** | **ABI** | Antibody ID(Patient sample) | * Enter the code for the specific antibody or “ **;** “ and free text the antibody results: i.e. Anti-Bga
* Free text will be seen in Comments.
* Codes will be seen in Antigen/Antibodies in BAD file.
 |
| **ABID 2** | Billing Code used for subsequent panels used to identify the antibody(s) | * Use ABID 2 for billing a 2nd panel
* For billing a 3rd panel:
* Tab to 2nd line of comment.
* Result as **“;2”**
 |
| **AGI** | Patient Antigen Type | * Enter the code for the specific antigen or **“** **;** **“** and free text the antigen typing results.
* Antigen typing from outside facilities is entered directly into the BAD file
 |
| **ABPATH** | Pathology Consult | * Add only for new antibodies identified.
* Result with consulting Medical Director initials listed under TXPATH
 |
| **PRPATH** | Pathology Consult, prenatal sample | * Add after consult has been performed
* Result with consulting Medical Director initials listed under TXPATH
 |
| **ELU** | Eluate result | * Eluate performed and resulted
 |
| **TTR** | Titer  | * See below for additional titer tests
 |
| * **DBS**
* **DIG**
* **DCD**
 | DAT, Broad spectrum, IgG, C3 | * Reaction result grid same as DAT grids
 |

|  |  |  |  |
| --- | --- | --- | --- |
| **TRRX** | * **DBS**
* **DIG**
* **DCD**
 | DAT, Broad spectrum, IgG, C3 | * Reaction result grid same as DAT grids
 |
| **PRETX** | Pre-transfusion Sample | * Pre-transfusion sample Accession number
 |
| **PRESP** | Pre-transfusion Sample appearance | * E for HEM (Hemolysis present)
* Y for HEMNO (No visible hemolysis)
 |
| **POSTSP** | Post Transfusion Sample Appearance | * E for HEM (Hemolysis present)
* Y for HEMNO (No visible hemolysis)
 |
| **ABID** | Multiple addable tests | * Add necessary tests related to antibody ID; Eluate, DAT, etc.
 |
| **ABR** | ABO/Rh | * Reaction result grid same as for ABO/Rh
 |
| **AS** | Antibody Screen | * Reaction result grid same as for ABSCR
 |
| **BBC****(microbiology)** | Blood Bank Comment | * Approved/Not approved to receive further blood products
* Submitted to Microbiology
* Gram stain results \_\_\_\_\_\_\_
* Culture results \_\_\_\_\_\_\_\_\_\_
 |

**Addable Tests (continued):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Battery** | **Tests** | **Description** | **Result Options** |
| **ABRH****BBRH****PREN****TSCR****TSCREX****TRRX****ABRH2****ABRH3** | **DU** | Weak D testBAD file:WKDP = weak D positiveWKDN = Weak D negative |

|  |  |  |
| --- | --- | --- |
|  | DAHG | DUCC |
| PT | 0 | ≥1 |
| C | 0 | ≥1 |

Interpretation: **N for Negative**

|  |  |  |
| --- | --- | --- |
|  | DAHG | DUCC |
| PT | **\*** | ND |
| C | 0 | ≥1 |

**\*** Any agglutination presentInterpretation: **P for Positive**

|  |  |  |
| --- | --- | --- |
|  | DAHG | DUCC |
| PT | **\*** | ND |
| C | **\*** | ND |

\* Any agglutination Present;ICLR for Inconclusive – Needs More InvestigationAdd BAD file comment for patient to receive Rh Negative red cells if meet criteria. |
| **TSCR****PREN****ABSCR** | * **TTR**
* **TTRRP**
 | Titration | * Add for titrations
* Add for Repeat titration of frozen samples
 |
| **TTR2** | Billing Code used for subsequent titers performed on current sample | * Use ABID 2 for billing a 2nd titer
* For billing a 3rd titer:
* Tab to 2nd line of comment.
* Result as **“;2”**
 |
| **All Batteries** | **BBC** | Blood Bank Comment | * **“ ; “** Free text comment
* Is attached to the Accession number for inquiry
* Is visible to hospital/clinic staff
 |
| **BBCS** | Suppressed Blood Bank Comment | * **“ ; “** Free text comment
* Is attached to the Accession number for SQ only
* Is only visible in Sunquest
 |
| **PB** | Problem | * Writes to the BAD file
* Examples: IRR, LKR, “attributes reviewed”, etc.
 |
| **Rh Negative****PREN****or****ABRH/BBRH from pregnant pt** | **BBC** | Blood Bank Comment | * RHNMH
* If from a patient with vaginal bleed, perform read-back with provider
 |
| **PRPATH** | Prenatal Consult | * Result with consulting Medical Director initials listed under TXPATH
 |

**Table A: Reaction grading defined keys**





**Table B: Interpretation result defined keys**





**Table C: CM codes for unit tags**

|  |  |  |
| --- | --- | --- |
| **SQ Code** | **Translation** | **Uses** |
| EMR | Emergency Release, UNCROSSMATCHED | Uncrossmatched product* Used on all uncrossmatched products
* Used on ER Battery components
* Used on plasma, platelets, and cryo post transfusion reconciliation
 |
| QAPTXM | Post transfusion Crossmatch | Used for RBCs during post transfusion reconciliation (remove EMR if entered previously) |
| IXMAPP | Incompatible approved by provider | Incompatible products approved for use by provider, medical director, or resident.* Example: due to WARM/COLD antibodies
 |
| RHPAPP | Rh positive approved by provider | Rh positive product given to Rh negative patient |
| Antigen codes | See “Guidelines for Antibody Identification” SOP | Additional antigen typing that doesn’t show up under “Unit Antigens” section of transfusion tag |

**References**

Blood Bank User Guide, Misys Laboratories, current version