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Document Contact Kelly Sartor: Mgr, Division Laboratory
Area Laboratory-Blood Bank
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ORTHO VISION Analyzer Manual Card Review

Document Type: Policy

I. PURPOSE AND OBJECTIVE:

The ORTHO VISION™ has been configured to send gel cards to the service rack to help the technologists identify those gel cards that need to be reviewed before results are sent across the interface to the Blood Bank information system (BBIS). The purpose of this document is to provide guidelines for extracting, identifying, and managing gel cards that are sent to the Manual Review Rack by the ORTHO VISION™.

II. POLICY STATEMENT:

Any gel cards sent to the Manual Review Rack by the ORTHO VISION™ must be reviewed before results are sent across the interface to the Blood Bank computer system. The ORTHO VISION™ sends gel cards to the Manual Review Rack for several reasons, including but not limited to:

- A. ABO/Rh cards with a 1+ or 2+ graded reaction in the forward ABO typing, or a 1+ graded reaction in the reverse typing.
- B. ABO/Rh cards with a 1+, 2+, or 3+ graded reaction in the Rh(D) typing.
- C. Antibody screen (ABSG) cards with any positive graded reaction.
- D. Any gel card with a well discrepancy which are not interpreted by the ORTHO VISION™.
- E. Any gel card with a positive crossmatch of any strength.
- F. All cards will be sent to the manual review rack if a required maintenance is due but has not been performed.
- G. Gel cards that the ORTHO VISION™ cannot read; the *Card Reader Error* warning message appears.
- H. All panel cards.

III. DEFINITIONS / ACRONYMS:

- A. **LIS:** Laboratory information system.
- B. **BBIS:** Blood Bank information system
- C. **MT Lead:** Medical Technologist Lead.
- D. **Manual Review Rack:** Also referred to by the ORTHO VISION™ as the service rack.

IV. INSTRUCTIONS:

A. **Technologist Must Review / Modify Graded Reactions of all Gel Cards Sent to the Manual Review Rack.**

1. All gel cards that are sent to the Manual Review rack shall be reviewed by a technologist; the gel card itself must be visually reviewed.
 - a. Reactions are graded as described in Transfusion Medicine policy, [Reading, Grading, and Recording Test Reactions](#).
 - b. If the technologist agrees with the graded reaction they must review and accept the result before it is 'accepted' on the Vision and sent automatically to the BBIS.
 - c. If the technologist grades a reaction differently than the ORTHO VISION™, then they must modify the graded reaction in the ORTHO VISION™ accordingly before the results are sent across the interface to SafeTrace.
 - i. Reaction grading can only be modified **once** on the ORTHO VISION™. It is unable to be modified again after accepting the result. **If additional modification is required, you must modify the reaction grading in the Blood Bank computer system with a test correction or prior to finalizing results sent to Interface Manager in the BBIS.**

B. **Valid Graded Reactions and Interpretations.**

1. Graded ABO and Rh(D) reactions must be of specific strengths to be considered valid by blood bank procedures in order to interpret the results.

Note: In some instances the ORTHO VISION™, Blood Bank Information system, and the Blood Bank procedures interpret results differently. All tests must be interpreted from the actual gel card based on the Blood Bank procedures, not necessarily how the Blood Bank computer system or the ORTHO VISION™ interprets them.

C. **Gel Cards with Positive Crossmatch Results.**

1. The ORTHO VISION™ is configured to send gel cards with any positive crossmatch reaction strength to the Manual Review Rack. The gel cards that are sent to the service rack and the graded reactions must be reviewed by a medical technologist.
 - a. If the technologist grades a reaction differently than the ORTHO VISION™ then the technologist must modify the graded reaction in the ORTHO VISION™ accordingly before the results are sent across the interface to the BBIS.

Refer to Transfusion Medicine policy, [Investigation of Incompatible Crossmatches](#).

D. ABO/Rh Gel Cards that the ORTHO VISION™ Interprets as NRD (No Results Determined).

ABO Example						
Anti-A	Anti-B	Anti-D	Control	A Cells	B Cells	Interpretation
0	0	4+	0	1+	0	? Pos
Rh(D) Example						
Anti-A	Anti-B	Anti-D	Control	A Cells	B Cells	Interpretation
0	0	4+	1+	4+	4+	0 ?

1. After the technologist extracts the gel card from the Manual Review Rack, the technologist will review the gel cards and, if applicable, modify and accept the results.
2. The technologist will attempt to resolve the ABO/Rh discrepancy as described in Transfusion Medicine policy, [Resolution of ABO and Rh Discrepancies](#) and interpret the results according to the policy.
3. To result the discrepancy:
 - a. Print a copy of the results on ORTHO VISION™ by Show Order Report.
 - b. Obtain and complete an ABO/Rh Discrepancy Form.
 - c. Access and finalize the results in Interface Manager in the BBIS following the policy.
 - d. Add-on and result the ABO Discrepancy (ABODIS) test, when indicated.
 - e. Add applicable Special Requirements to patient profile for unresolved ABO/Rh discrepancies.
 - f. The printed copy of results from the ORTHO VISION™ will be attached to the ABO/Rh Discrepancy Form.

E. ABO/Rh Gel Cards with Graded Reactions that are Interpreted by the ORTHO VISION™, but that should not be Auto-Verified Based on Blood Bank Procedures.

ABO Example						
Anti-A	Anti-B	Anti-D	Control	A Cells	B Cells	Interpretation
1+	0	4+	0	0	1+	A Pos
Rh(D) Example (see note below)*						
Anti-A	Anti-B	Anti-D	Control	A Cells	B Cells	Interpretation
0	0	2+	0	4+	4+	0 Pos

1. Although considered invalid by the Blood Bank procedures, these results are interpreted by the ORTHO VISION™. The results will be sent to Interface Manager in the BBIS. The technologist will:
 - a. Modify reaction grading(s), if necessary, and accept the results on the ORTHO VISION™.
 - b. Print a copy of the results on ORTHO VISION™ by Show Order Report.
 - c. Investigate the discrepancy as described in Transfusion Medicine policy, [Resolution of ABO and Rh Discrepancies](#).
 - d. Obtain and complete an ABO/Rh Discrepancy Form.

- e. Access and finalize the results in Interface Manager in the BBIS following the policy.
 - f. Add-on and result the ABO Discrepancy (ABODIS) test, when indicated.
 - g. Add applicable Special Requirements to patient profile for unresolved ABO/Rh discrepancies.
 - h. The printed copy of results from the ORTHO VISION™ will be attached to the ABO/Rh Discrepancy Form.
2. Note: The Rh(D) Example, above:
- a. Based on Transfusion Medicine policy, [Resolution of ABO and Rh Discrepancies](#), the 2+ graded reaction for the Rh(D) is not a valid graded reaction. The ORTHO VISION™ and BBIS will interpret this result as Rh pos. This Rh discrepancy must be investigated as described in Transfusion Medicine policies, [Resolution of ABO and Rh Discrepancies](#) and [Weak D Testing](#), when indicated. Although the most likely cause for this 2+ reaction is that the patient is weak D or partial D positive, there are many other potential causes. Examples of other causes include recent Rh(D) dissimilar RBC transfusions, a bone marrow transplant, a mistyped sample, and a wrong blood in tube event (WBIT).

F. Gel Cards with Mixed-Field Reactions.

1. Mixed-field reactions are referred to as MF reactions by the ORTHO VISION™. MF reactions are considered a well discrepancy; however they can still be interfaced into the Blood Bank computer system. MF reactions may occur in patients who have been recently transfused; refer to Transfusion Medicine policy, [Resolution of ABO and Rh Discrepancies](#). After the technologist extracts the gel card from the Manual Review Rack, the technologist will review the gel cards and, if applicable, modify and accept the results. If the reactions are determined to be Mixed-Field the technologist will:
 - a. Accept the MF results on the ORTHO VISION™.
 - b. Print a copy of the results by "Show Order Report" under the Results tab.
 - c. Access and finalize the results in Interface Manager in the BBIS following the Transfusion Medicine policy, [Resolution of ABO and Rh Discrepancies](#).

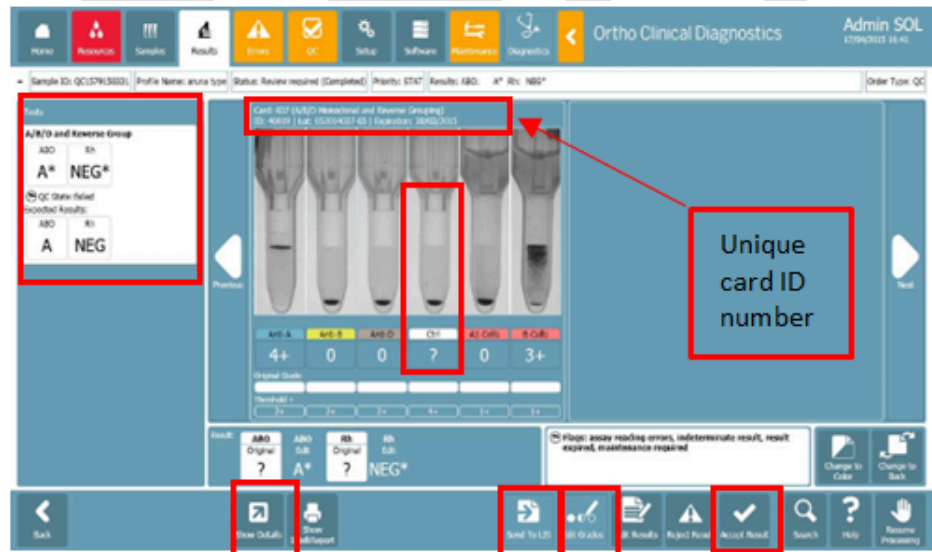
G. Gel Cards with Well Discrepancies (Codes).

1. The ORTHO VISION™ is configured to send gel cards with well discrepancies to the Manual Review Rack. Results with well discrepancies are not interpreted by ORTHO VISION™ and do not interface to the Blood Bank computer system.
 - a. As with all gel cards that are sent to the Manual Review Rack, the graded reactions shall be reviewed by a medical technologist. If the technologist grades a reaction differently than the ORTHO VISION™ then the technologist shall modify the graded reaction in the ORTHO VISION™ accordingly.
 - b. If the technologist is unable to resolve the discrepancy the technologist will print the Results by Show Order Report from the ORTHO VISION™ and submit it to a supervisor or MT Lead.
 - c. See attachment *ORTHO VISION™ Analyzer System Flags and Codes*, for a listing of codes along with the conditions and suggested actions.

V. PROCEDURE:

A. To Change Results:

1. Retrieve the card from the Manual Review Rack. Note that when opening the Dual Purpose Drawer, all cards that are in the Manual Review portion must be removed at that time.
 - a. Resources.
 - b. Manual Load Review.
 - c. Load-Unload.
2. Edit the Reaction Grade.
 - a. Touch Results.
 - b. Select the test to be edited.
 - c. Show Details.
 - d. If there is more than one test ordered on that sample, Select Test box on left side of screen.Identify the card needed for review by matching unique card ID number to card ID number on the ORTHO VISION™ screen.



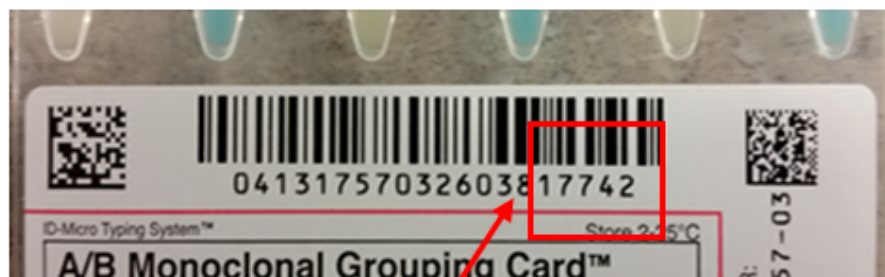
Unique card ID number is the last 5 digits of the card

- e. Touch Edit Grades.

- f. Scan card barcode.
 - g. Select reaction grade to be edited.
 - h. Change the reaction strength. Note that all reactions are graded by inspecting the gel card, not using the ORTHO VISION™ screen.
 - i. Touch Next.
 - j. Add comment (if necessary).
 - k. Touch Next.
 - l. Input password.
 - m. Touch Confirm Password.
3. Accept the results.
 - a. The results will not cross the interface to the BBIS until they have been accepted.
 4. If the results do not auto-verify in the BBIS, verify the results through Interface Manager in the BBIS.

B. To Review Results That Don't Need Editing:

1. Retrieve the card from Manual Review Rack. Note that when opening the Dual Purpose Drawer, all cards that are in the Manual Review portion must be removed at that time.
 - a. Touch Resources.
 - b. Touch Manual Load Review.
 - c. Touch Load-Unload.
2. View the Reaction / Well.
 - a. Touch Results.
 - b. Select the test to be reviewed.
 - c. Touch Show Details.
 - d. If there is more than one test ordered on that sample, Select Test box on left side of screen.
 - e. Identify the card needed for review by matching unique card ID number to card ID number on the ORTHO VISION™ screen.



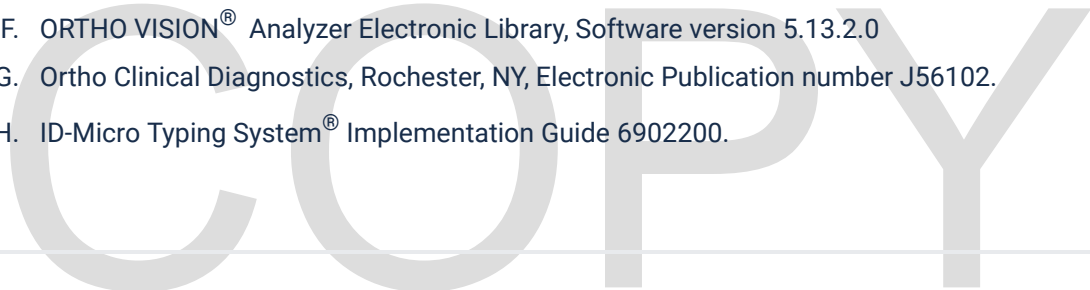
Unique card ID number is the last 5 digits of the card

- f. If there is agreement with the results in the well, touch accept.

- g. If there is non-agreement with the wells in question, edit the wells. See the *To Change Results* procedure section above.
3. Accept the results.
 - a. The results will not cross the interface to the BBIS until they have been accepted.
 4. If the results do no auto-verify in the BBIS, verify the results through Interface Manager in the BBIS.

VI. REFERENCES:

- A. AABB *Standards for Blood Banks and Transfusion Services*, current edition.
- B. Cohn, C.S., Delaney, M, Johnson, S.T., Katz, L.M. (2020) *Technical Manual*.(19th ed.). AABB.
- C. Ortho Clinical Diagnostics, Rochester, NY, Ortho Vision General Operator Training Manual, Publication J56102.
- D. ORTHO VISION® Analyzer ID-MTS Gel Cards Reference Guide J40050.
- E. ORTHO VISION® Analyzer ID-MTS Gel Cards Self-Service Customer Procedures Guide J40055ENNA.
- F. ORTHO VISION® Analyzer Electronic Library, Software version 5.13.2.0
- G. Ortho Clinical Diagnostics, Rochester, NY, Electronic Publication number J56102.
- H. ID-Micro Typing System® Implementation Guide 6902200.



Attachments

[ORTHO VISION Analyzer System Flags and Codes Attachment 09112024](#)

Approval Signatures

Step Description	Approver	Date
	Ann Marie Blenc: System Med Dir, Hematopath	10/10/2024
	Kristina Davis: Staff Physician	10/2/2024
	Muhammad Arshad: Chief, Pathology	9/27/2024
	Jeremy Powers: Chief, Pathology	9/26/2024

	Hassan Kanaan: OUWB Clinical Faculty	9/23/2024
	Masood Siddiqui: Staff Pathologist	9/20/2024
	Ryan Johnson: OUWB Clinical Faculty	9/19/2024
	John Pui: Chief, Pathology	9/19/2024
Policy and Forms Steering Committee (if needed)	Kelly Sartor: Mgr, Division Laboratory	9/18/2024
	Karrie Torgerson: Medical Technologist Lead [KS]	9/18/2024
	Teresa Lovins: Supv, Laboratory [KS]	9/18/2024
	Kristen DiCicco: Mgr, Laboratory	9/18/2024
	Fatima Bazzi: Supv, Laboratory	9/18/2024
	Katherine Persinger: Mgr, Laboratory	9/17/2024
	Ashley Beesley: Mgr, Laboratory	9/17/2024
	Suzanne Chahine: Medical Technologist Lead	9/17/2024
	Hilary Morey: Medical Technologist Lead	9/17/2024
	Kelly Sartor: Mgr, Division Laboratory	9/17/2024
	Kelly Sartor: Mgr, Division Laboratory	9/17/2024