Blood Transfusion

Education and Discussion Group

Meeting 55

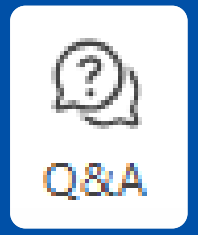
NHS Blood and Transplant

#BTEDG

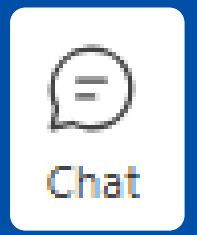
RCI Assist – Sp-ICE up your life (OBOS having a good time)

This month we are joined by **Helen Thom, Pathology Business Development Manager, NHS Blood and Transplant.**

This meeting will start at 14:02 and will be recorded



Please use the Q&A function for all questions for the speaker



Please use the chat function for anything else

RCI Assist
Sp-ICE up your life!
(OBOS having a good time)

Helen Thom
Pathology BDM - NHSBT

Image generated by Microsoft Copilot using AI image generation tools, August 2025.

RCI Assist

Transfusion 2024

NHS Blood and Transplant

What is RCI Assist?

As part of the integrated transfusion services strategic plan for Transfusion 2024, a referral support tool, RCI Assist, has been developed.

RCI Assist guides users when processing samples in the Hospital Transfusion Laboratory (HTL). RCI Assist contains decision points to either refer cases to Red Cell Immunohaematology (RCI) or resolve in-house and is supported with pop up information to improve HTL staff confidence.

Pathways include:

- Grouping
- Antibody Identification
- Antenatal
- Panreactives
- Elution
- Transfusion

Scan here to see how to navigate RCI Assist

How it works:

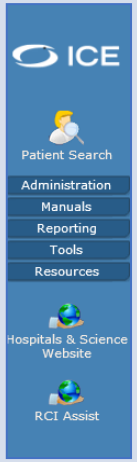
YES NO — To move through the pathways, select the yes or no options next to the question boxes

Elutions — To jump straight to a section, select the required tab

To get supporting information about a topic, click the information icon

Input result on LIMS — Reach a decision point and either refer to RCI or result in-house

Accessing RCI Assist:



RCI Assist is available as a link in Sp-ICE and OBOS

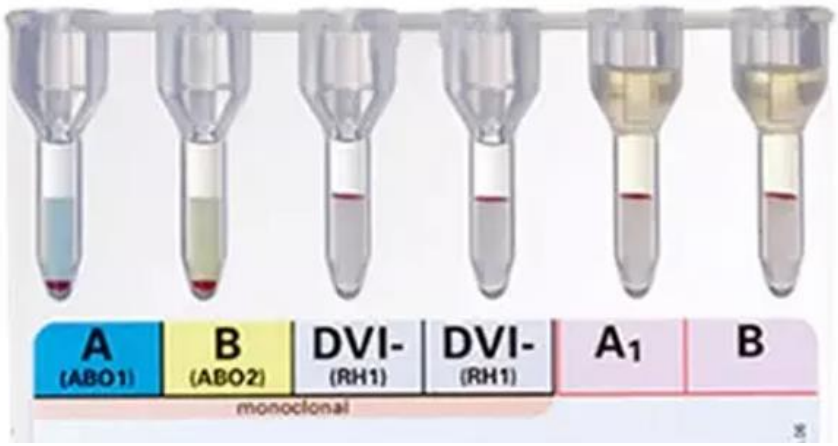
Log in with your usual credentials

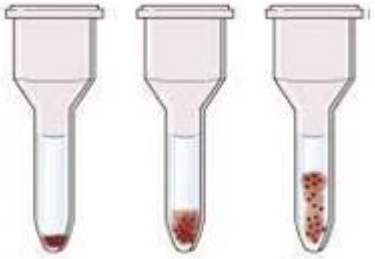
Help Files - OBOS User Guide and Presentation | Component Portfolio | RCI Assist

For further information on RCI Assist, please visit the NBTC website or email transfusion2024@nhsbt.nhs.uk

Case 1

- 65-year-old male
- Group & Screen
- No blood requested
- Pre-op assessment
- Historical alloanti-K
- Transfused 10 weeks ago
- LIMS and Sp-ICE results show patient as O+ E- K- with alloanti-K
- Previously seen by RCI





Patient group & screen results

Is ABO and D group interpretable?
YES
NO

Is ABO and D group interpretable?

NO

Click to learn more

Is ABO and D group interpretable?

Forward and reverse ABO groups match in accordance with Landsteiner's Law.

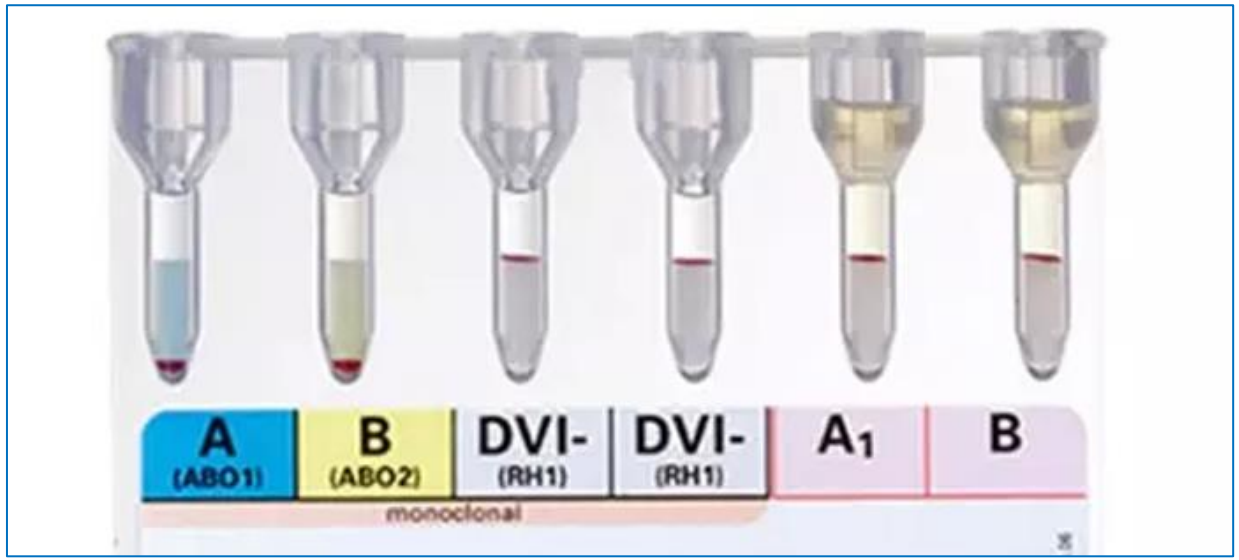
Note: Neonate groups are considered 'interpretable' from forward group only.

ABO forward group and D group show strong positive (3+/4+) reactions. Reverse group reactions may be weaker.

"For whichever ABO antigen is not present on the red cells, the corresponding antibody is found in the plasma"

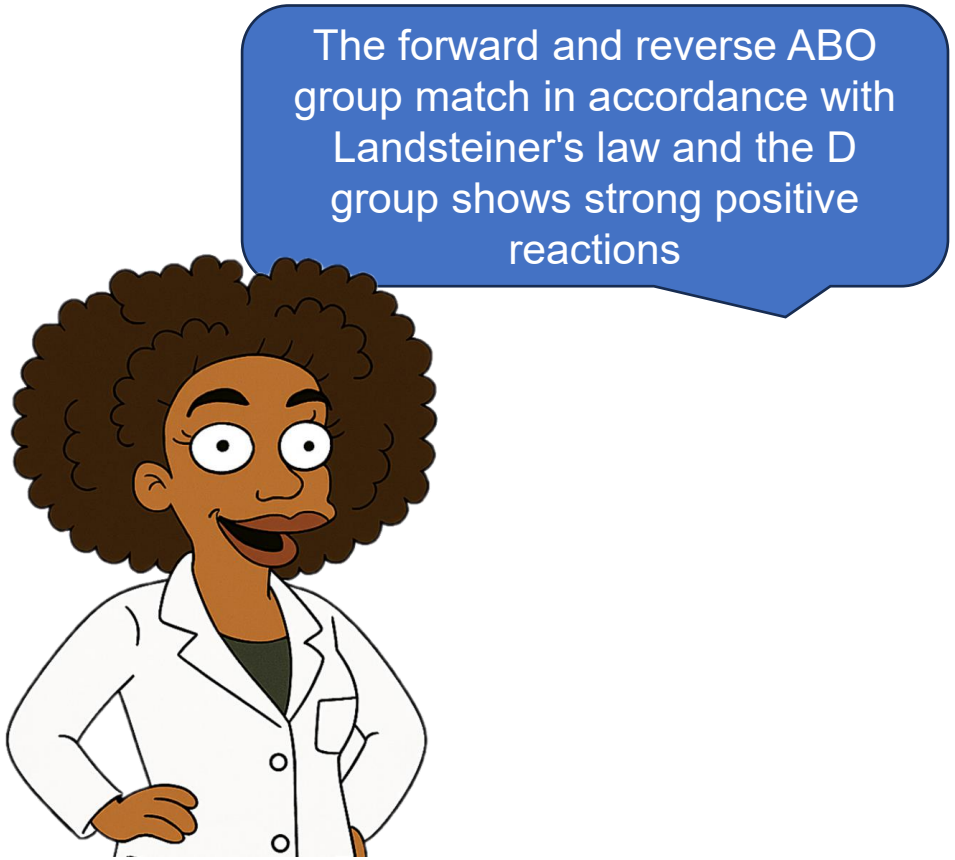
"If you wanna be my donor, you better get with my antibodies"

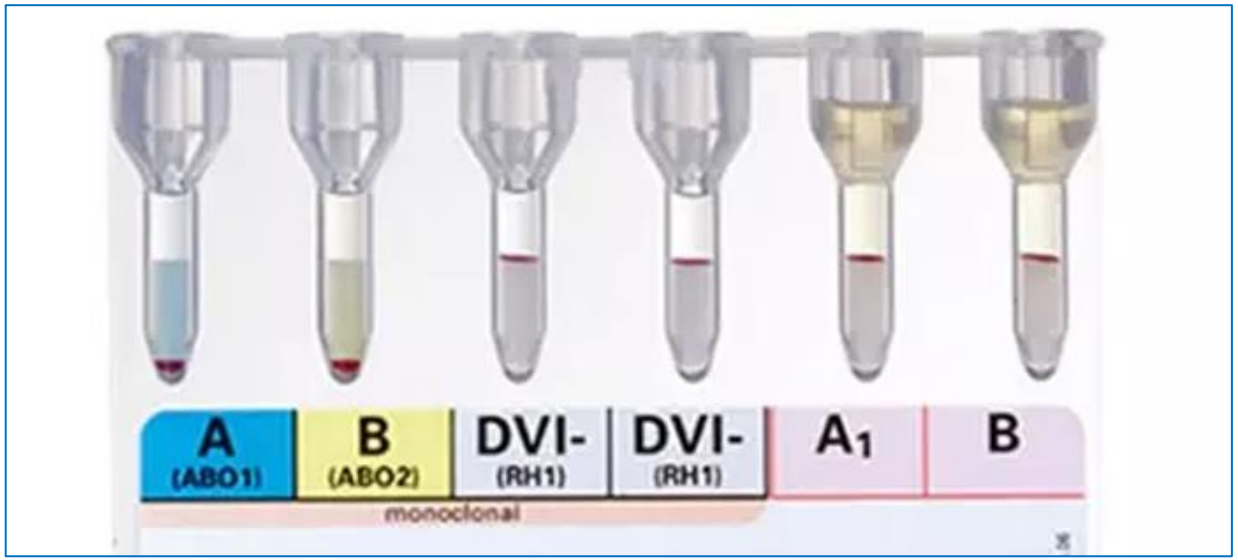
Is the ABO and D group interpretable?

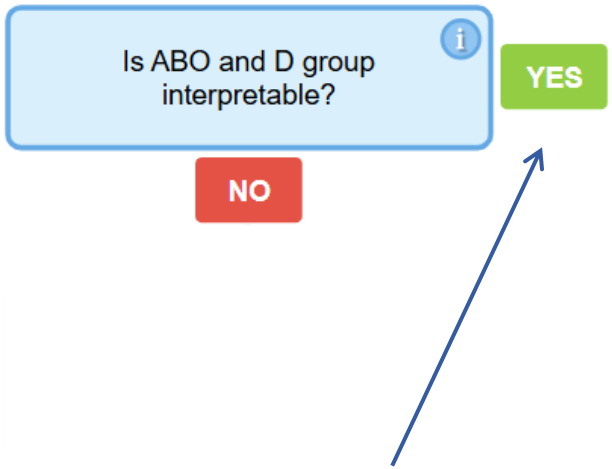


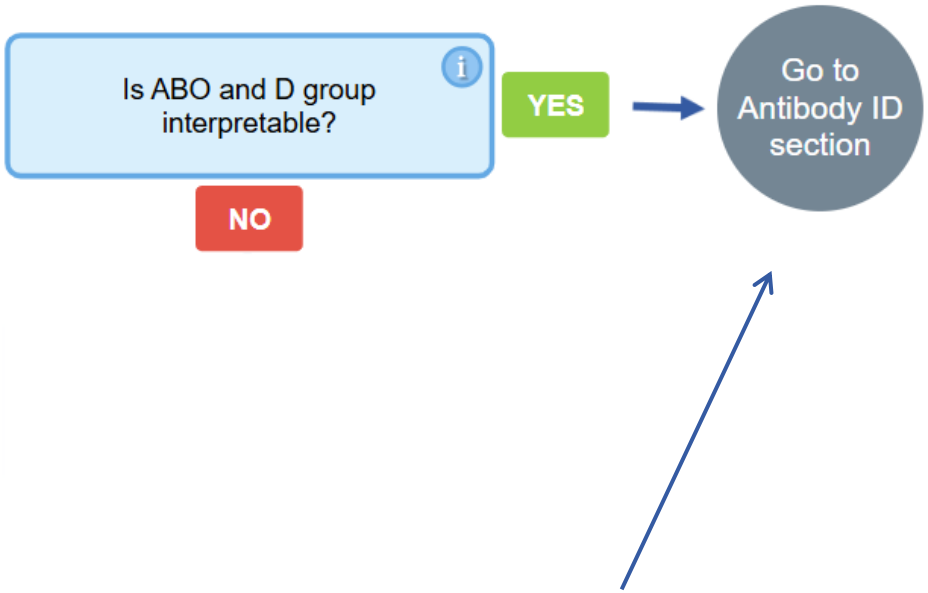
Yes, no or unsure

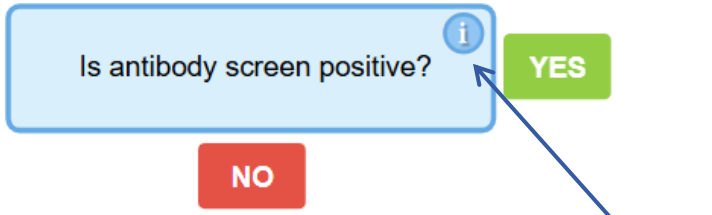
Is the ABO and D group interpretable?






Is ABO and D group interpretable?
YES
NO


Is ABO and D group interpretable?
YES
NO
Go to Antibody ID section


Is antibody screen positive?
YES
NO

Is antibody screen positive?

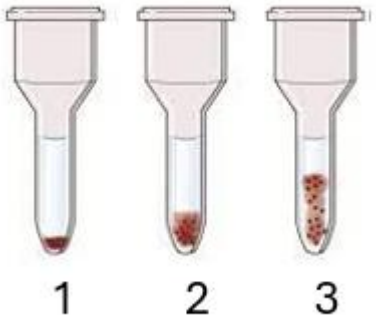
NO

Click to learn more

Is antibody screen positive?

Positive result obtained by Indirect Antiglobulin Test (IAT) antibody screen.

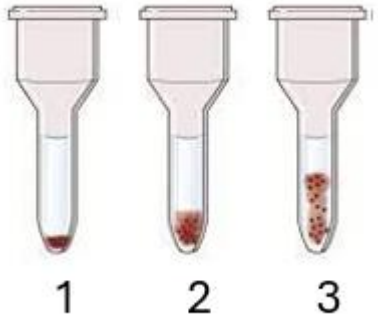
Is the antibody screen positive?



Yes, no or unsure

Is the antibody screen positive?

Positive result obtained by IAT

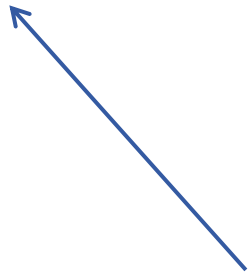


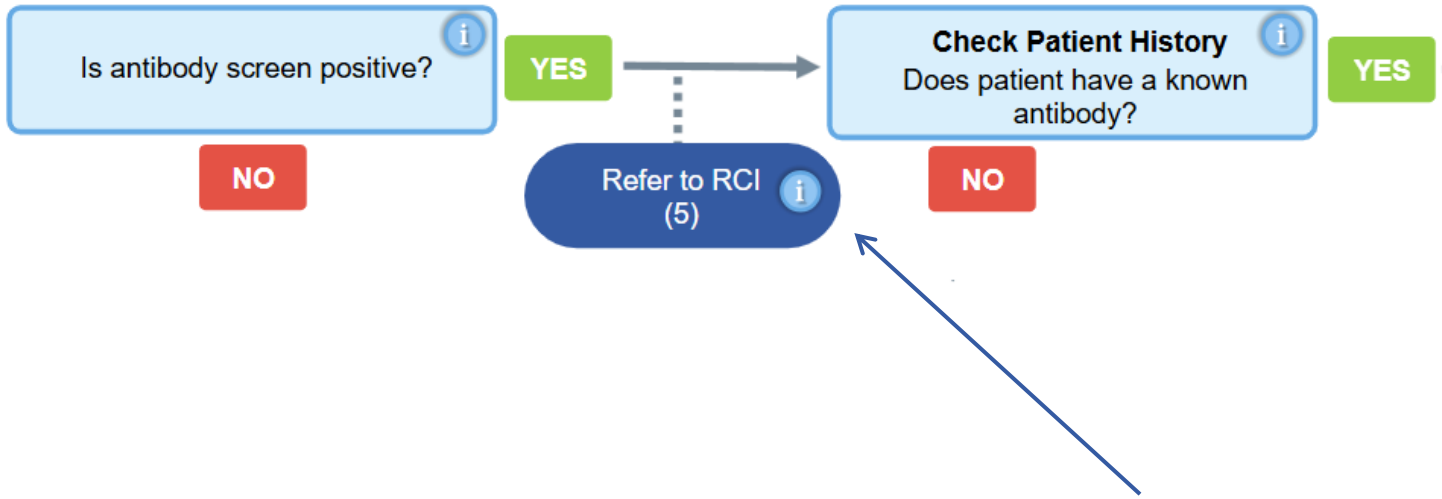
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	$R_1^wR_1$	+	+	0	0	+	0	+	+	0	**0**	**0**	+	**0**	**0**	+	+	**0**	**0**	+		0
2	R_2R_2	+	0	+	+	0	+	0	0	+	**0**	**0**	+	**0**	+	**0**	**0**	+	+	**0**		1
3	rr	0	0	0	+	+	+	0	+	0	**4**	+	**0**	**0**	**0**	+	+	**0**	+	**0**		2

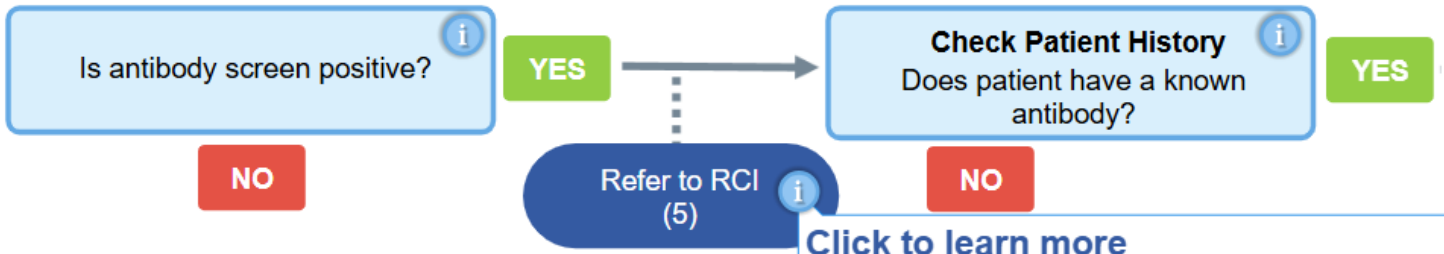
Is antibody screen positive?

YES

NO



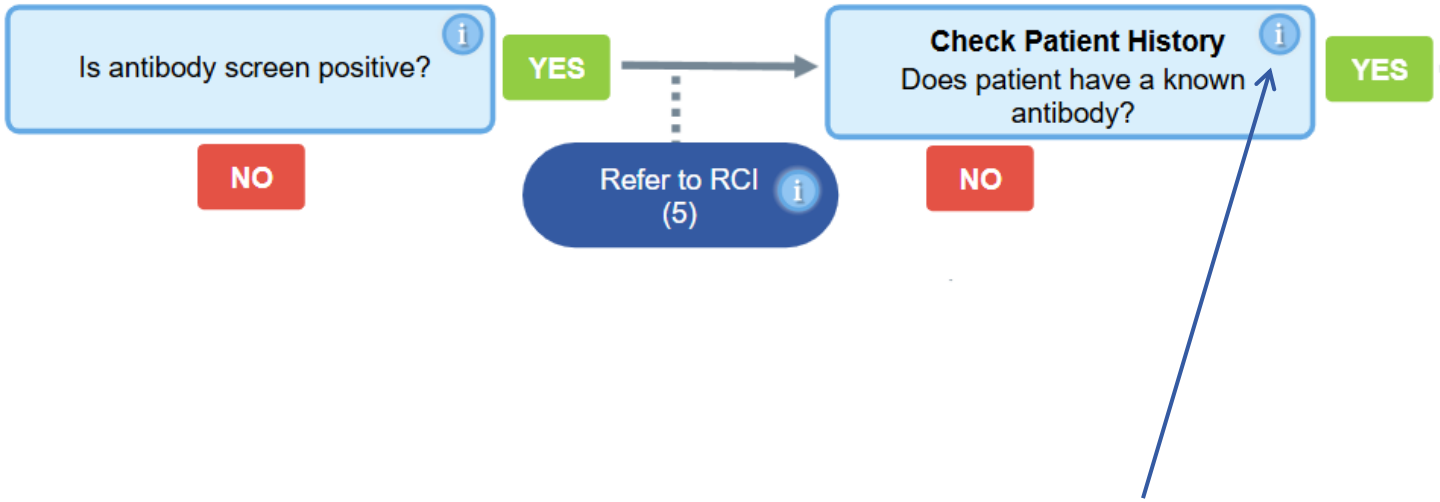

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO

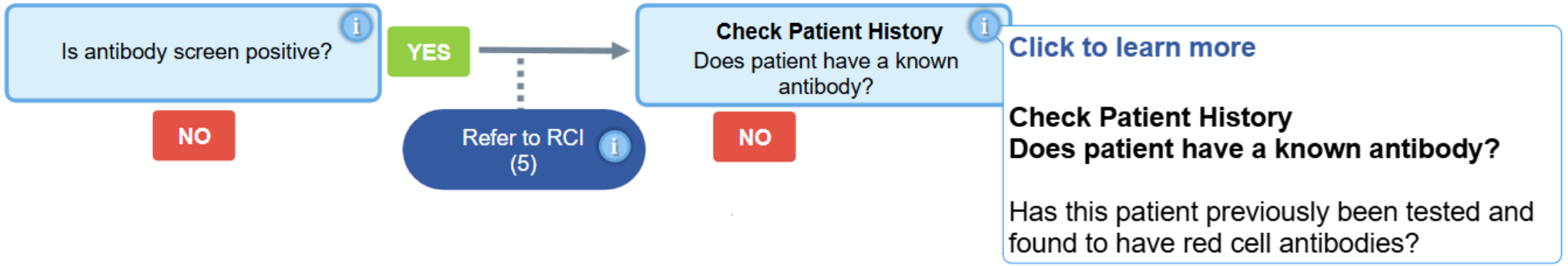


Click to learn more

Refer to RCI (5)

Optional point to refer to RCI when positive antibody screen obtained if your laboratory does not possess an antibody ID panel.


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO



Click to learn more

Check Patient History
Does patient have a known antibody?

Has this patient previously been tested and found to have red cell antibodies?

Is antibody screen positive?

YES

NO

Refer to RCI (5)

Check Patient History
Does patient have a known antibody?

NO

Click to learn more

Check Patient History
Does patient have a known antibody?

Has this patient previously been tested and found to have red cell antibodies?

65-year-old male

Group & Screen

No blood requested

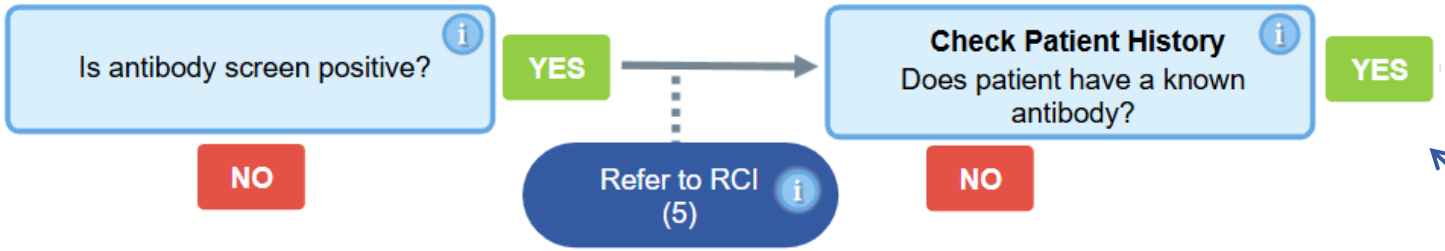
Pre-op assessment

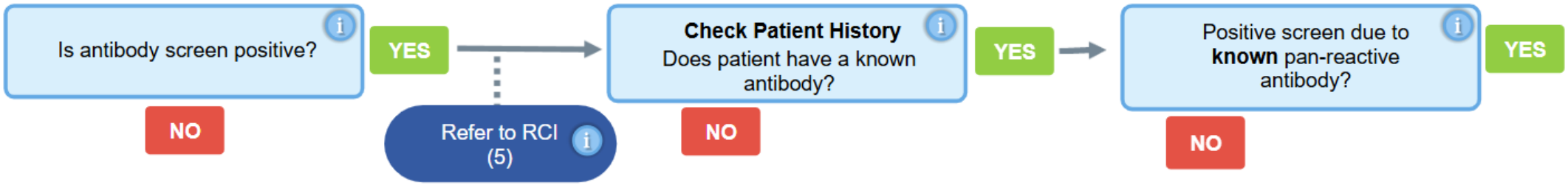
Historical alloanti-K

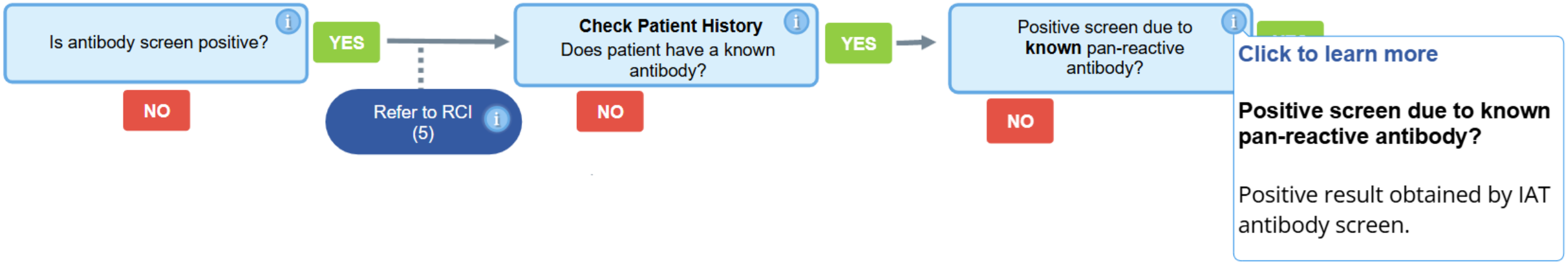
Transfused 10 weeks ago

LIMS and Sp-ICE results show patient as O+ E- K- with alloanti-K

Previously seen by RCI


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
NO
Click to learn more
Positive screen due to known pan-reactive antibody?
Positive result obtained by IAT antibody screen.

Is antibody screen positive?

YES

NO

Refer to RCI (5)

Check Patient History
Does patient have a known antibody?

YES

NO

Positive screen due to **known** pan-reactive antibody?

NO

Click to learn more

Positive screen due to known pan-reactive antibody?

Positive result obtained by IAT antib[illegible]n.

65-year-old male

Group & Screen

No blood requested

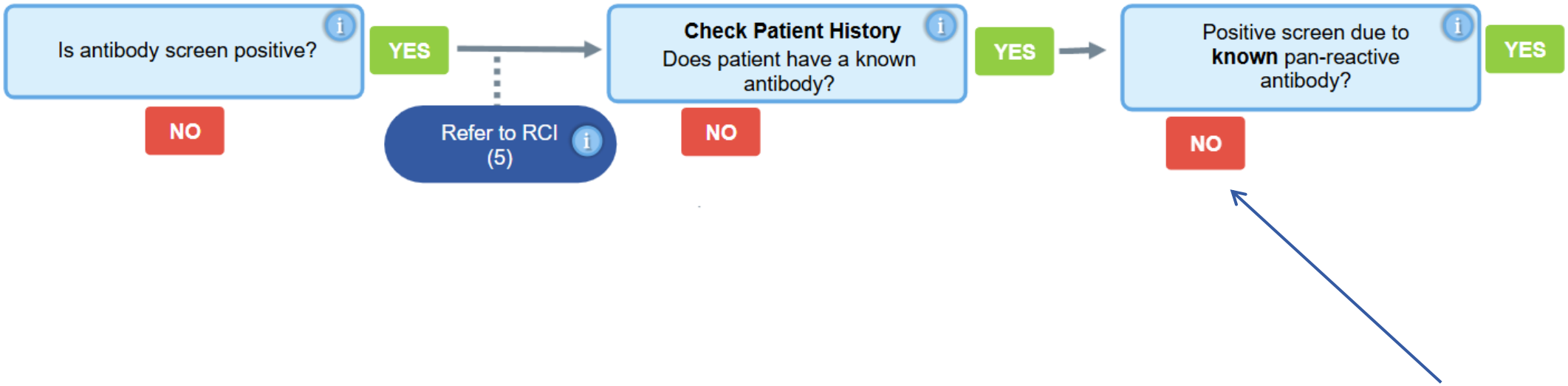
Pre-op assessment

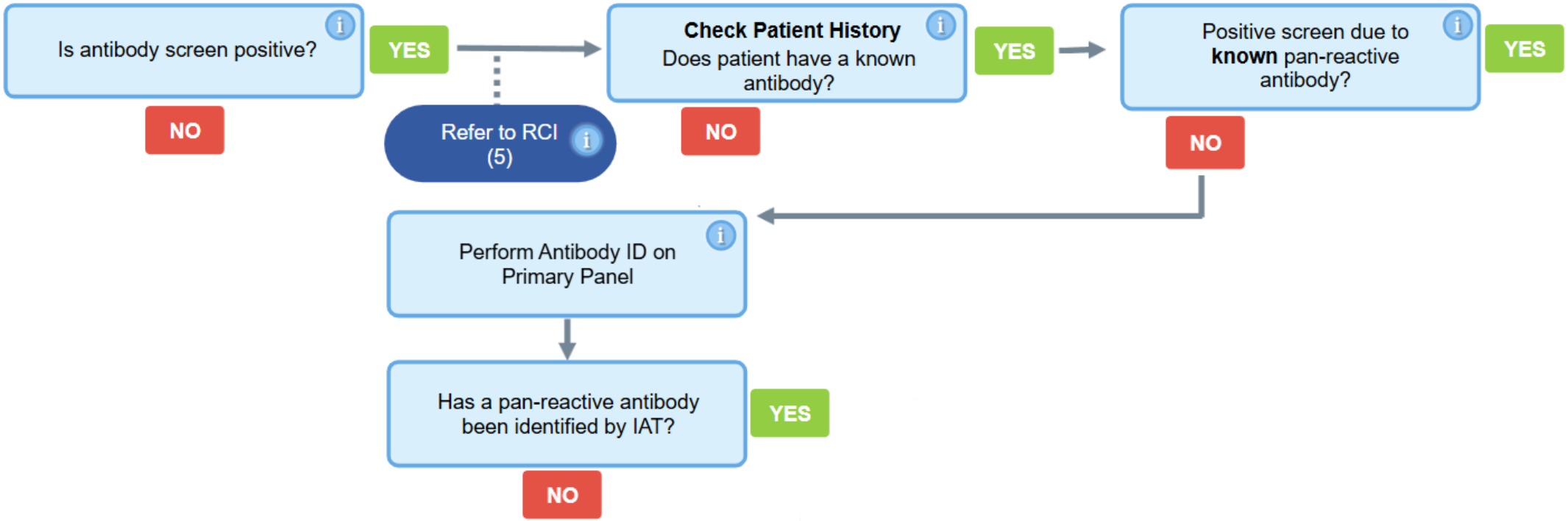
Historical alloanti-K

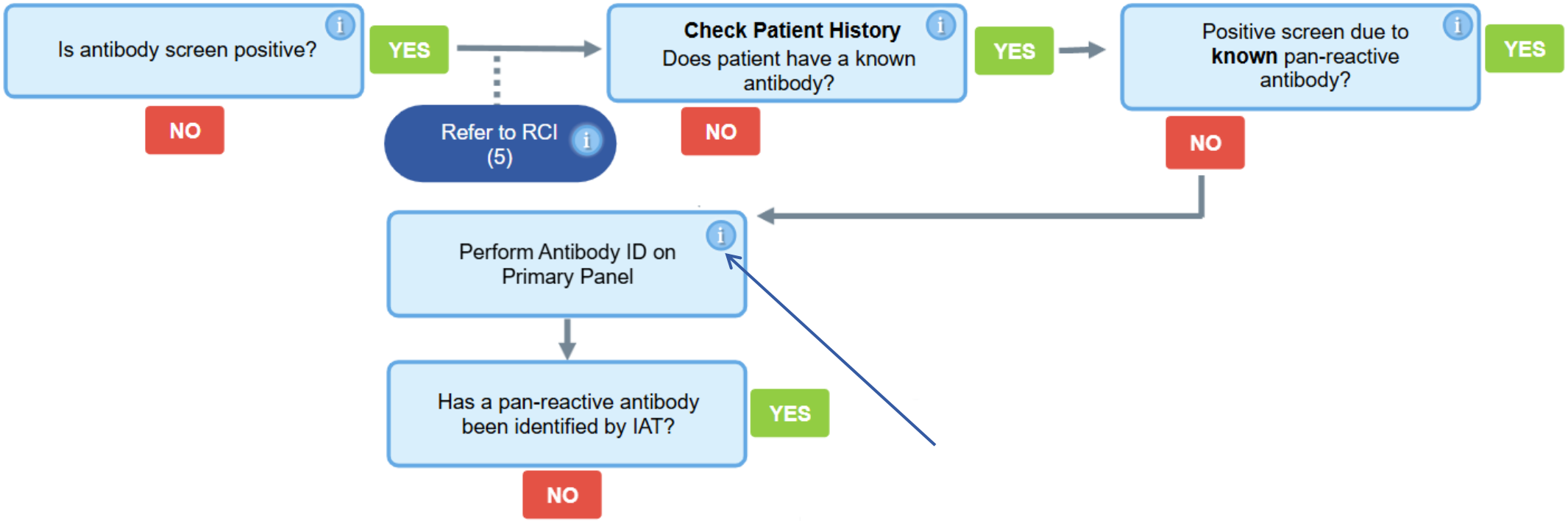
Transfused 10 weeks ago

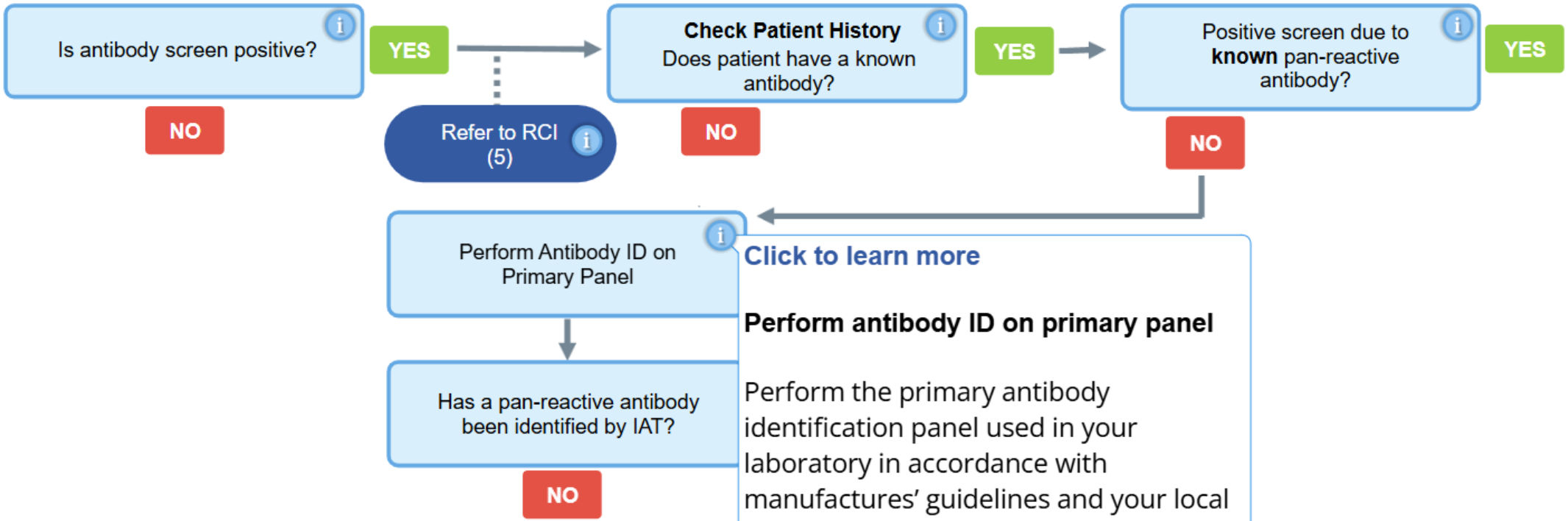
LIMS and Sp-ICE results show patient as O+ E- K- with alloanti-K

Previously seen by RCI


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO

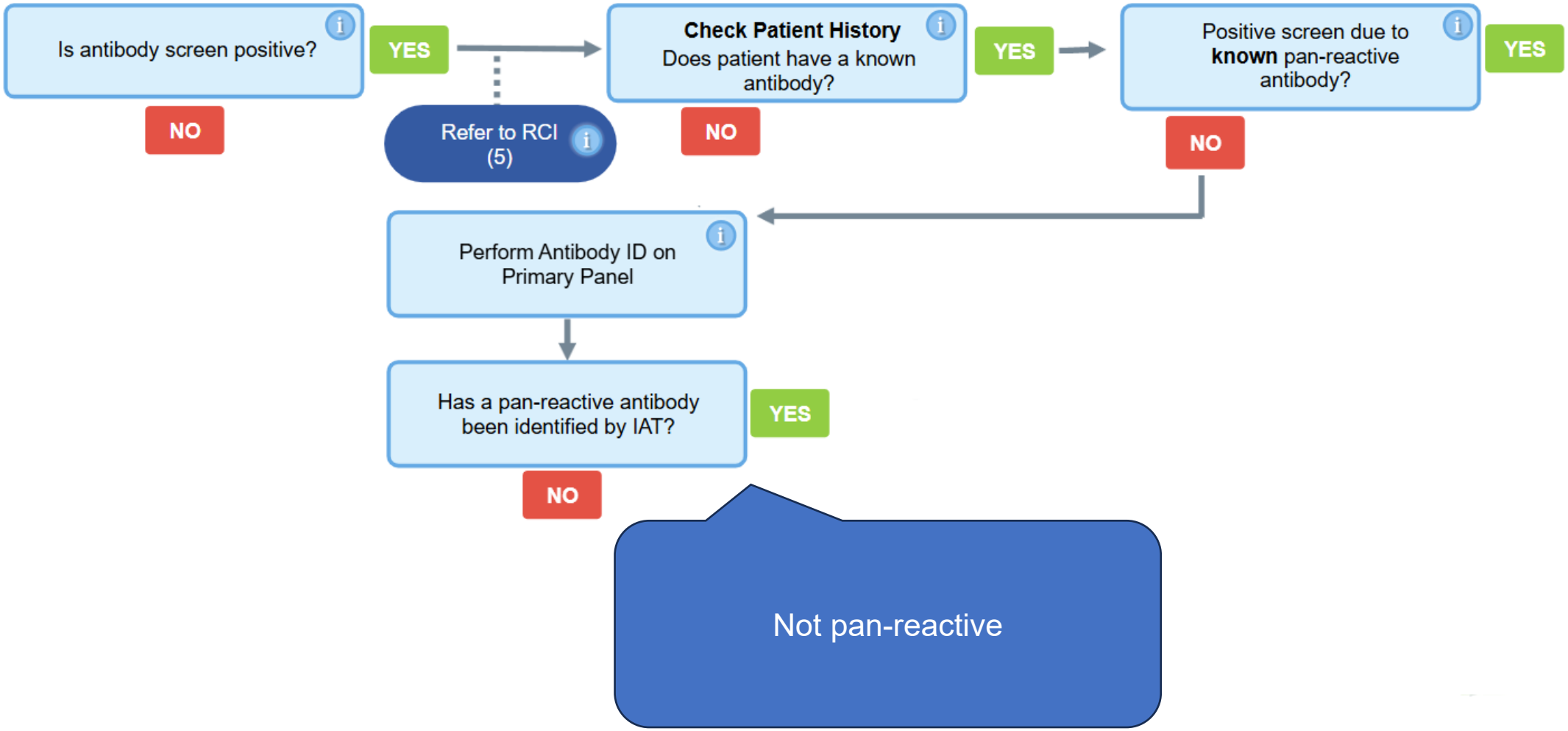

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO

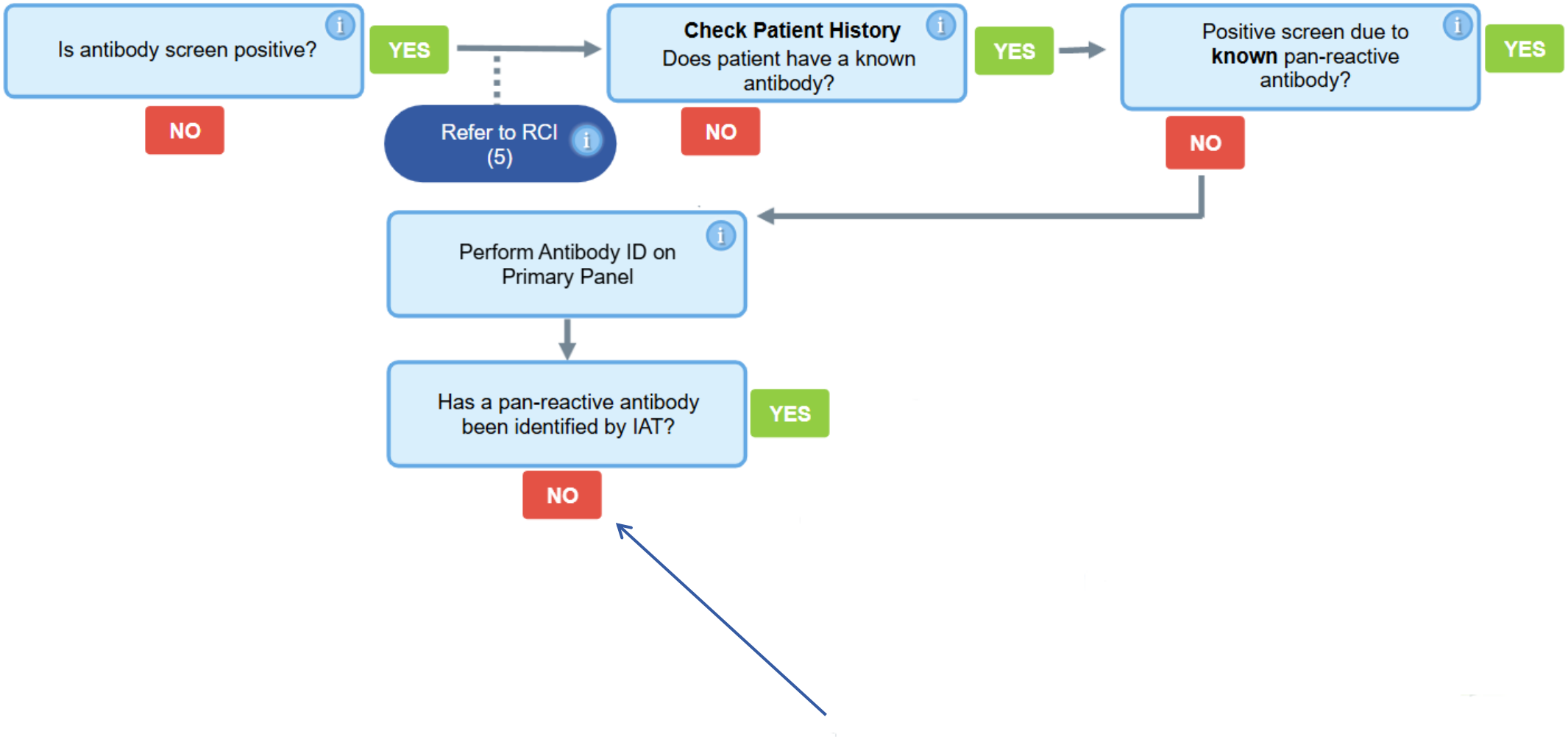

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO

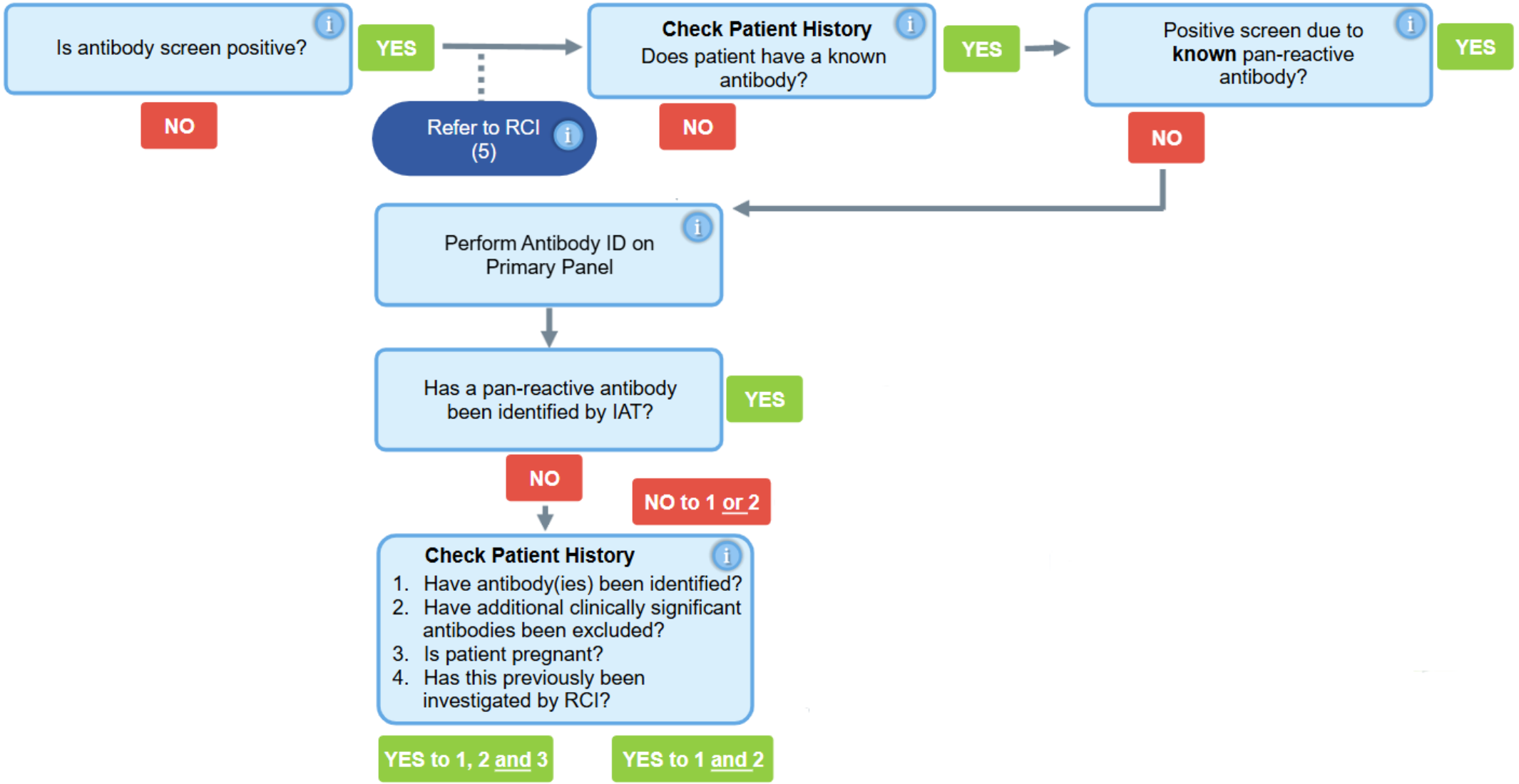

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
NO
Click to learn more
Perform antibody ID on primary panel
Perform the primary antibody identification panel used in your laboratory in accordance with manufactures' guidelines and your local procedures.

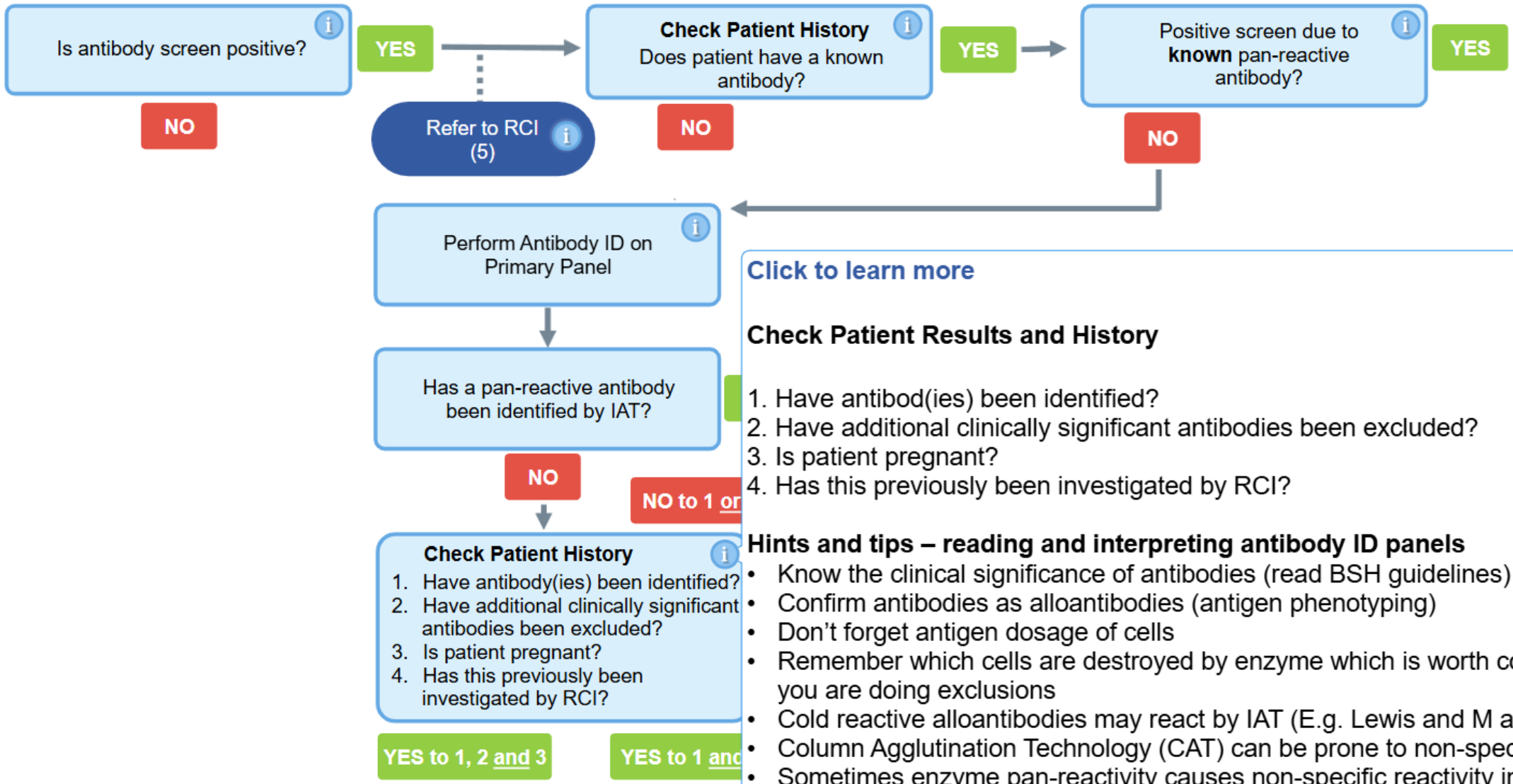
Case 1 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	1	0	0	+	0	+	0	+	0	+	0		+	(+)
2	R_1R_1	+	+	0	0	+	+	0	+	0	1	+	+	+	0	0	+	0	+	0	+		2	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	0	0	0	+	0	0	+	+	W	0	+		0	0
4	r'r	0	+	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	+	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	3	0	0	+	0	0	+	0	+	+	0		(+)	+
6	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	2	2
7	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
8	rr	0	0	0	+	+	0	+	0	+	2	0	0	+	+	+	0	0	+	+	0	HLA+	+	2
9	rr	0	0	0	+	+	0	+	+	0	3	0	0	+	0	+	0	+	0	0	+	Cob+ HLA+	0	0
10	rr	0	0	0	+	+	+	0	0	+	0	+	0	+	0	0	+	+	0	0	+		0	0
																						Auto	2	/
																						K control	2	/


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Not pan-reactive


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2



Click to learn more

Check Patient Results and History

1. Have antibod(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

Hints and tips – reading and interpreting antibody ID panels

- Know the clinical significance of antibodies (read BSH guidelines)
- Confirm antibodies as alloantibodies (antigen phenotyping)
- Don't forget antigen dosage of cells
- Remember which cells are destroyed by enzyme which is worth considering when you are doing exclusions
- Cold reactive alloantibodies may react by IAT (E.g. Lewis and M antibodies)
- Column Agglutination Technology (CAT) can be prone to non-specific reactions
- Sometimes enzyme pan-reactivity causes non-specific reactivity in IAT. In such cases, please ensure that you can exclude all clinically significant antibodies by IAT.

Antibody Inclusion/exclusion

- 6.2.4.Antibody specificity should only be assigned when the plasma is reactive with at least two examples of reagent red cells expressing the antigen and non-reactive with at least two examples of reagent red cells lacking the antigen
- 6.2.5.When one antibody specificity has been identified, it is essential that the presence or absence of additional clinically significant antibodies is established
- 6.2.6.Failure to recognise all of the antibody specificities within a sample may lead to a haemolytic transfusion reaction (SHOT, 1996–2010). In particular, the presence of anti-Jk^{a}, anti-Jk^{b}, anti-S, anti-s, anti-Fy^{a} and anti-Fy^{b} should be excluded using red cells having homozygous expression of the relevant antigen
- A single example only of each phenotype is sufficient for exclusion

https://b-s-h.org.uk/guidelines/guidelines/pre-transfusion-compatibility-procedures-in-blood-transfusion-laboratories/

Case 1 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	1	0	0	+	0	+	0	+	0	+	0		+	(+)
2	R_1R_1	+	+	0	0	+	+	0	+	0	1	+	+	+	0	0	+	0	+	0	+		2	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	0	0	0	+	0	0	+	+	W	0	+		0	0
4	r'r	0	+	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	+	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	3	0	0	+	0	0	+	0	+	+	0		(+)	+
6	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	2	2
7	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
8	rr	0	0	0	+	+	0	+	0	+	2	0	0	+	+	+	0	0	+	+	0	HLA+	+	2
9	rr	0	0	0	+	+	0	+	+	0	3	0	0	+	0	+	0	+	0	0	+	Cob+ HLA+	0	0
10	rr	0	0	0	+	+	+	0	0	+	0	+	0	+	0	0	+	+	0	0	+		0	0
																						Auto	2	/
																						K control	2	/

Probable anti-K, anti-Jk^a
Have not excluded anti-Kp^a and C^w

What would really, really, really, really, wanna do next?

Zig a zig ah, good suggestions!

Screen

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	$R_1^wR_1$	+	+	0	0	+	0	+	+	0	0	0	+	0	0	+	+	0	0	+		0
2	R_2R_2	+	0	+	+	0	+	0	0	+	0	0	+	0	+	0	0	+	+	0		1
3	rr	0	0	0	+	+	+	0	+	0	4	+	0	0	0	+	+	0	+	0		2

Are anti-Kp^{a} and anti-C^{w} clinically significant antibodies in Transfusion?

Yes, no or unsure

TRANSFUSION MEDICINE
Official Journal of the British Blood Transfusion Society
British Blood Transfusion Society

Transfusion 2024

NHS Blood and Transplant

BSH Guidelines – clinical significance of red cell antibodies

System	Specificity	Likely clinical significance in transfusion
Kell	Anti-K	Yes
Kidd	Anti-Jk^{a}	Yes
Rh	Anti-C^{w}	No
Kell	Anti-Kp^{a}	No

https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-3148.2012.01199.x

When 2 become 1 (in RCI)

“The first time an antibody is detected, specificity is confirmed using 2 antigen positive cells, however on subsequent referrals a single antigen positive cell is sufficient to confirm the specificity of a previously reported antibody”.

“If exclusion is not possible then the report must indicate those specificities that are not excluded. It is not necessary to exclude anti-N, -P1, -Lea , -Leb , -Cw , - Lua or - Kpa”

For HTL staff, follow your local procedures

Case 1 – ABID Panel 1

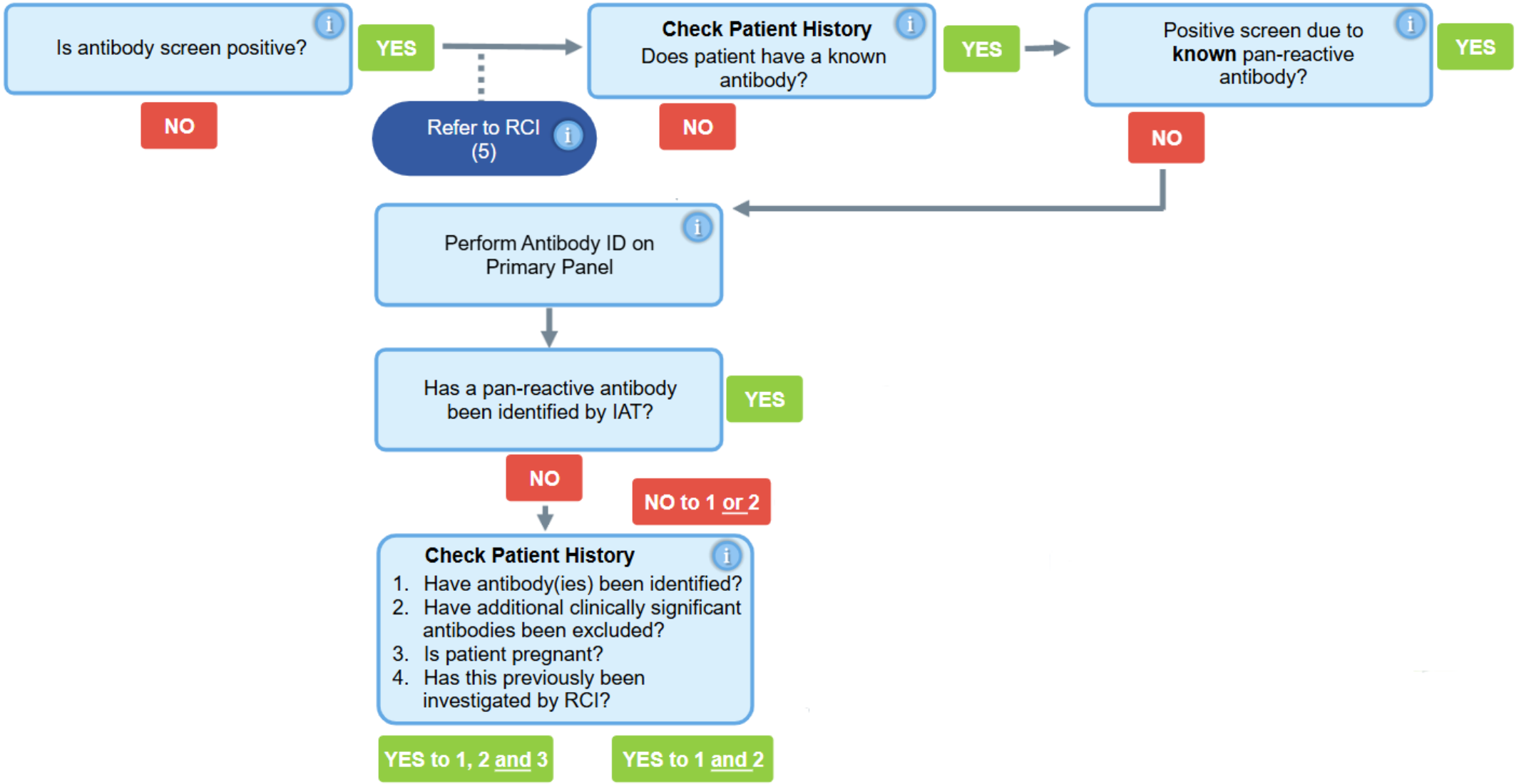
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	1	0	0	+	0	+	0	+	0	+	0		+	(+)
2	R_1R_1	+	+	0	0	+	+	0	+	0	→	→	+	+	0	0	+	0	+	0	+	→	2	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	0	0	0	+	0	0	+	+	W	0	+	→	0	0
4	r'r	0	+	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	+	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	3	0	0	+	0	0	+	0	+	+	0		(+)	+
6	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	2	2
7	rr	0	0	0	+	+	+	0	0	+	→	→	0	+	0	+	0	0	+	0	+	→	0	0
8	rr	0	0	0	+	+	0	+	0	+	2	0	0	+	+	+	0	0	+	+	0	HLA+	+	2
9	rr	0	0	0	+	+	0	+	+	0	3	0	0	+	0	+	0	+	0	0	+	Cob+ HLA+	0	0
10	rr	0	0	0	+	+	+	0	0	+	0	+	0	+	0	0	+	+	0	0	+		0	0
																						Auto	2	/
																						K control	2	/

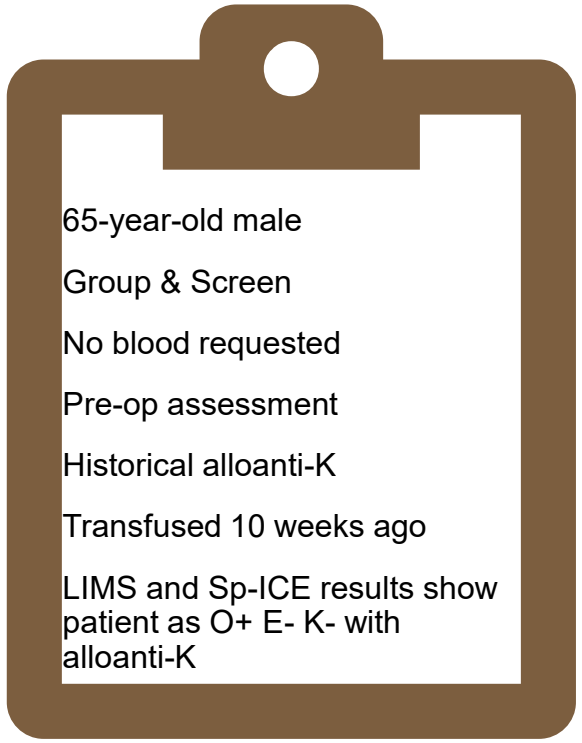
Case 1 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	1	0	0	+	0	+	0			+	0		+	(+)
2	R_1R_1	+	+	0	0	+	+	0	+	0	1	+	+	+	0	0	+	0	+	0	+		2	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	0	0	0	+	0	0	+	+	W	0	+		0	0
4	r'r	0	+	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	+	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	3	0	0	+	0	0	+			+	0		(+)	+
6	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	2	2
7	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
8	rr	0	0	0	+	+	0	+	0	+	2	0	0	+	+	+	0	0	+	+	0	HLA+	+	2
9	rr	0	0	0	+	+	0	+	+	0	3	0	0	+	0	+	0	+	0	0	+	Cob+ HLA+	0	0
10	rr	0	0	0	+	+	+	0	0	+	0	+	0	+	0	0	+	+	0	0	+		0	0
																						Auto	2	/
																						K control	2	/

Case 1 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	1	0	0	+	0	+	0	+	0	+	0		+	(+)
2	R_1R_1	+	+	0	0	+	+	0	+	0	1	+	+	+	0	0	+	0	+	0	+		2	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	0	0	0	+	0	0	+	+	W	0	+		0	0
4	r'r	0	+	0	+	+	0	+	+	0	4	0	0	+	0	0	+			+	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	3	0	0	+	0	0	+	0	+	+	0		(+)	+
6	rr	0	0	0	+	+	0	+	0	+			+	+	0	0	+			+	0	Do(a+b+)	2	2
7	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
8	rr	0	0	0	+	+	0	+	0	+	2	0			+	+	0			+	0	HLA+	+	2
9	rr	0	0	0	+	+	0	+	+	0	3	0	0	+	0	+	0	+	0	0	+	Cob+ HLA+	0	0
10	rr	0	0	0	+	+	+	0	0	+	0	+	0	+	0	0	+	+	0	0	+		0	0
																						Auto	2	/
																						K control	2	/


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

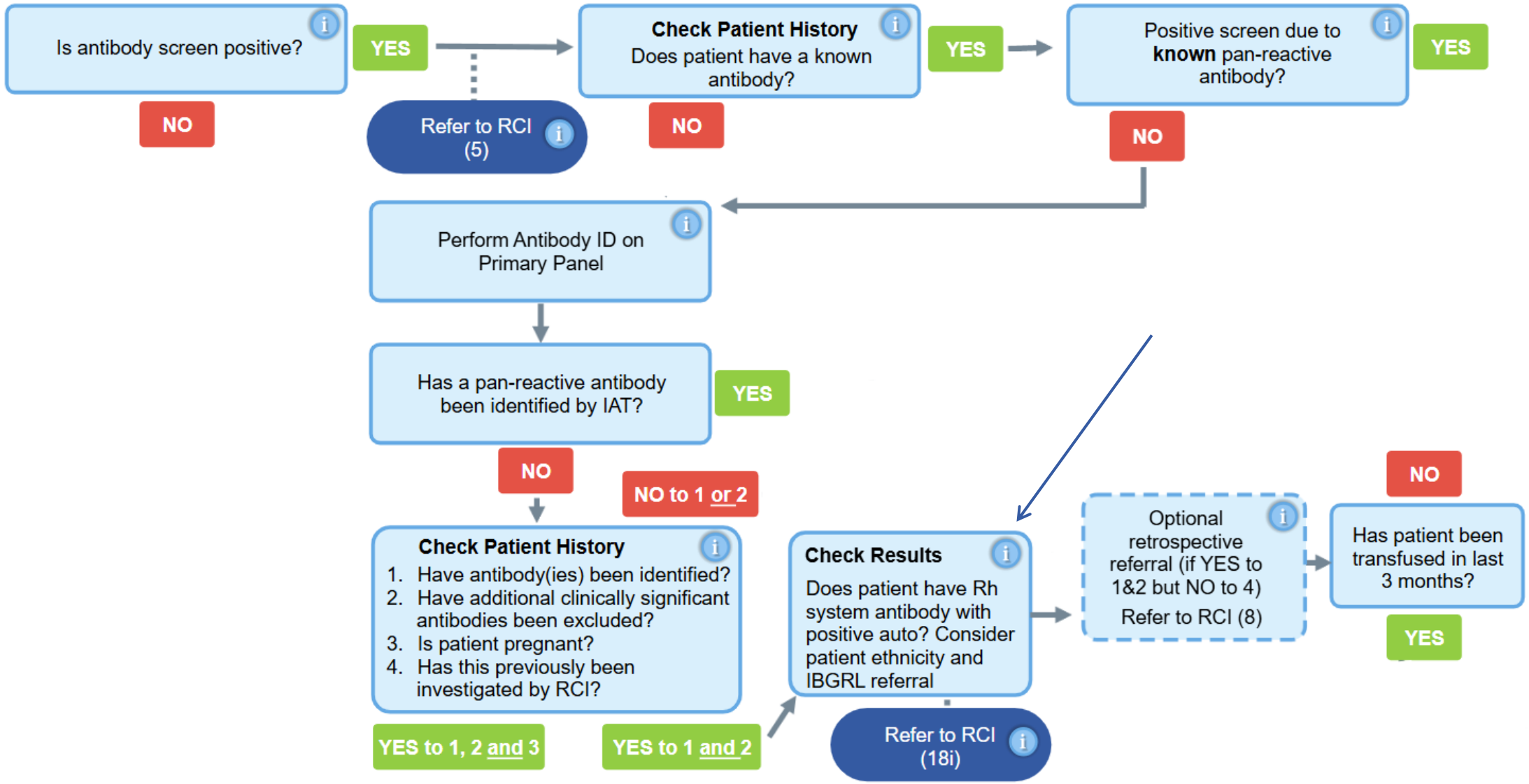


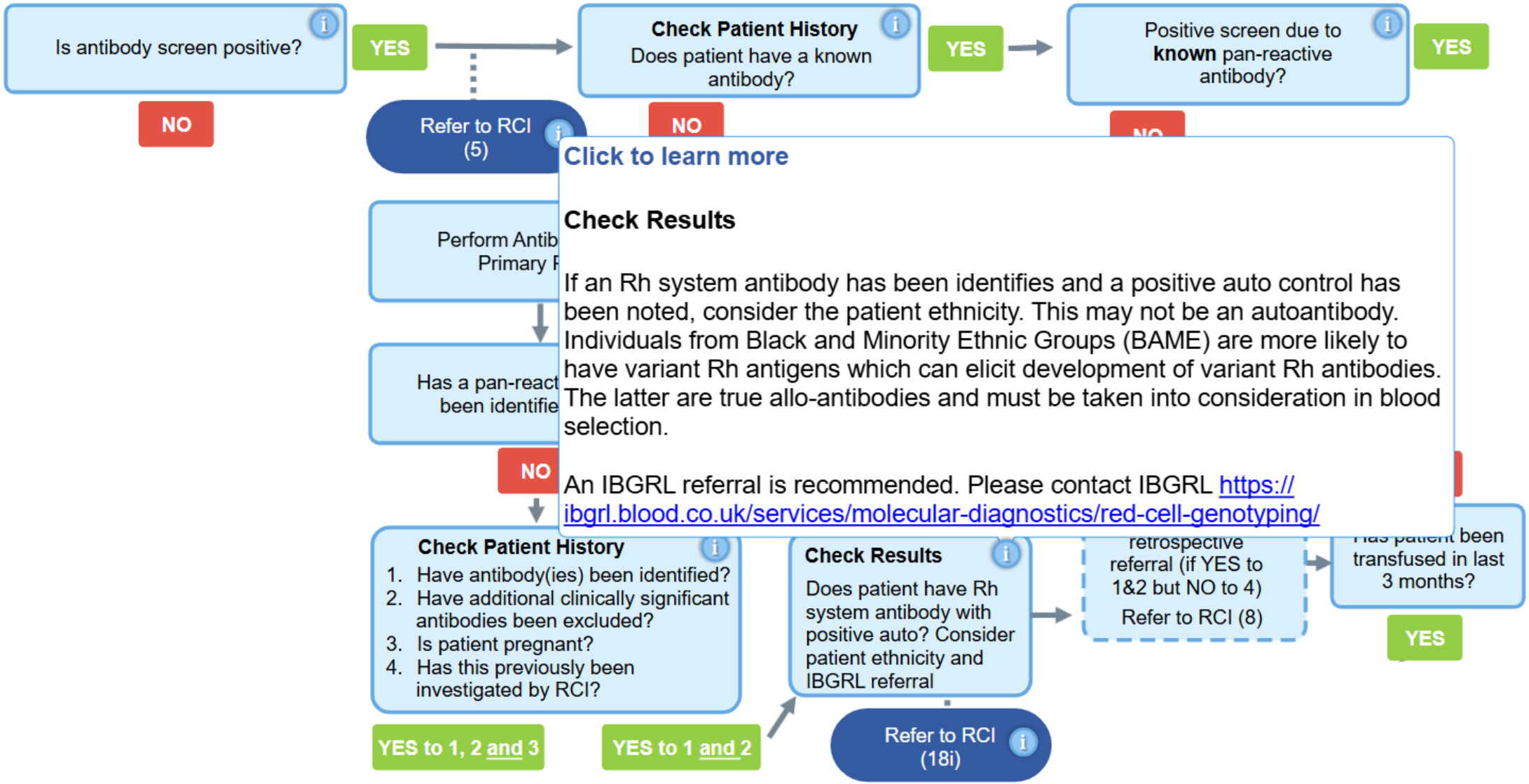
Check Patient Results and History

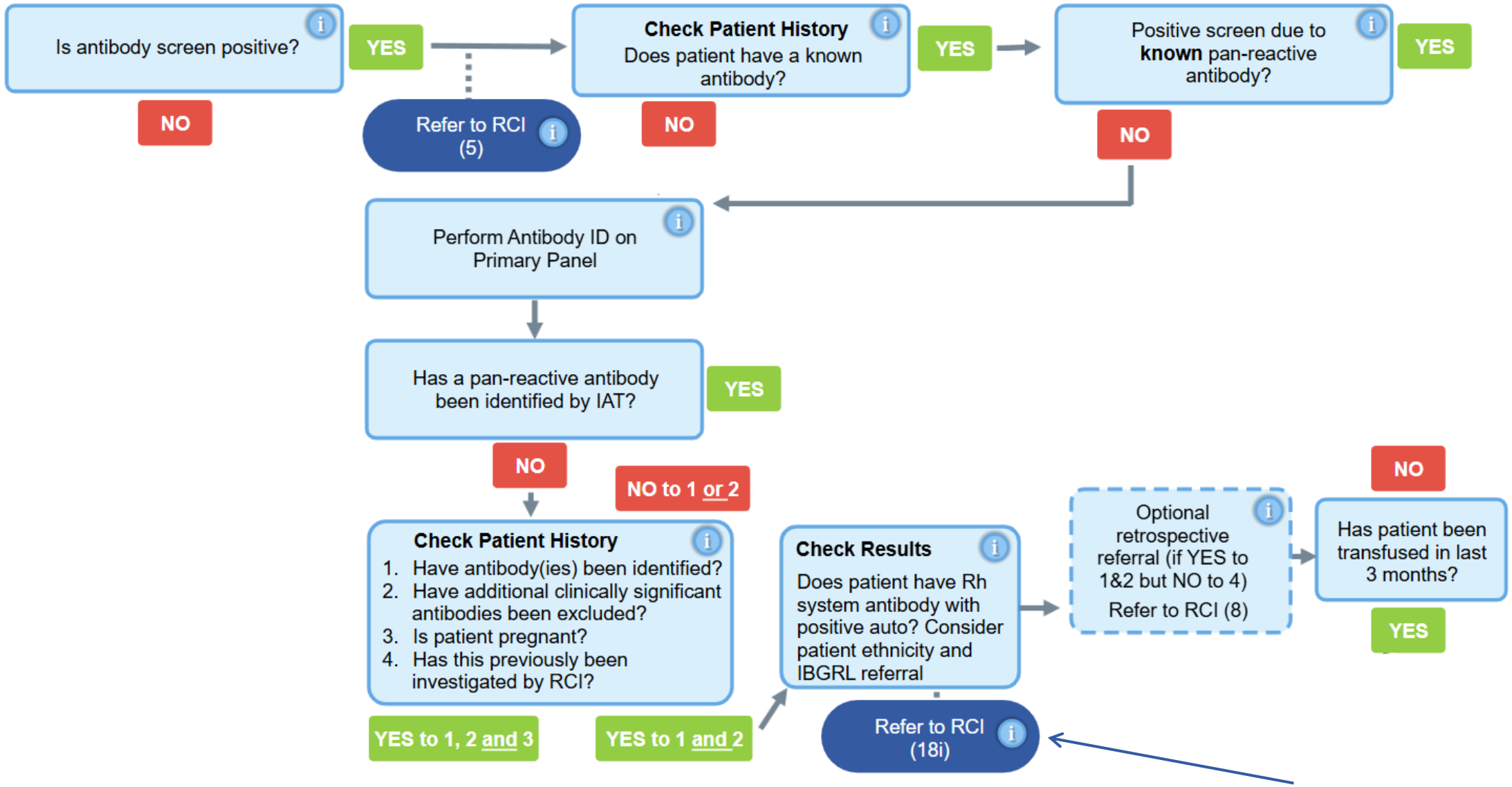
✓ 1. Have antibod(ies) been identified?
✓ 2. Have additional clinically significant antibodies been excluded?
✗ 3. Is patient pregnant?
✓ 4. Has this previously been investigated by RCI?

Hints and tips – reading and interpreting antibody ID panels

- Know the clinical significance of antibodies (read BSH guidelines)
- Confirm antibodies as alloantibodies (antigen phenotyping)
- Don't forget antigen dosage of cells
- Remember which cells are destroyed by enzyme which is worth considering when you are doing exclusions
- Cold reactive alloantibodies may react by IAT (E.g. Lewis and M antibodies)
- Column Agglutination Technology (CAT) can be prone to non-specific reactions
- Sometimes enzyme pan-reactivity causes non-specific reactivity in IAT. In such cases, please ensure that you can exclude all clinically significant antibodies by IAT.


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES


Is antibody screen positive?
YES
NO
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
Refer to RCI (5)
Perform Antib
Primary
Has a pan-react
been identifie
NO
Click to learn more
Check Results
If an Rh system antibody has been identifies and a positive auto control has been noted, consider the patient ethnicity. This may not be an autoantibody. Individuals from Black and Minority Ethnic Groups (BAME) are more likely to have variant Rh antigens which can elicit development of variant Rh antibodies. The latter are true allo-antibodies and must be taken into consideration in blood selection.
An IBGRL referral is recommended. Please contact IBGRL https://ibgrl.blood.co.uk/services/molecular-diagnostics/red-cell-genotyping/
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
YES to 1 and 2
Refer to RCI (18i)
retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
been transfused in last 3 months?
YES


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
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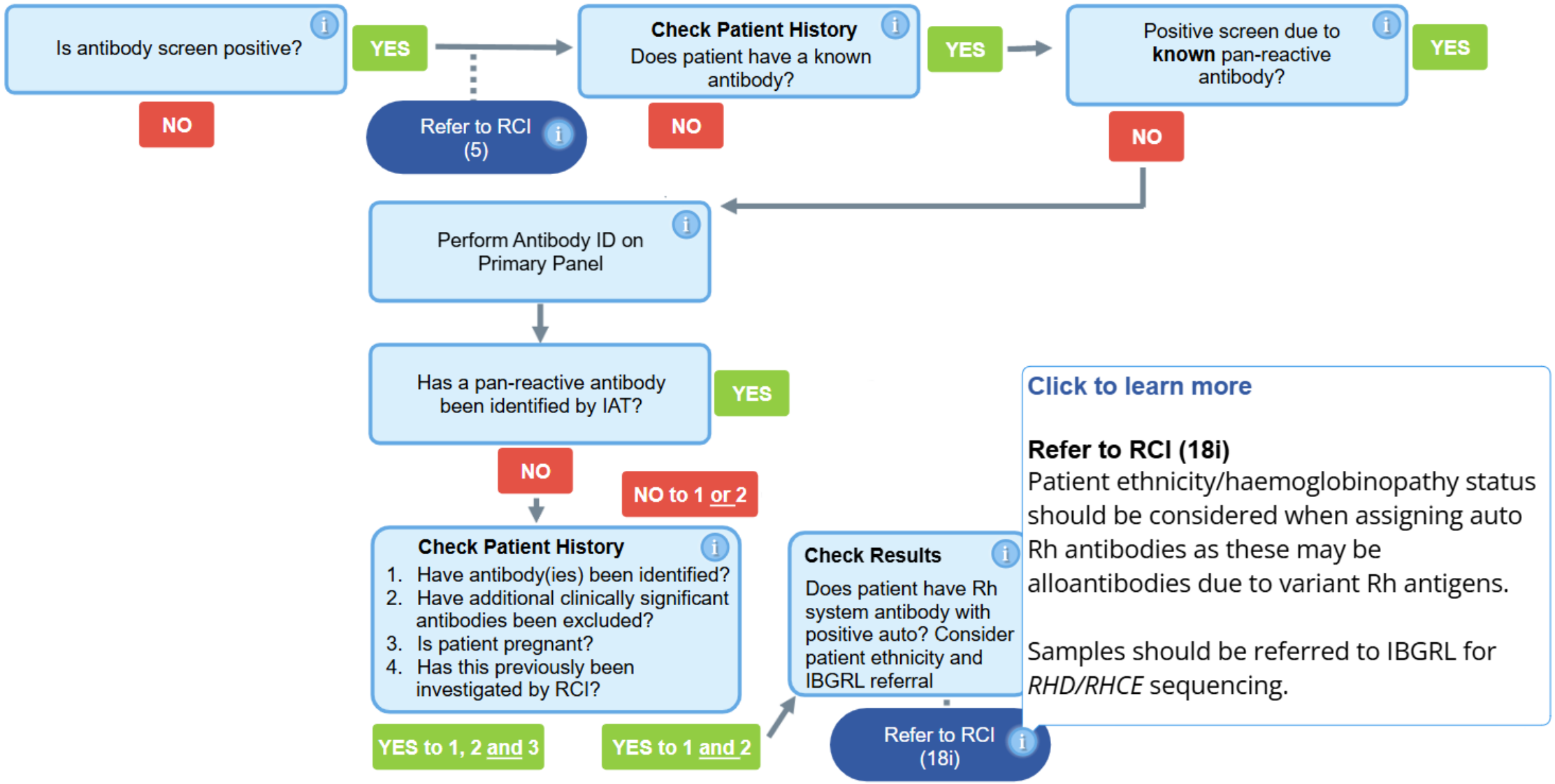
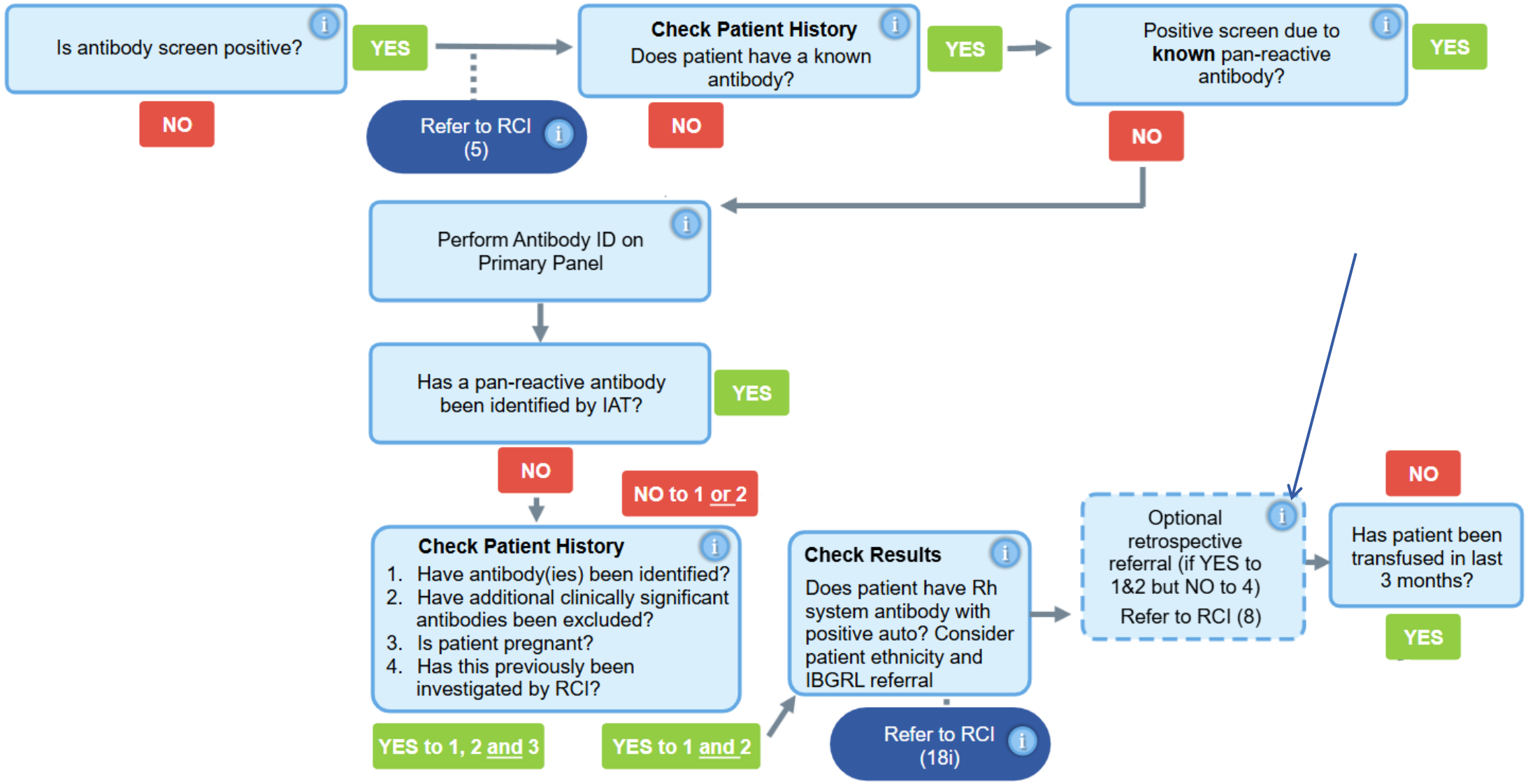
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Click to learn more
Refer to RCI (18i)
Patient ethnicity/haemoglobinopathy status should be considered when assigning auto Rh antibodies as these may be alloantibodies due to variant Rh antigens.
Samples should be referred to IBGRL for *RHD/RHCE* sequencing.


Is antibody screen positive?
YES
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Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
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Has a pan-reactive antibody been identified by IAT?
YES
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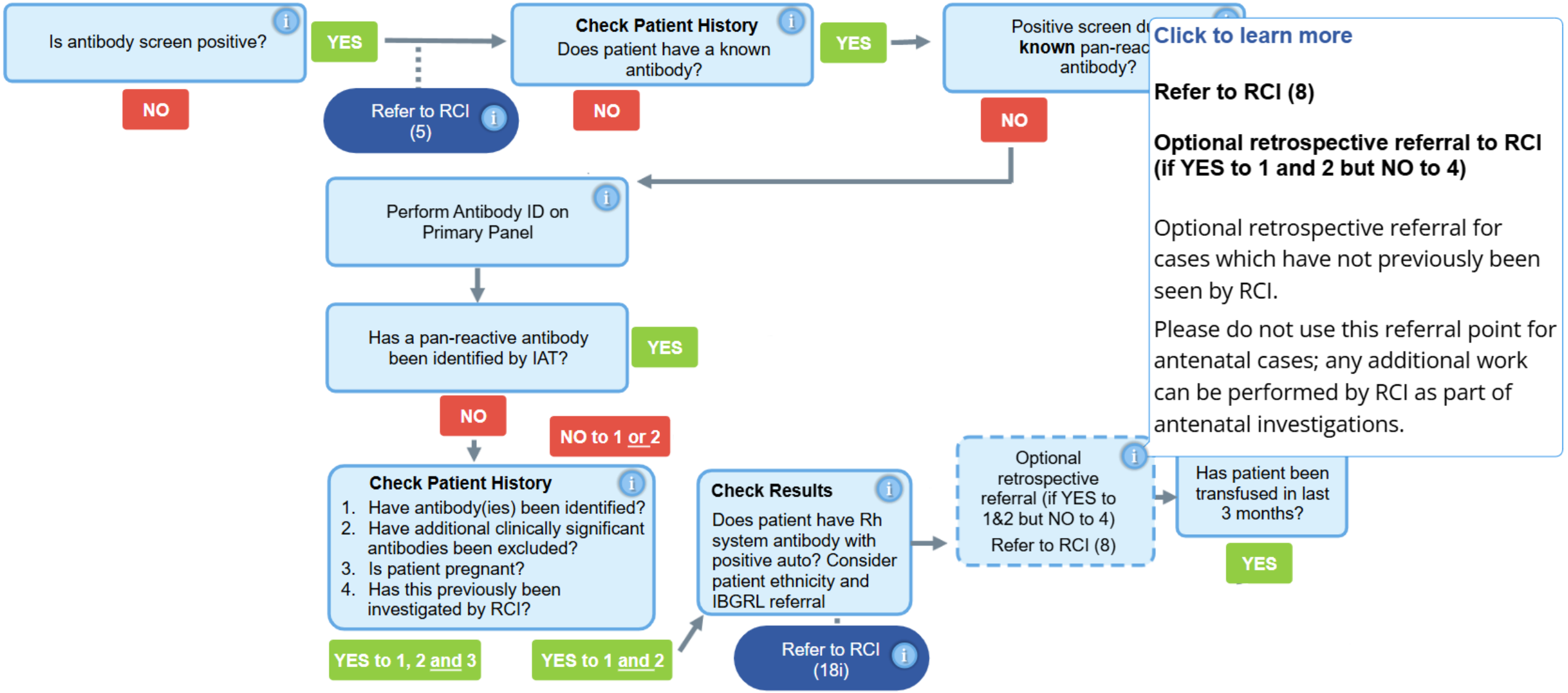
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES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3. Is patient pregnant?
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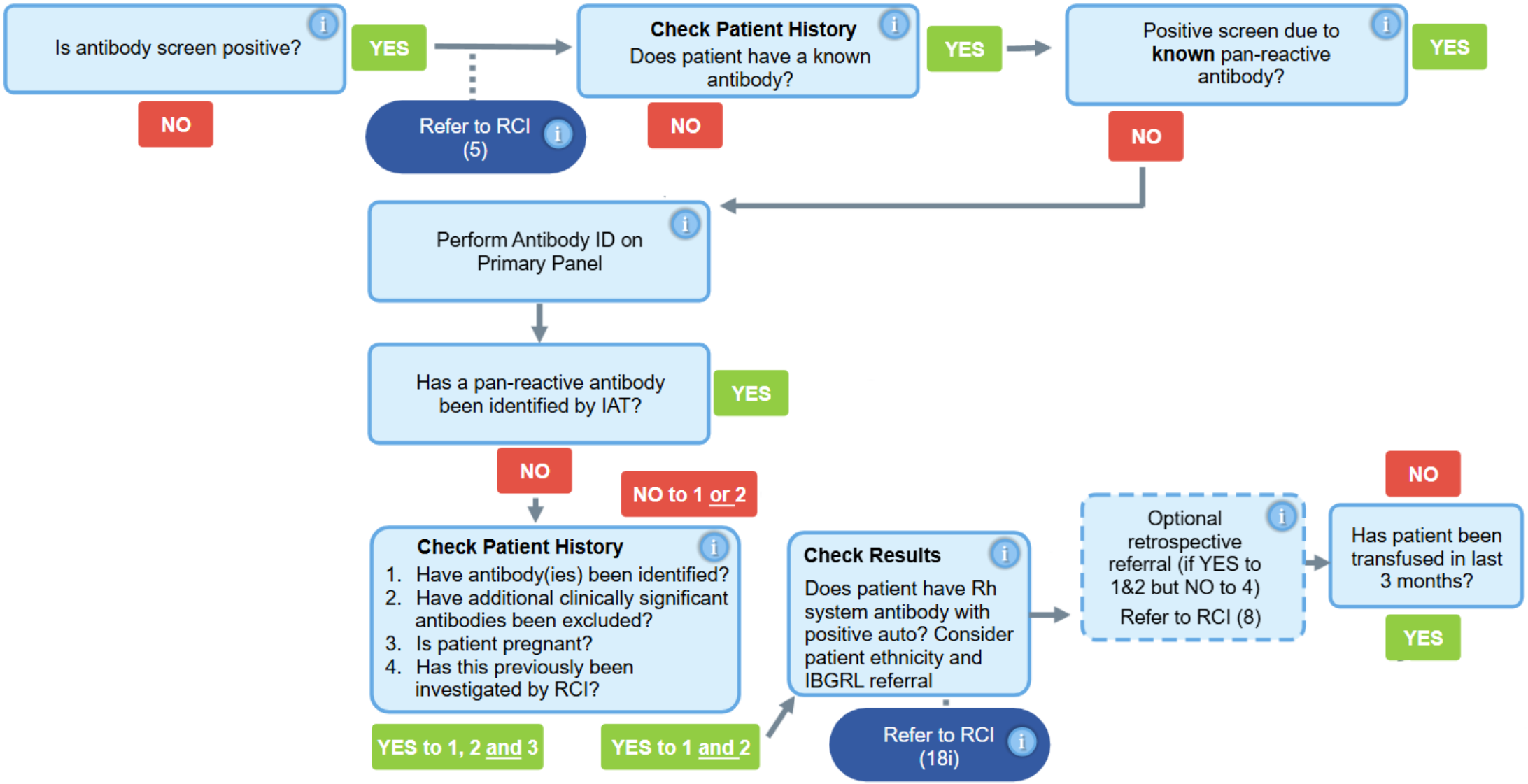
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
YES
Click to learn more
Refer to RCI (8)
Optional retrospective referral to RCI (if YES to 1 and 2 but NO to 4)
Optional retrospective referral for cases which have not previously been seen by RCI.
Please do not use this referral point for antenatal cases; any additional work can be performed by RCI as part of antenatal investigations.


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
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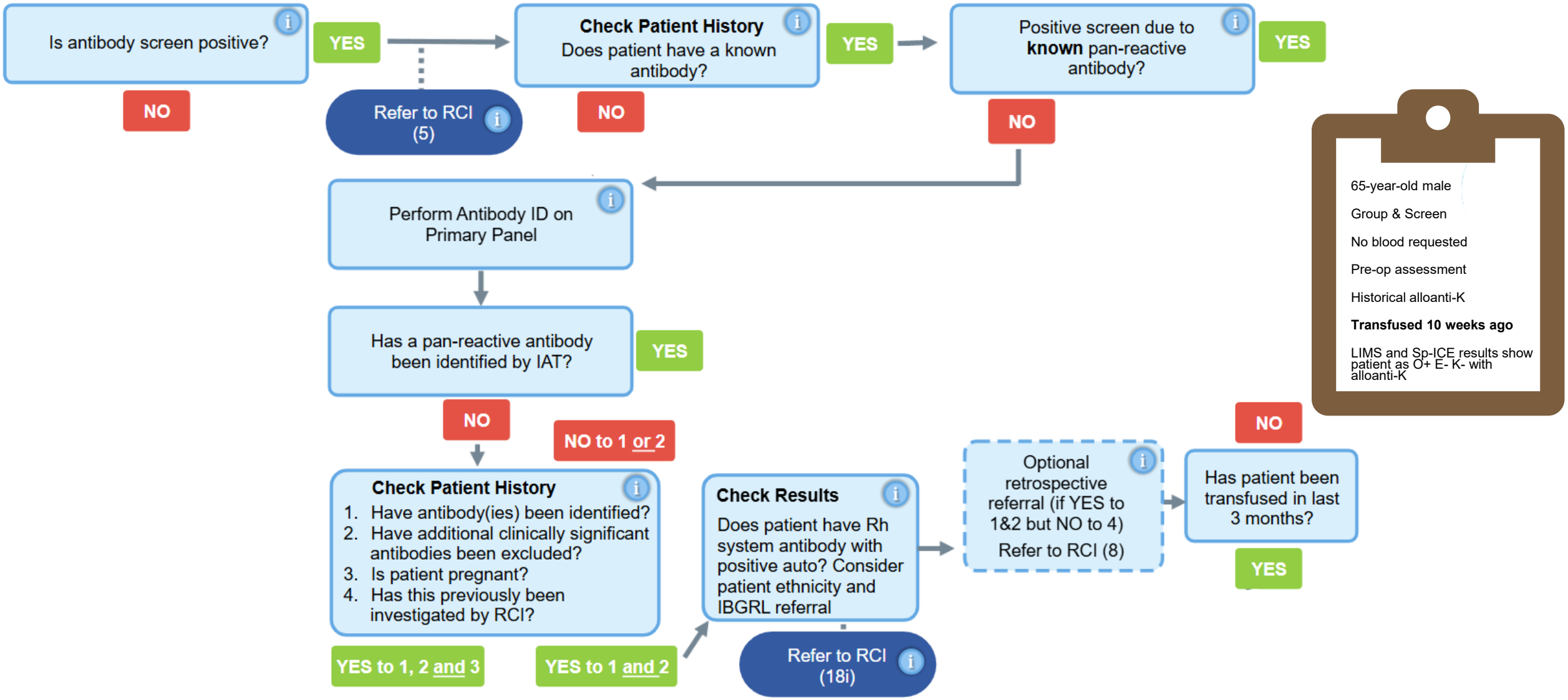
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES


Is antibody screen positive?
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Has a pan-reactive antibody been identified by IAT?
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Check Patient History
1. Have antibody(ies) been identified?
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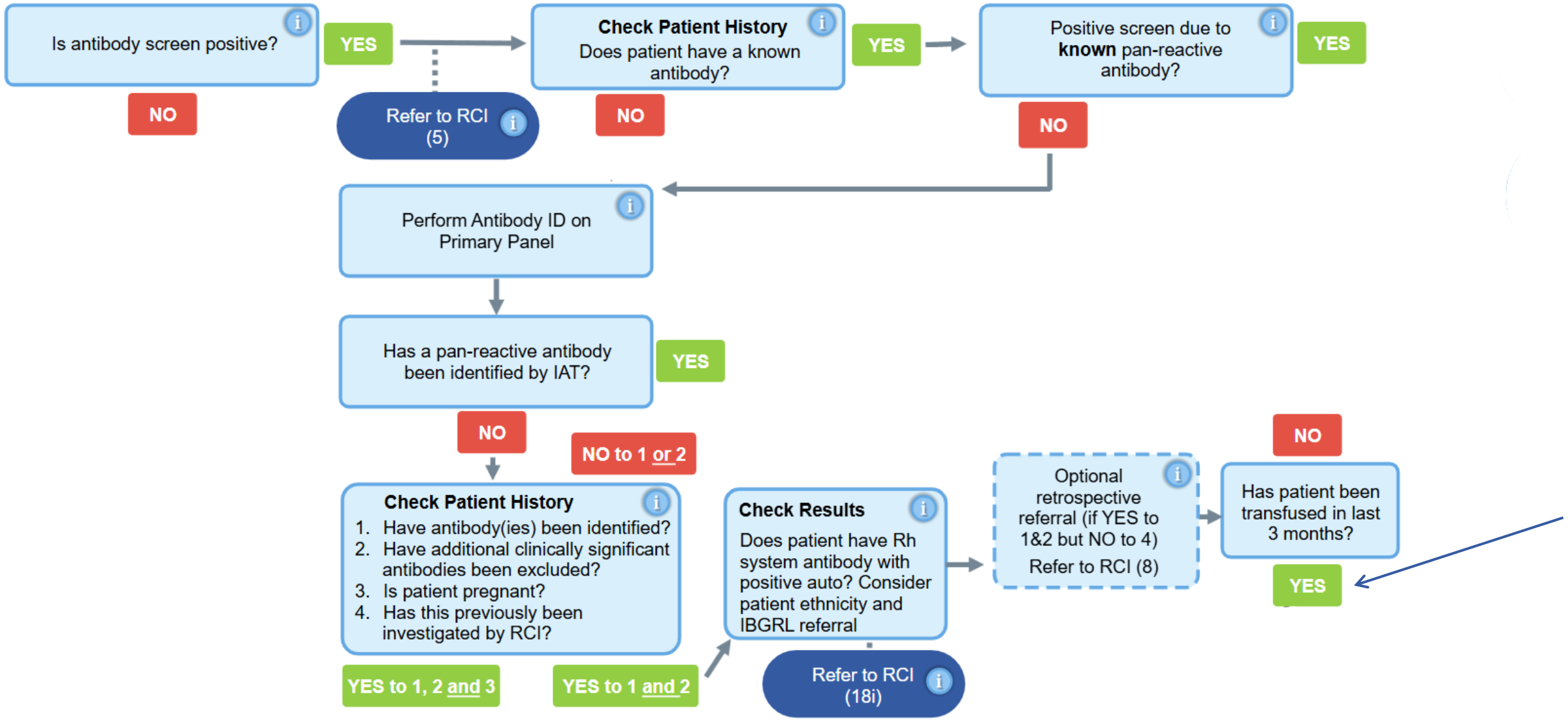
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES
65-year-old male
Group & Screen
No blood requested
Pre-op assessment
Historical alloanti-K
Transfused 10 weeks ago
LIMS and Sp-ICE results show patient as O+ E- K- with alloanti-K


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
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Positive screen due to known pan-reactive antibody?
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Has a pan-reactive antibody been identified by IAT?
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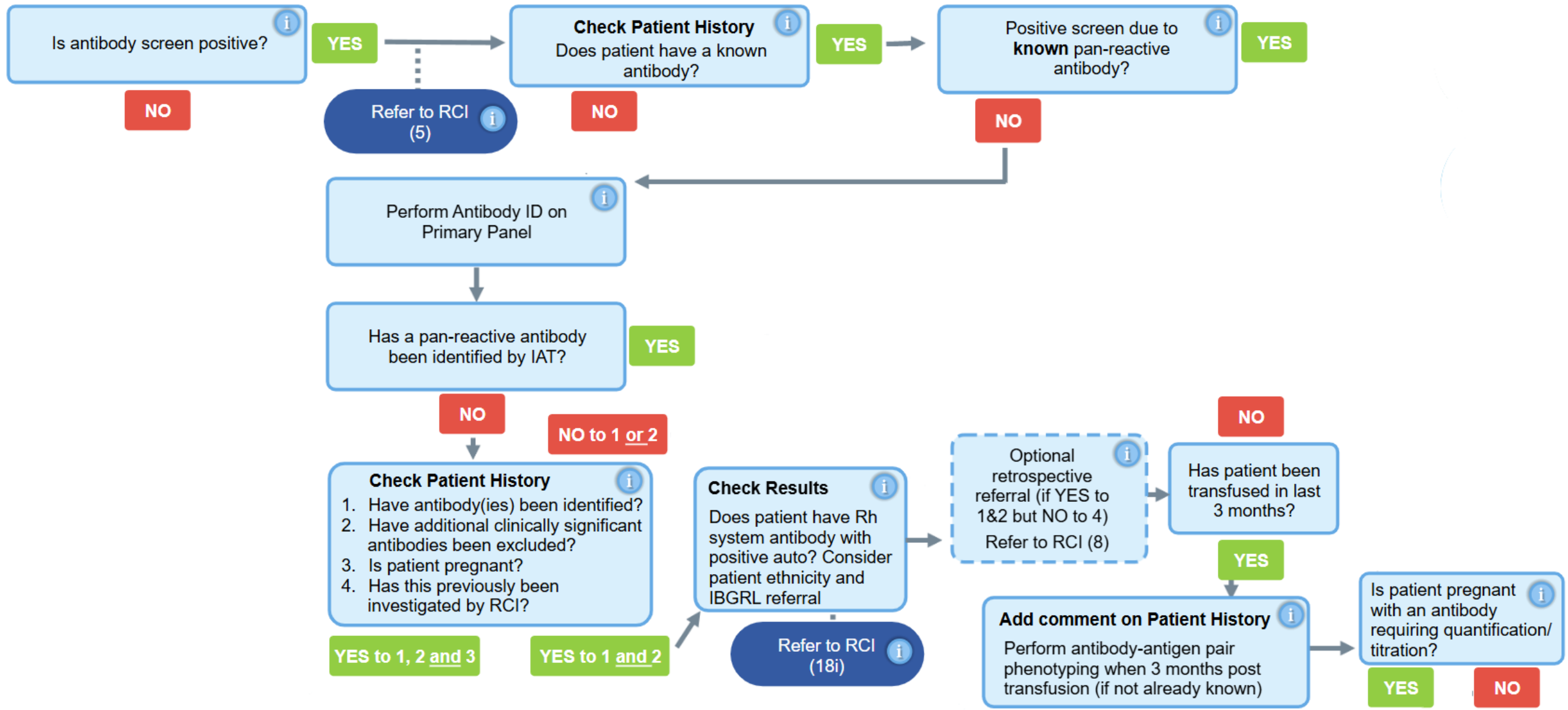
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES



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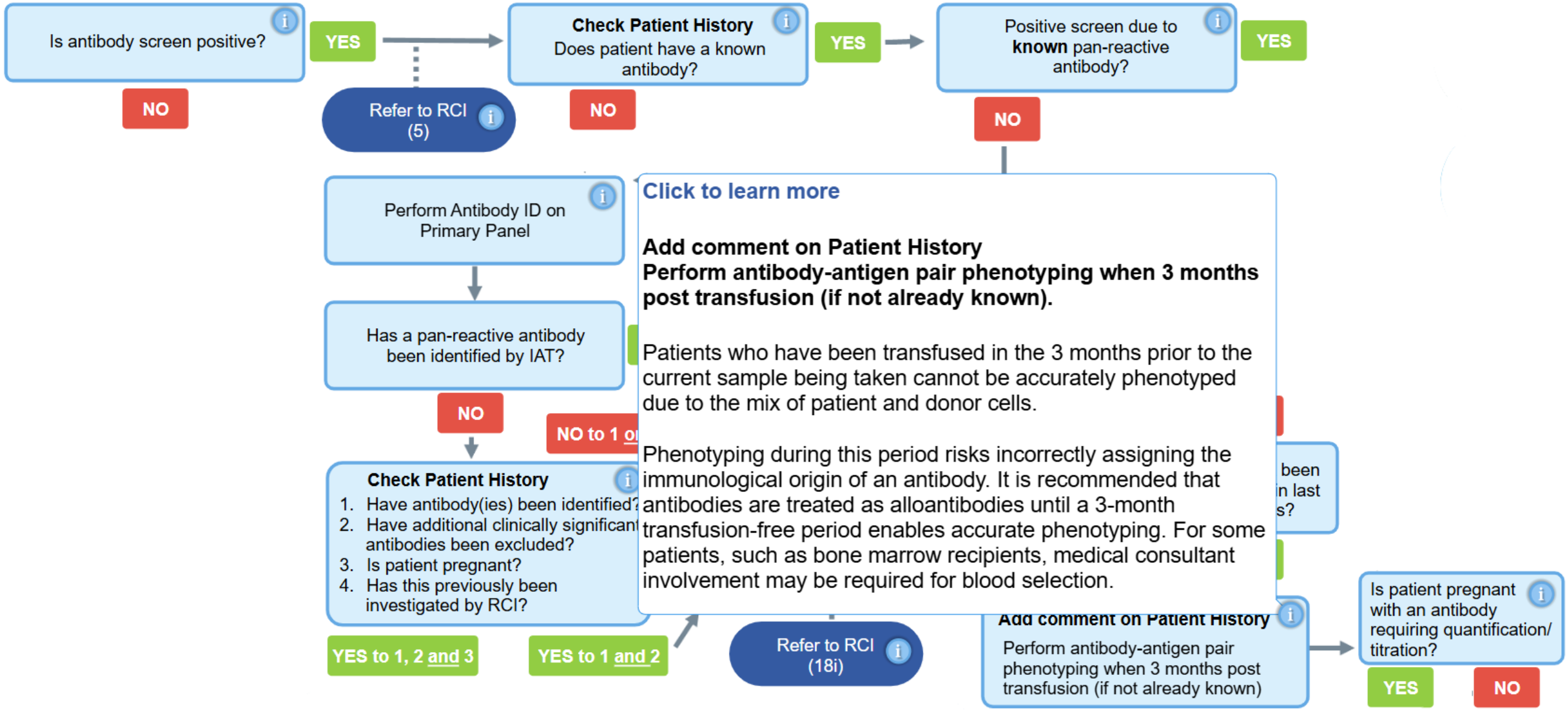
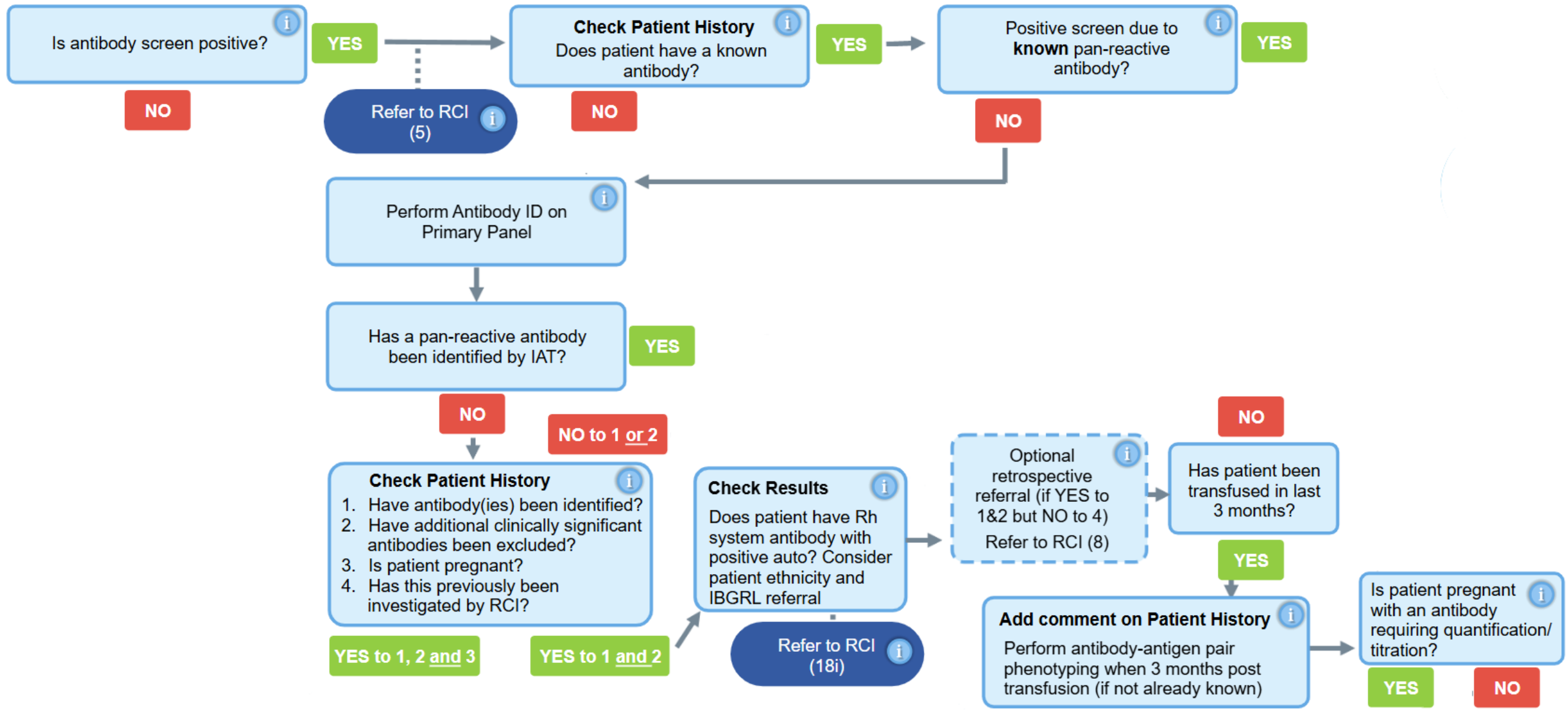
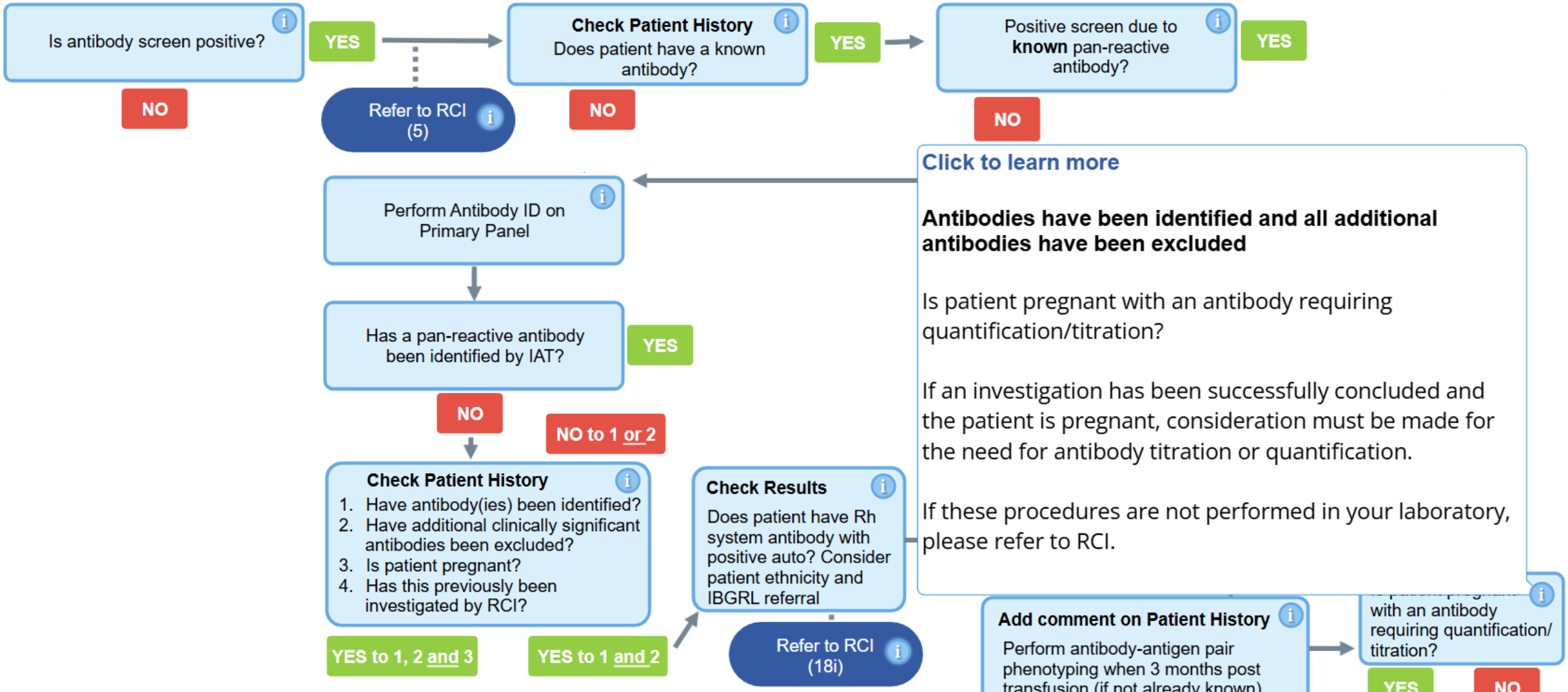

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
NO
NO to 1 or
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Refer to RCI (18i)
Click to learn more
Add comment on Patient History
Perform antibody-antigen pair phenotyping when 3 months post transfusion (if not already known).
Patients who have been transfused in the 3 months prior to the current sample being taken cannot be accurately phenotyped due to the mix of patient and donor cells.
Phenotyping during this period risks incorrectly assigning the immunological origin of an antibody. It is recommended that antibodies are treated as alloantibodies until a 3-month transfusion-free period enables accurate phenotyping. For some patients, such as bone marrow recipients, medical consultant involvement may be required for blood selection.
been in last s?
Add comment on Patient History
Perform antibody-antigen pair phenotyping when 3 months post transfusion (if not already known)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO

Add comment on patient history

- Known alloanti-K
- Not-specified anti-Jk^{a} - perform phenotyping 3 months post transfusion
- (Anti-Kp^{a} not excluded)

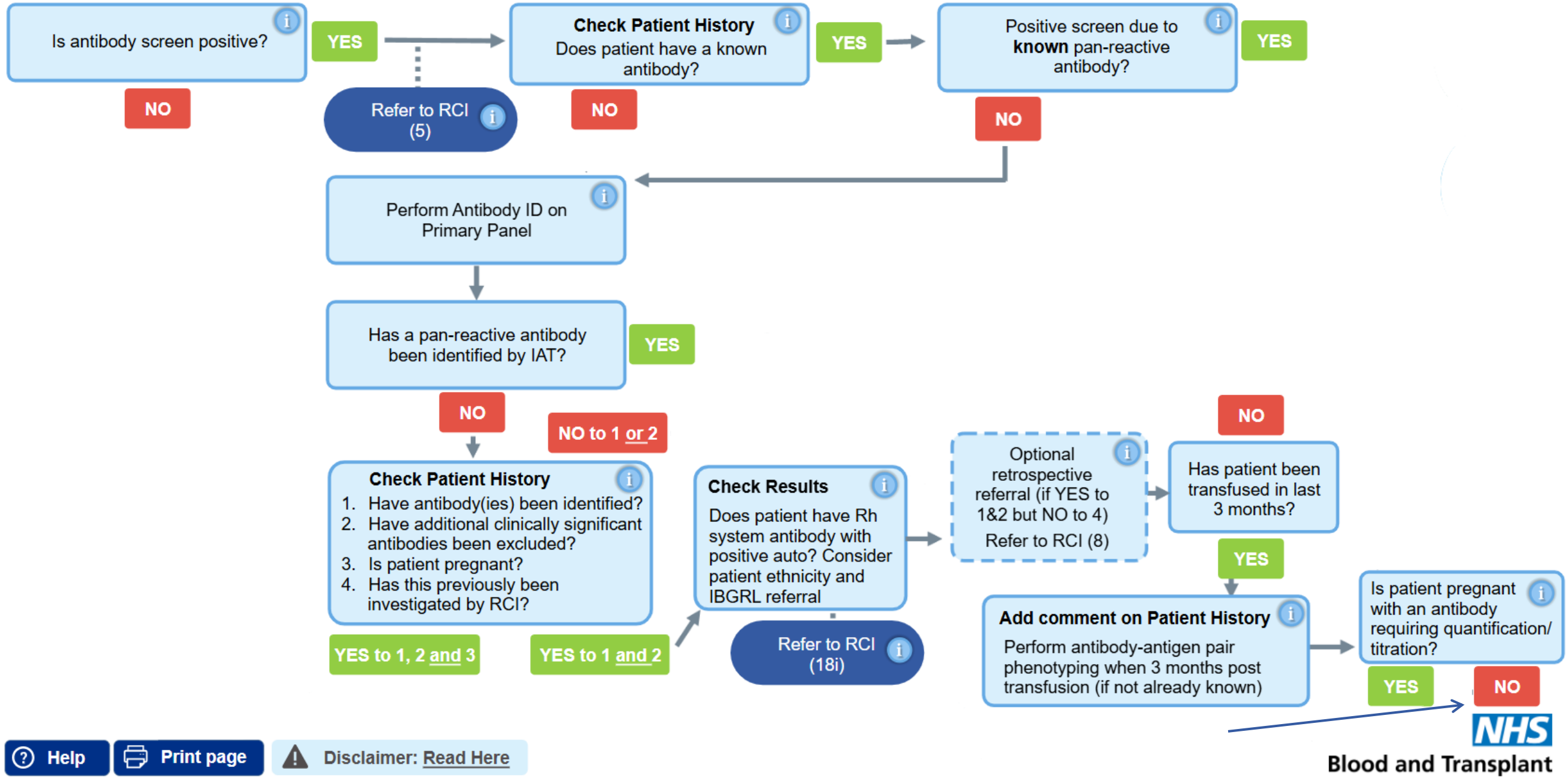


NHS Blood and Transplant


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Click to learn more
Antibodies have been identified and all additional antibodies have been excluded
Is patient pregnant with an antibody requiring quantification/titration?
If an investigation has been successfully concluded and the patient is pregnant, consideration must be made for the need for antibody titration or quantification.
If these procedures are not performed in your laboratory, please refer to RCI.
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Add comment on Patient History
Perform antibody-antigen pair phenotyping when 3 months post transfusion (if not already known)
with an antibody requiring quantification/ titration?
YES
NO

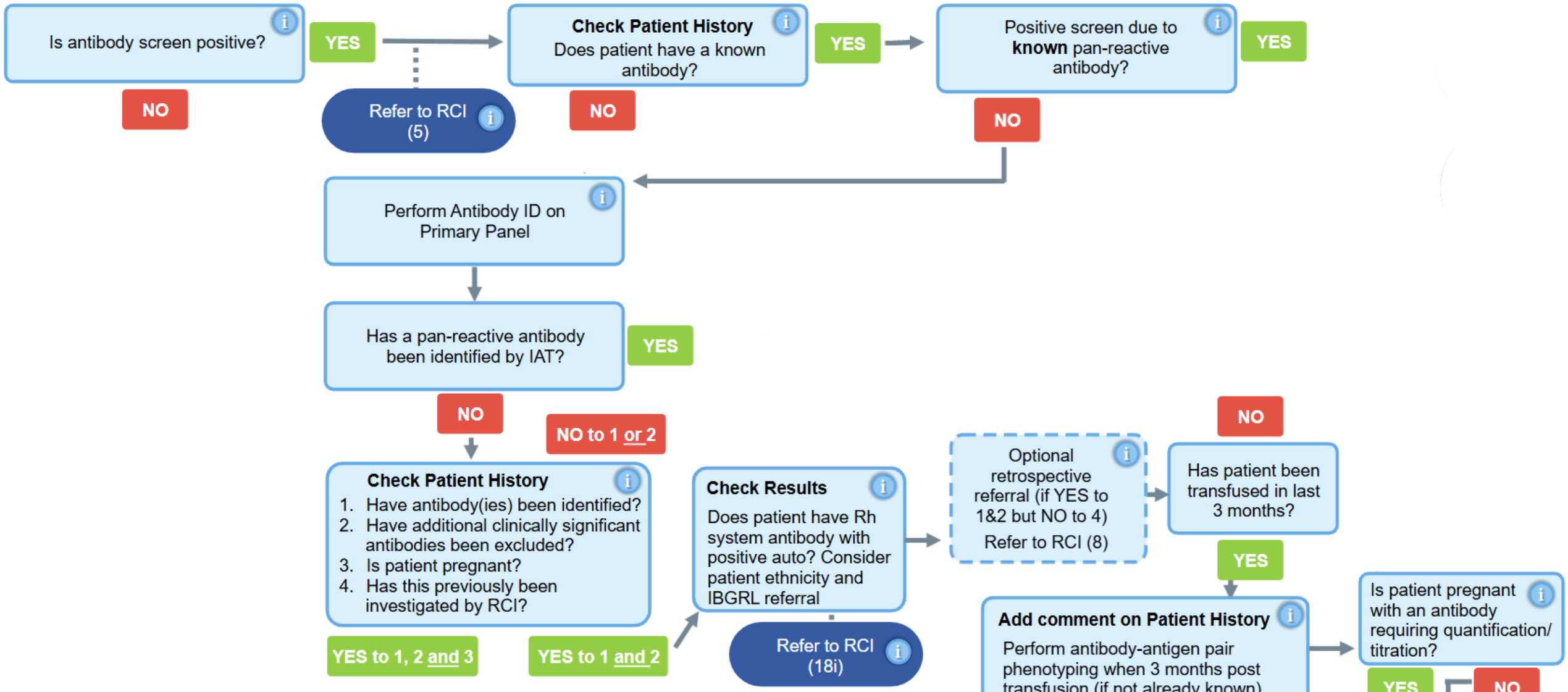
RCI Assist

Grouping | Antibody ID | Antenatal | Panreactives | Elutions | Transfusion



Help | Print page | Disclaimer: Read Here

NHS Blood and Transplant



NHS Blood and Transplant

Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO

YES

Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO

YES

65-year-old male

Group & Screen

No blood requested

Pre-op assessment

Historical alloanti-K

Transfused 10 weeks ago

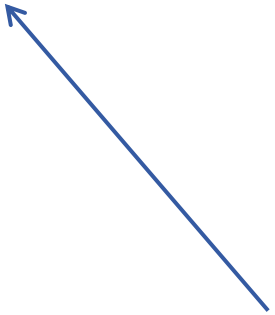
LIMS and Sp-ICE results show patient as O+ E- K- with alloanti-K

Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO

YES



Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO → Go to Transfusion Section

YES

Transfusion Required?

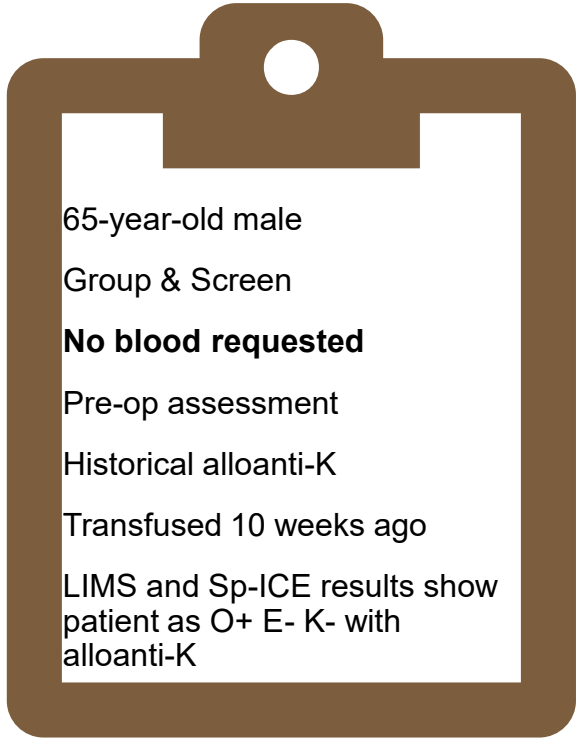
NO

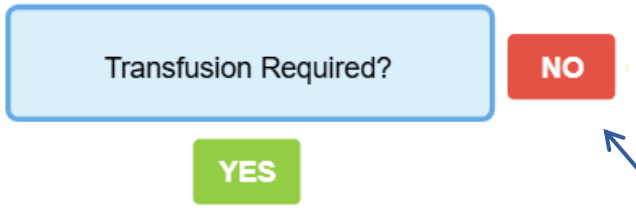
YES

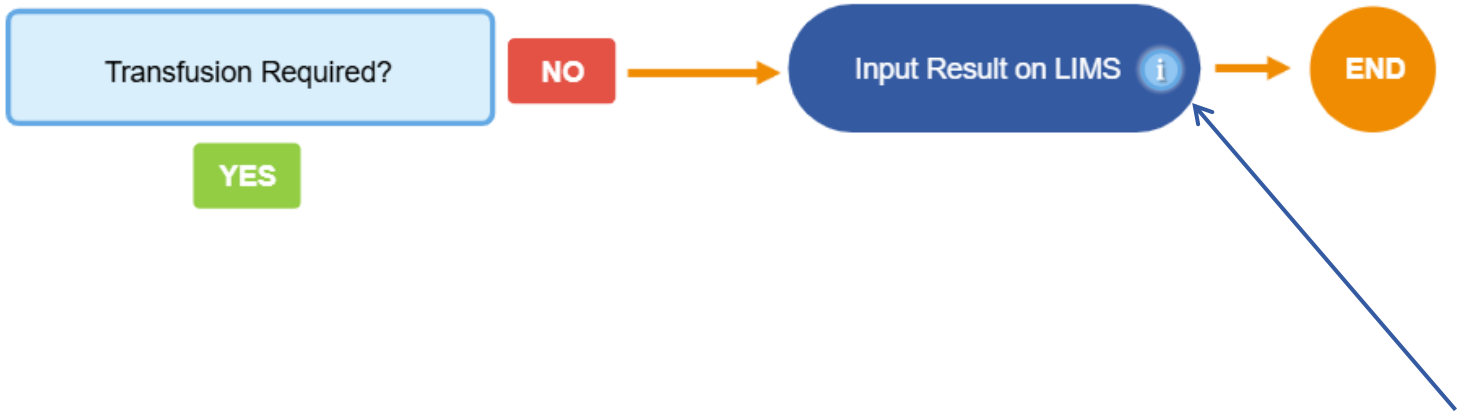
Transfusion Required?

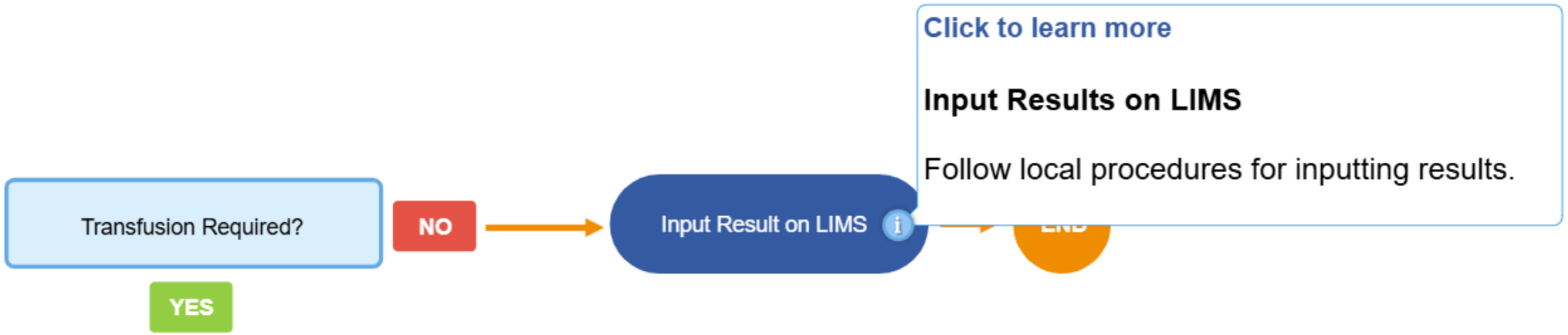
NO

YES

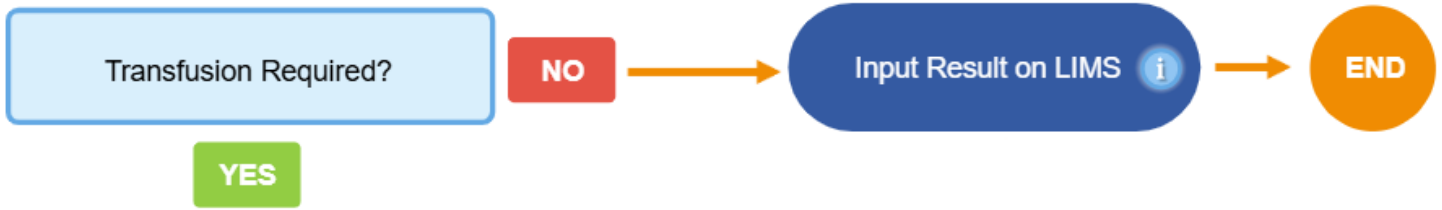



Transfusion Required?
NO
YES


Transfusion Required?
NO
YES
Input Result on LIMS
END


Transfusion Required?
NO
YES
Input Result on LIMS
Click to learn more
Input Results on LIMS
Follow local procedures for inputting results.

Stop right now!
I need somebody with a reset button


Transfusion Required?
NO
Input Result on LIMS
END
YES

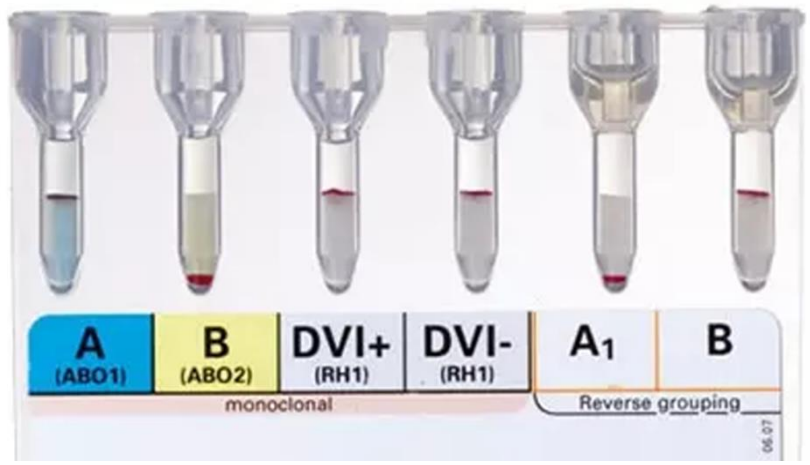
Would you like to reset?

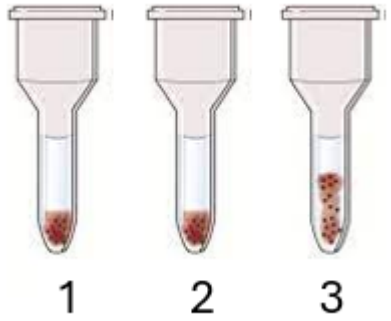
Please note: This will remove all progress made in all sections (Grouping, Antibody ID, Antenatal, Panreactives, Elutions and Transfusion).

Yes | No

Case 2

- 75-year-old male
- Group & Screen
- 2 units RBC
- “Anaemia”
- Not previously seen by your lab
- Transfused at a different HTL 3 weeks ago
- Sp-ICE results show patient as A+ E- K- with no historical antibodies
- Previously seen by RCI





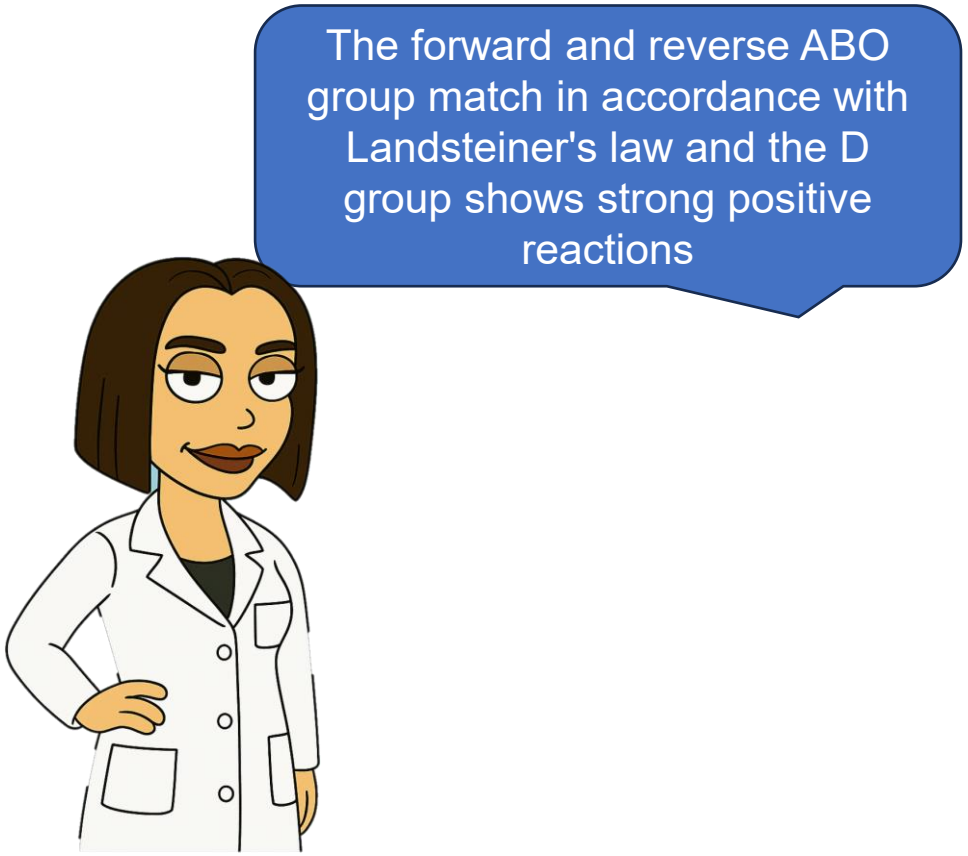
Patient group & screen results

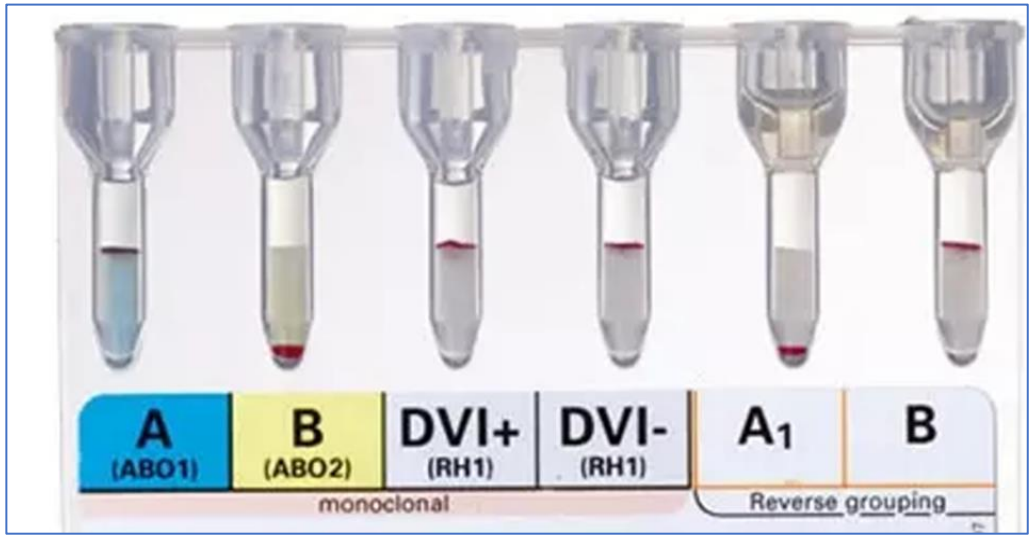
Is ABO and D group interpretable?

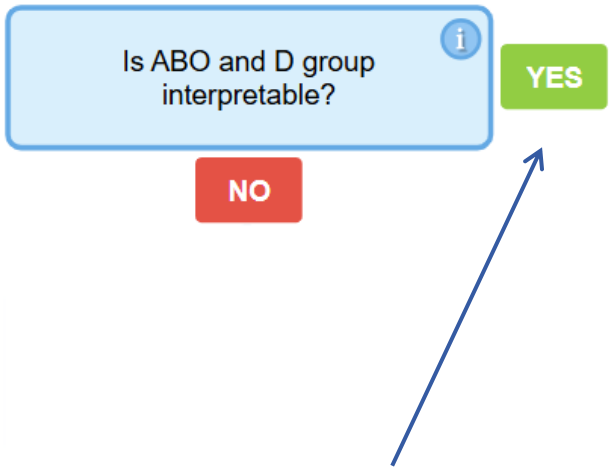
YES

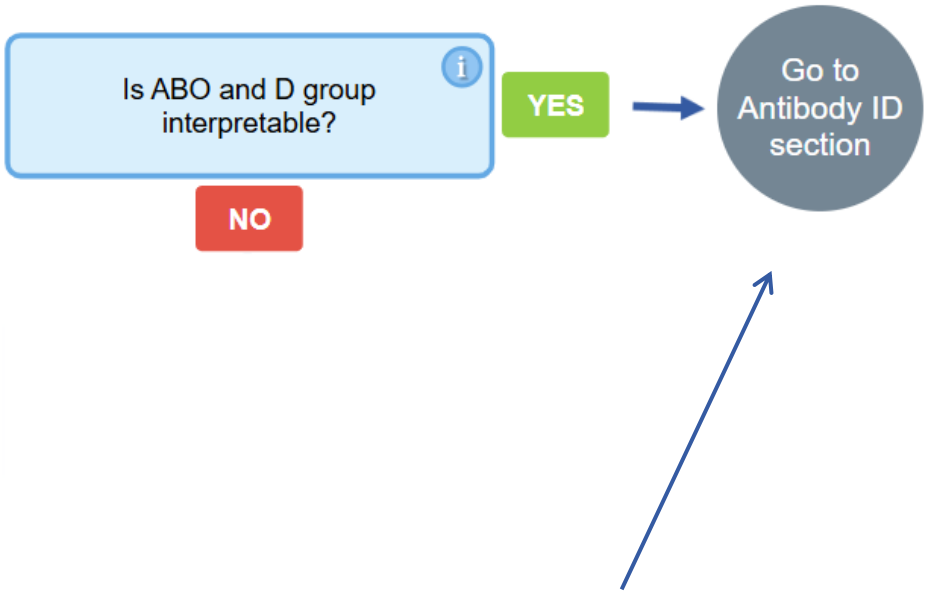
NO

Yes, the ABO and D group is interpretable






Is ABO and D group interpretable?
YES
NO


Is ABO and D group interpretable?
YES
NO
Go to Antibody ID section

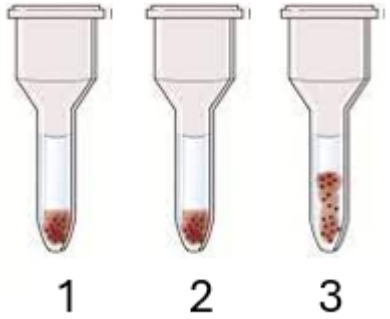
Is antibody screen positive?

YES

NO

Yes, the antibody screen is positive

Positive result obtained by IAT

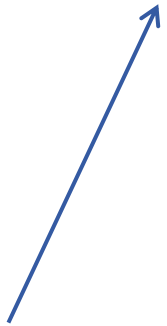


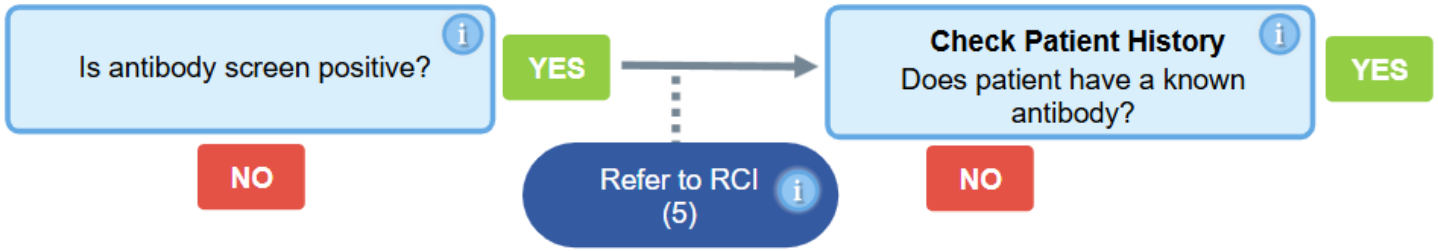
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	**$R_1^wR_1$**	+	+	0	0	+	+	0	+	0	**0**	**0**	**+**	**0**	**0**	**+**	**+**	**0**	**0**	**+**		1
2	**R_2R_2**	+	0	+	+	0	0	+	0	+	**0**	**0**	**+**	**0**	**+**	**0**	**0**	**+**	**+**	**0**		1
3	**rr**	0	0	0	+	+	+	0	+	0	**4**	**+**	**0**	**0**	**0**	**+**	**+**	**0**	**+**	**0**		2

Is antibody screen positive?

YES

NO





75-year-old male

Group & Screen

2 units RBC

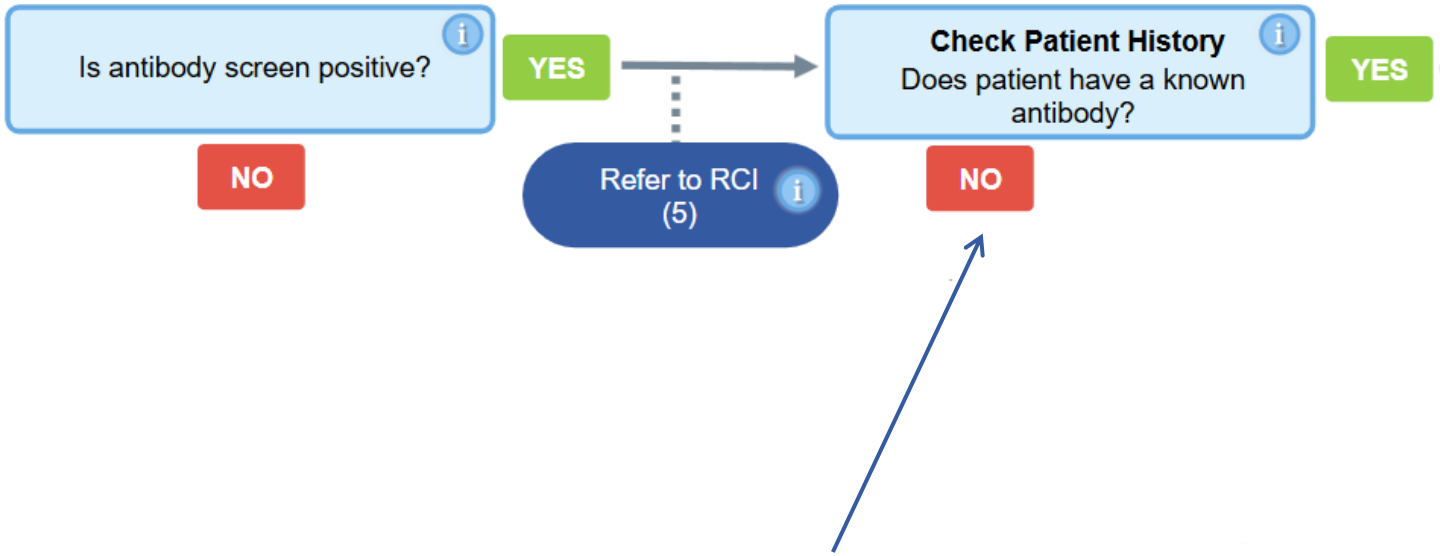
“Anaemia”

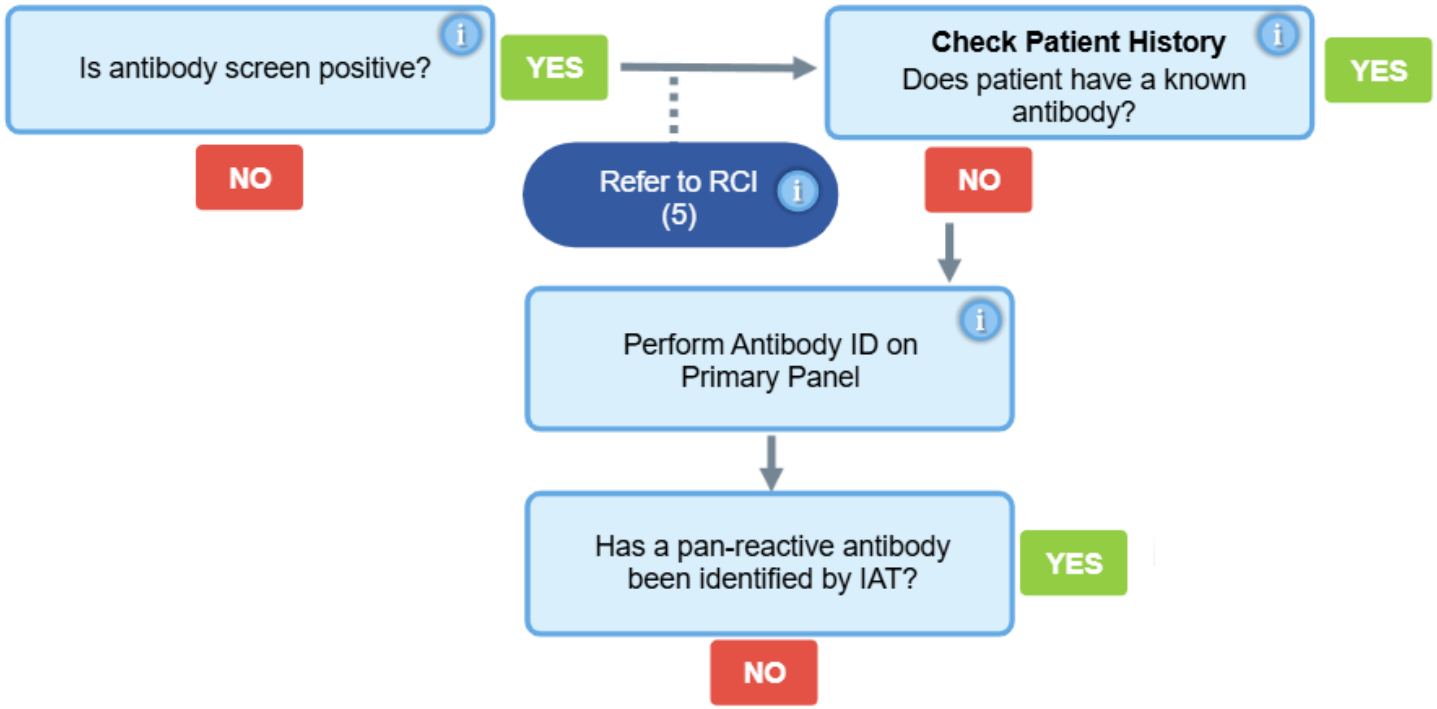
Not previously seen by your lab

Transfused at a different HTL 3 weeks ago

Sp-ICE results show patient as A+ E- K- with no historical antibodies

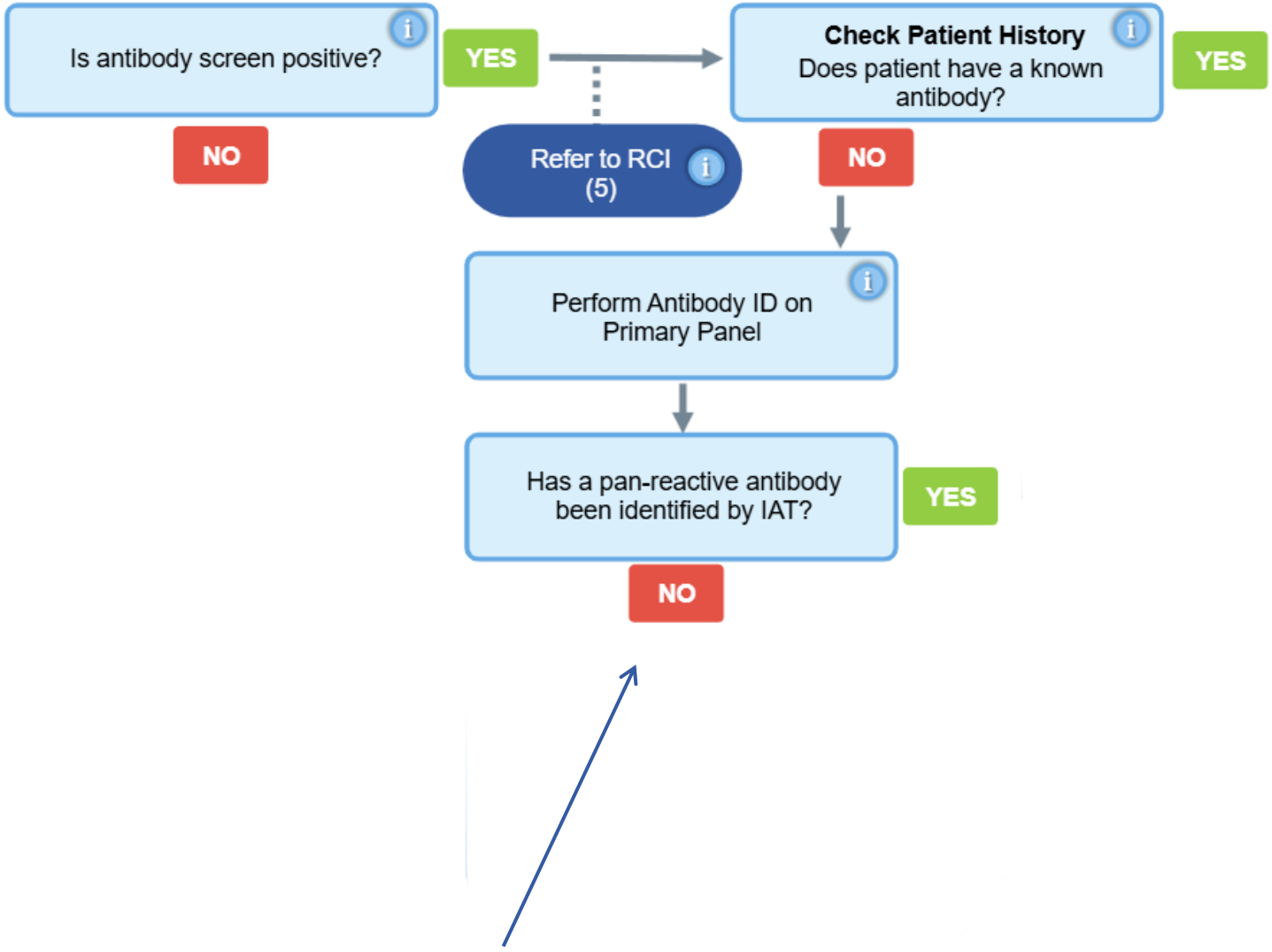
Previously seen by RCI

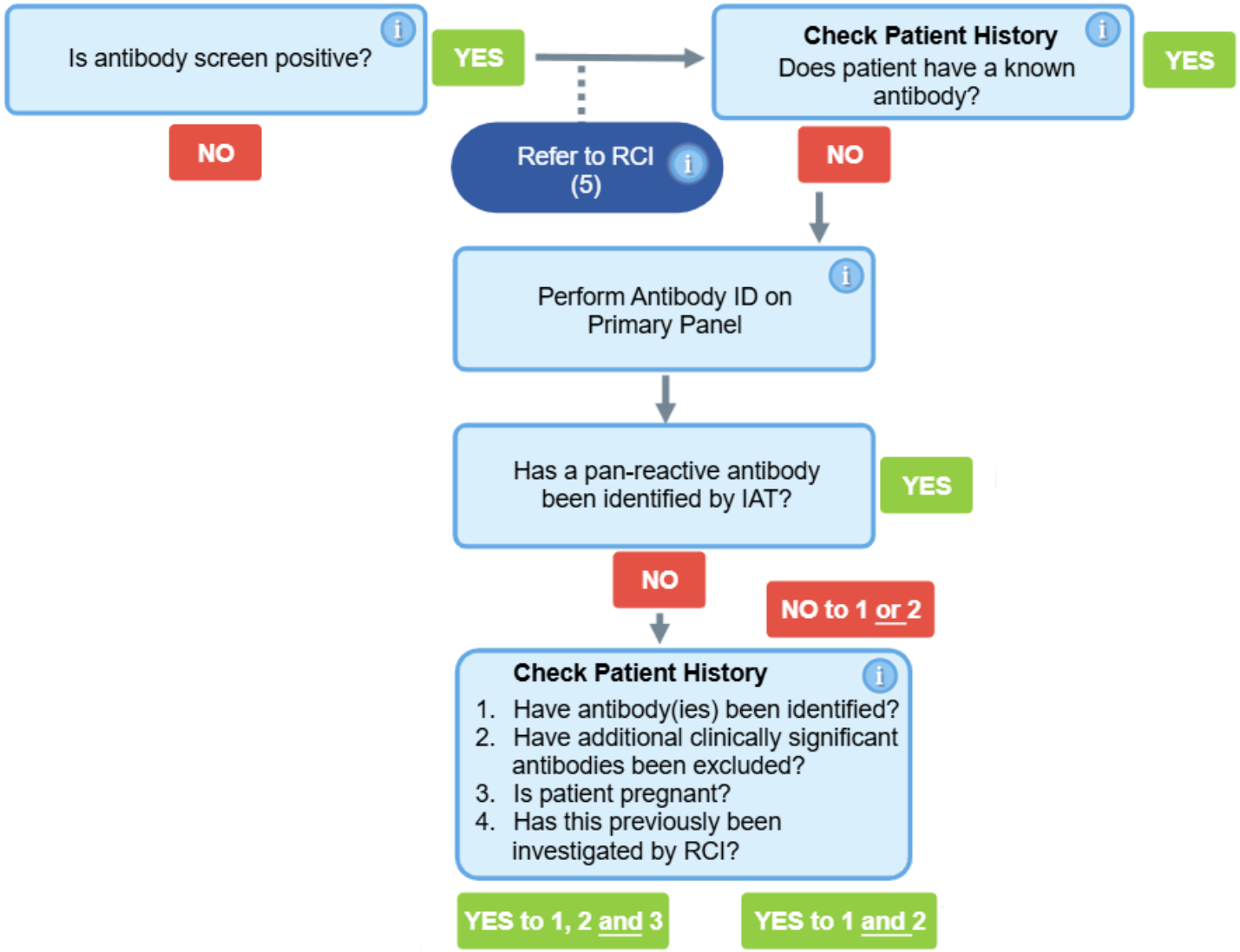

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO

Case 2 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	+	0	+	0	+	0		4	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	+	+	0	HLA+ Do(a+b+)	2	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	0	+	+	0	+	+		2	2
5	r''r	0	0	+	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	0
6	rr	0	0	0	+	+	+	0	0	+	2	0	+	0	0	0	+	0	+	0	+		0	0
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0	0	+	+	0		2	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+	Cob+	0	0
9	rr	0	0	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+		3	0
10	rr	0	0	0	+	+	+	0	0	+	4	+	0	+	0	0	+	+	0	+	0	Cob+	2	2
																						Auto	3	/
																						K control	2	/


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

Case 2 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	+	0	+	0	+	0		4	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	+	+	0	HLA+ Do(a+b+)	2	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	0	+	+	0	+	+		2	2
5	r''r	0	0	+	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	0
6	rr	0	0	0	+	+	+	0	0	+	2	0	+	0	0	0	+	0	+	0	+		0	0
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0	0	+	+	0		2	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+	Cob+	0	0
9	rr	0	0	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+		3	0
10	rr	0	0	0	+	+	+	0	0	+	4	+	0	+	0	0	+	+	0	+	0	Cob+	2	2
																						Auto	3	/
																						K control	2	/

Probable anti-S, anti-Jk^a
Have not excluded anti-Lu^a

Is anti-Lu^{a} clinically significant in Transfusion?

Yes, no or unsure

TRANSFUSION MEDICINE
Official Journal of the British Blood Transfusion Society
British Blood Transfusion Society

Transfusion 2024

NHS Blood and Transplant

BSH Guidelines – clinical significance of red cell antibodies

System	Specificity	Likely clinical significance in transfusion
MNS	Anti-S	Yes
Kidd	Anti-Jk^{a}	Yes
Lu	Anti-Lu^{a}	No

https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-3148.2012.01199.x

Case 2 – ABID Panel 1

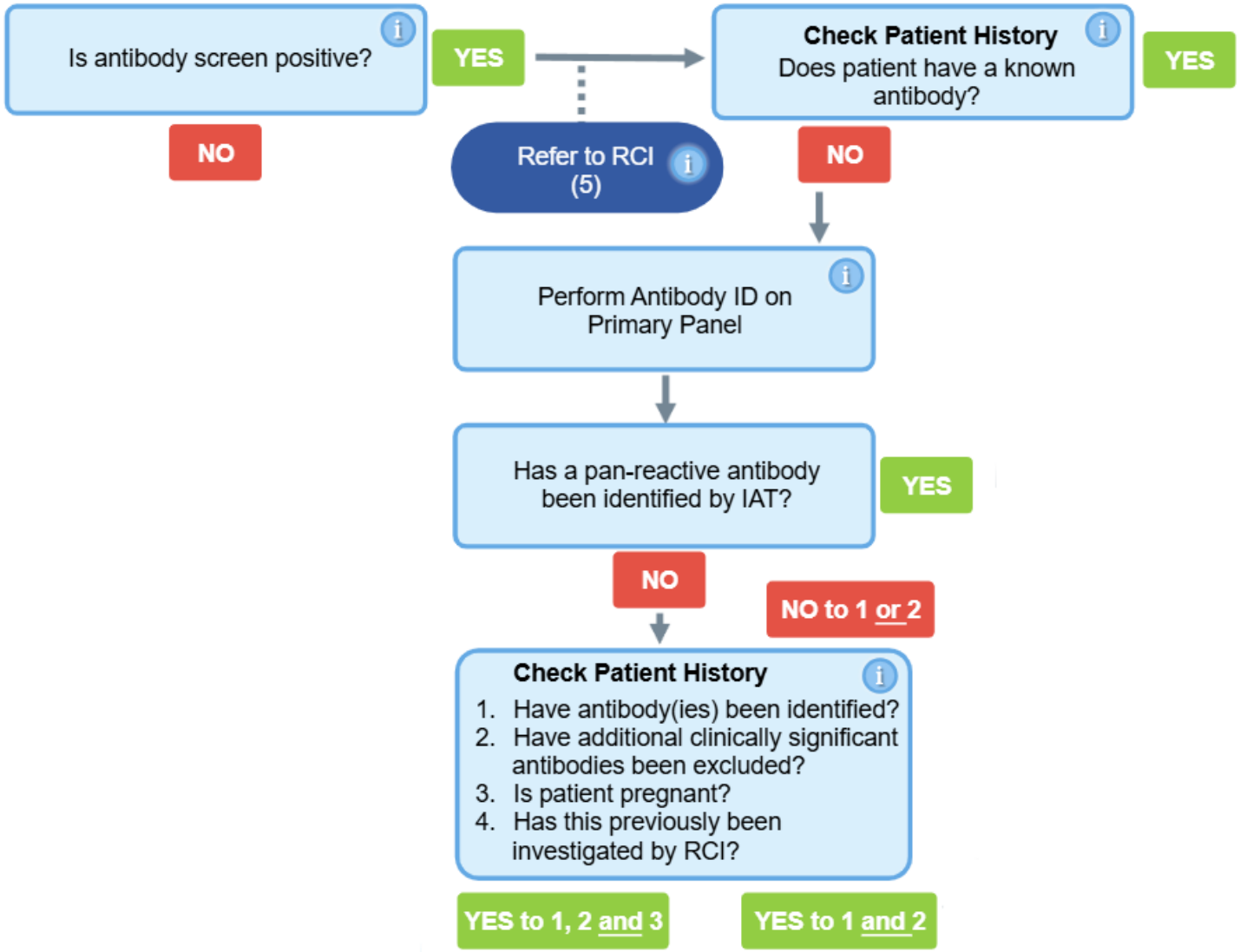
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	0	0	+	0	+	0	0	+	0	+	→	0	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	+	0	+	0	+	0		4	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	+	+	0	HLA+ Do(a+b+)	2	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	0	+	+	0	+	+		2	2
5	r''r	0	0	+	+	→		+	0	0	0	0	0	+	0	0	+	+	0	0	+	→	2	0
6	rr	0	0	0	+	+	+	0	0	+	2	0	+	0	0	0	+	0	+	0	+	→	0	0
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0	0	+	+	0		2	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+	Cob+	0	0
9	rr	0	0	0	+	→		+	0	4	0	0	+	0	0	+	0	+	0	+	→	3	0
10	rr	0	0	0	+	+	+	0	0	+	4	+	0	+	0	0	+	+	0	+	0	Cob+	2	2
																						Auto	3	/
																						K control	2	/

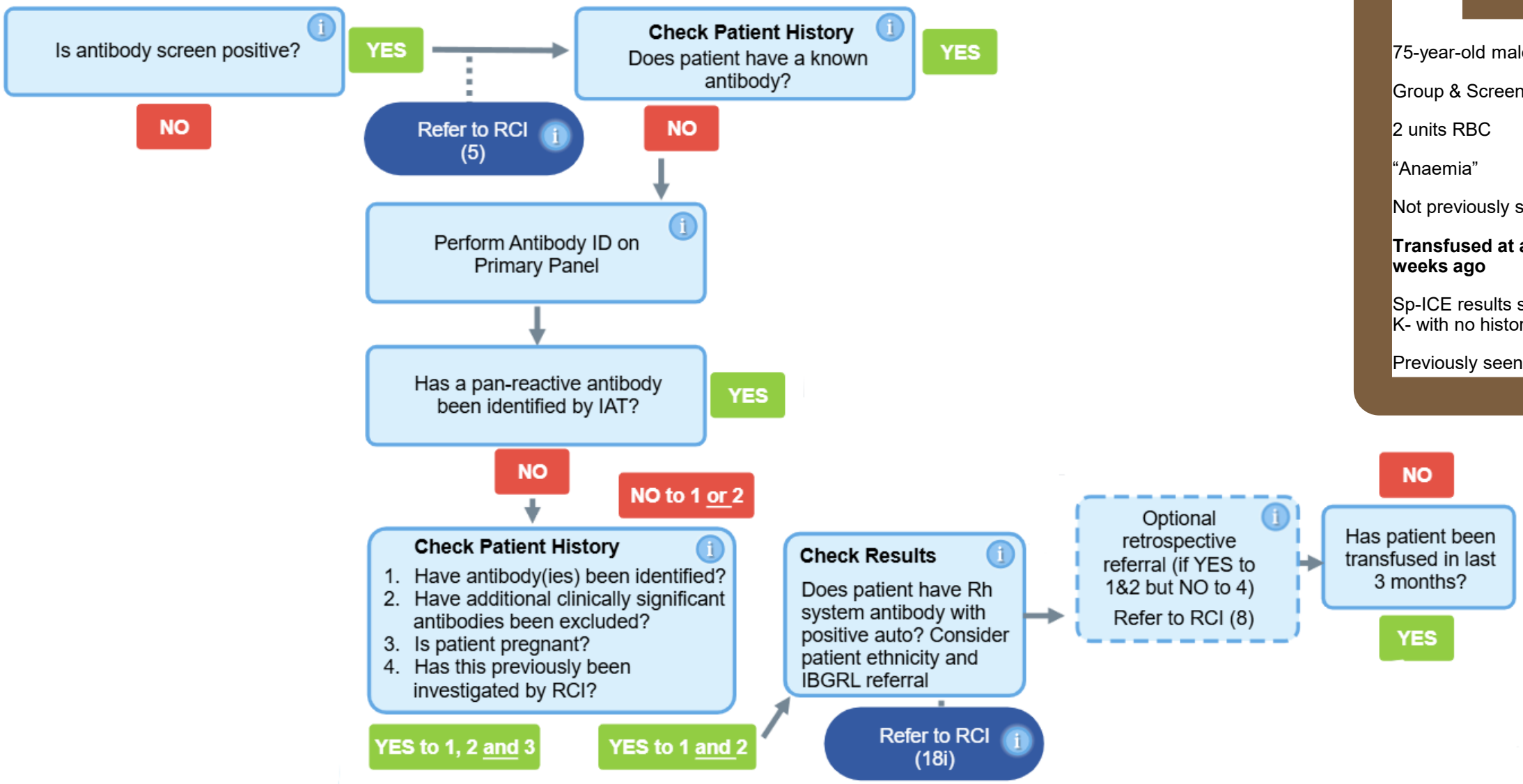
Case 2 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	+	0	+	0	+	0		4	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+			+	0	Do(a+b+)	2	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	0	+	+	0	+	+		2	2
5	r''r	0	0	+	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	0
6	rr	0	0	0	+	+	+	0	0	+	2	0	+	0	0	0	+	0	+	0	+		0	0
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0			+	0		2	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+	Cob+	0	0
9	rr	0	0	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+		3	0
10	rr	0	0	0	+	+	+	0	0	+	4	+	0	+	0	0	+	+	0	+	0	Cob+	2	2
																						Auto	3	/
																						K control	2	/

Case 2 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
2	R_1R_1	+	+	0	0				+	0	4	0	+	+	0	+	0			+	0		4	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	+	+	0	HLA+ Do(a+b+)	2	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	0	+	+	0	+	+		2	2
5	r''r	0	0	+	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	0
6	rr	0	0	0	+	+	+	0	0	+	2	0	+	0	0	0	+	0	+	0	+		0	0
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0	0	+	+	0		2	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+	Cob+	0	0
9	rr	0	0	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+		3	0
10	rr	0	0	0	+	+	+	0	0			+	0	+	0	0	+			+	0	Cob+	2	2
																						Auto	3	/
																						K control	2	/


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2



75-year-old male

Group & Screen

2 units RBC

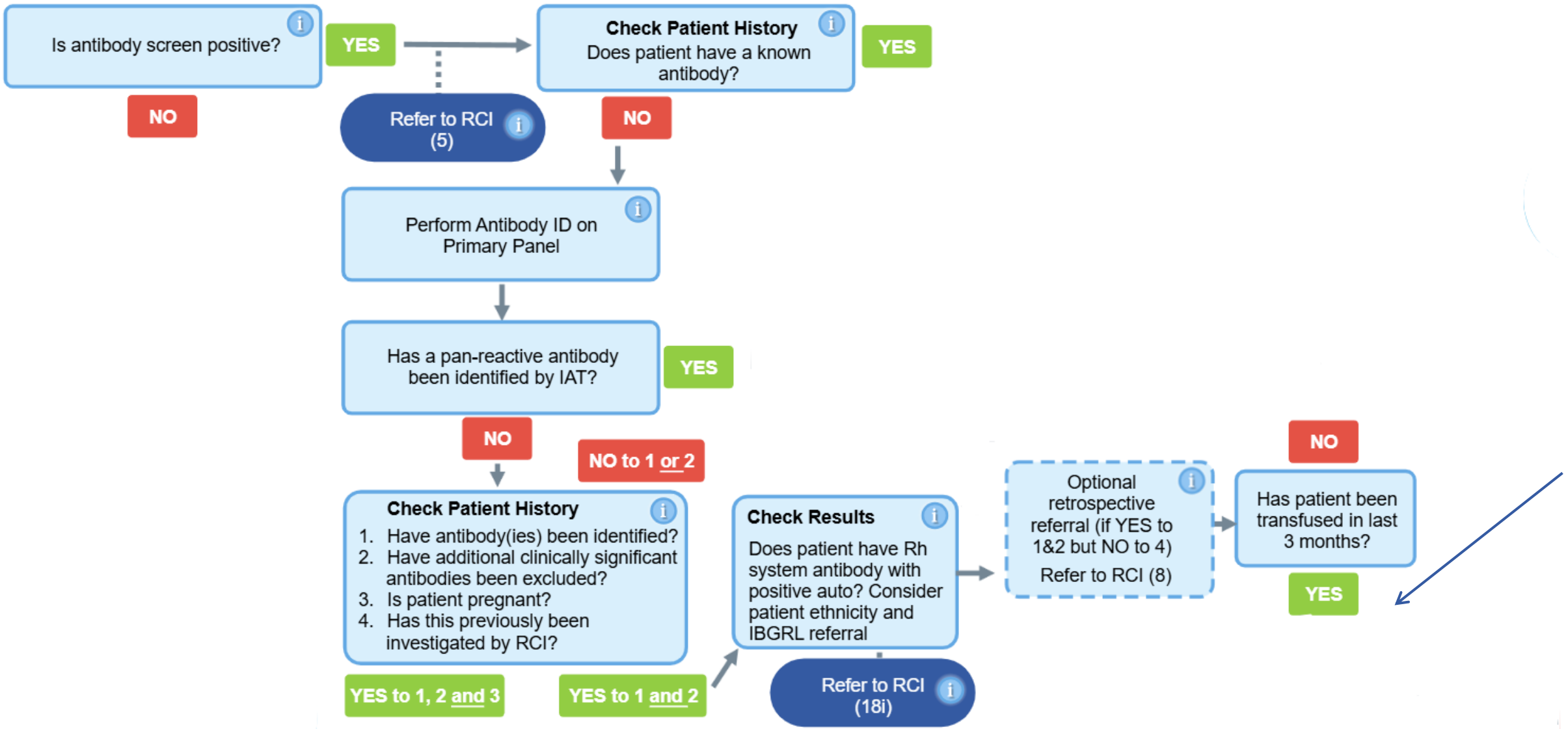
“Anaemia”

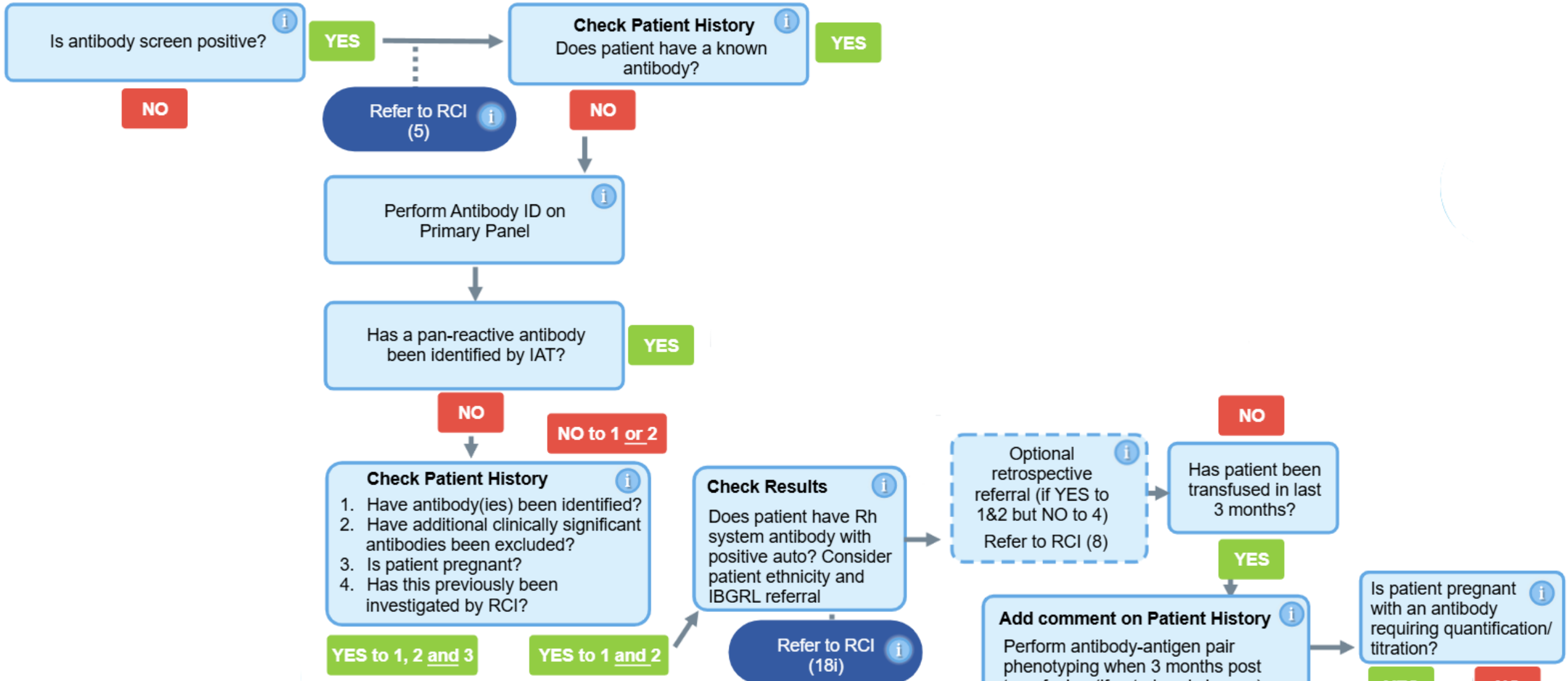
Not previously seen by your lab

Transfused at a different HTL 3 weeks ago

Sp-ICE results show patient as A+ E- K- with no historical antibodies

Previously seen by RCI


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES



NHS Blood and Transplant

Add comment on patient history

- Not-specified anti-S
- Not-specified anti-Jk^{a}
- Perform phenotyping 3 months post transfusion
- (Anti-Lu^{a} not excluded)

Is antibody screen positive?

YES

NO

Refer to RCI (5)

Check Patient History
Does patient have a known antibody?

YES

NO

Perform Antibody ID on Primary Panel

Has a pan-reactive antibody been identified by IAT?

YES

NO

NO to 1 or 2

Check Patient History

1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

YES to 1, 2 and 3

YES to 1 and 2

Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral

Refer to RCI (18i)

Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)

NO

Has patient been transfused in last 3 months?

YES

Add comment on Patient History
Perform antibody-antigen pair phenotyping when 3 months post transfusion (if not already known)

Is patient pregnant with an antibody requiring quantification/ titration?

YES

NO

75-year-old male

Group & Screen

2 units RBC

“Anaemia”

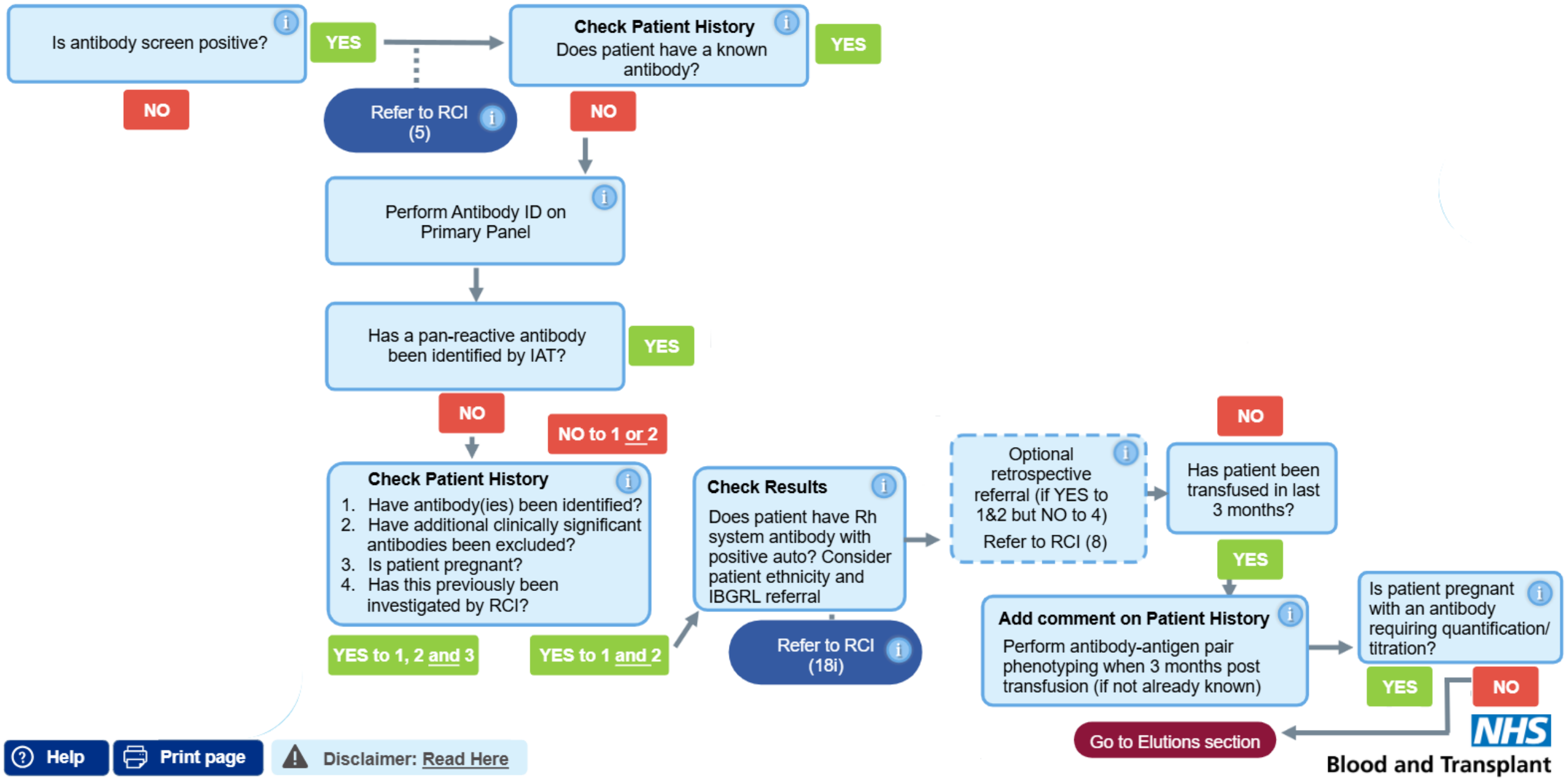
Not previously seen by your lab

Transfused at a different HTL 3 weeks ago

Sp-ICE results show patient as A+ E- K- with no historical antibodies

Previously seen by RCI

NHS Blood and Transplant



NHS Blood and Transplant

Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO

YES

Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO

YES

75-year-old male

Group & Screen

2 units RBC

“Anaemia”

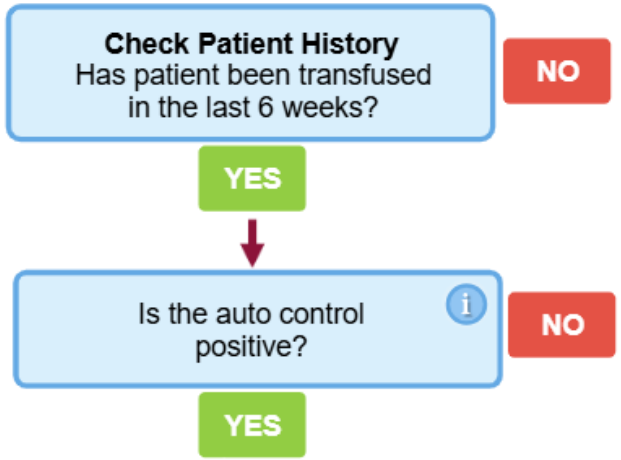
Not previously seen by your lab

Transfused at a different HTL 3 weeks ago

Sp-ICE results show patient as A+ E- K- with no historical antibodies

Previously seen by RCI

Select here to view RCI General guidance on eluate testing



Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused in the last 6 weeks?

NO

YES

Is the auto control positive?

NO

YES

Click to learn more

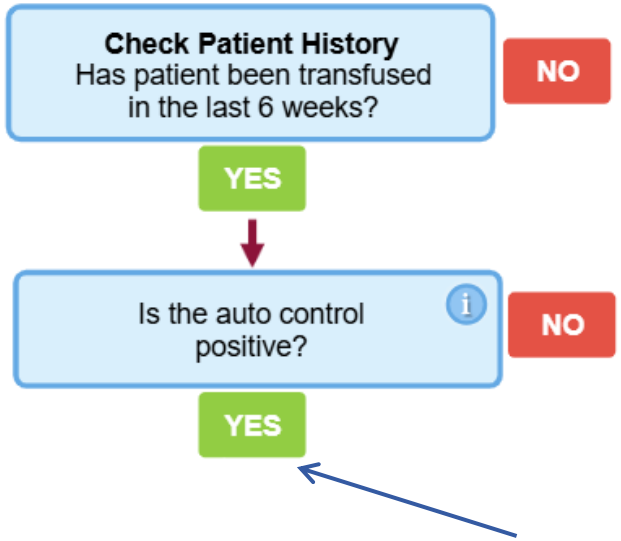
Is the auto control positive?

A positive auto when a patient has been transfused in the last 6 weeks can indicate the sensitisation of donor red cells, and therefore the formation of new alloantibodies with the potential to cause transfusion reactions. Please note that if the auto control is negative and the patient has haemolysis, it is advisable perform an eluate in the absence of a positive DAT/ Auto. Elution should be undertaken if the clinical signs indicate a suspicion of a Haemolytic Transfusion Reaction (HTR).

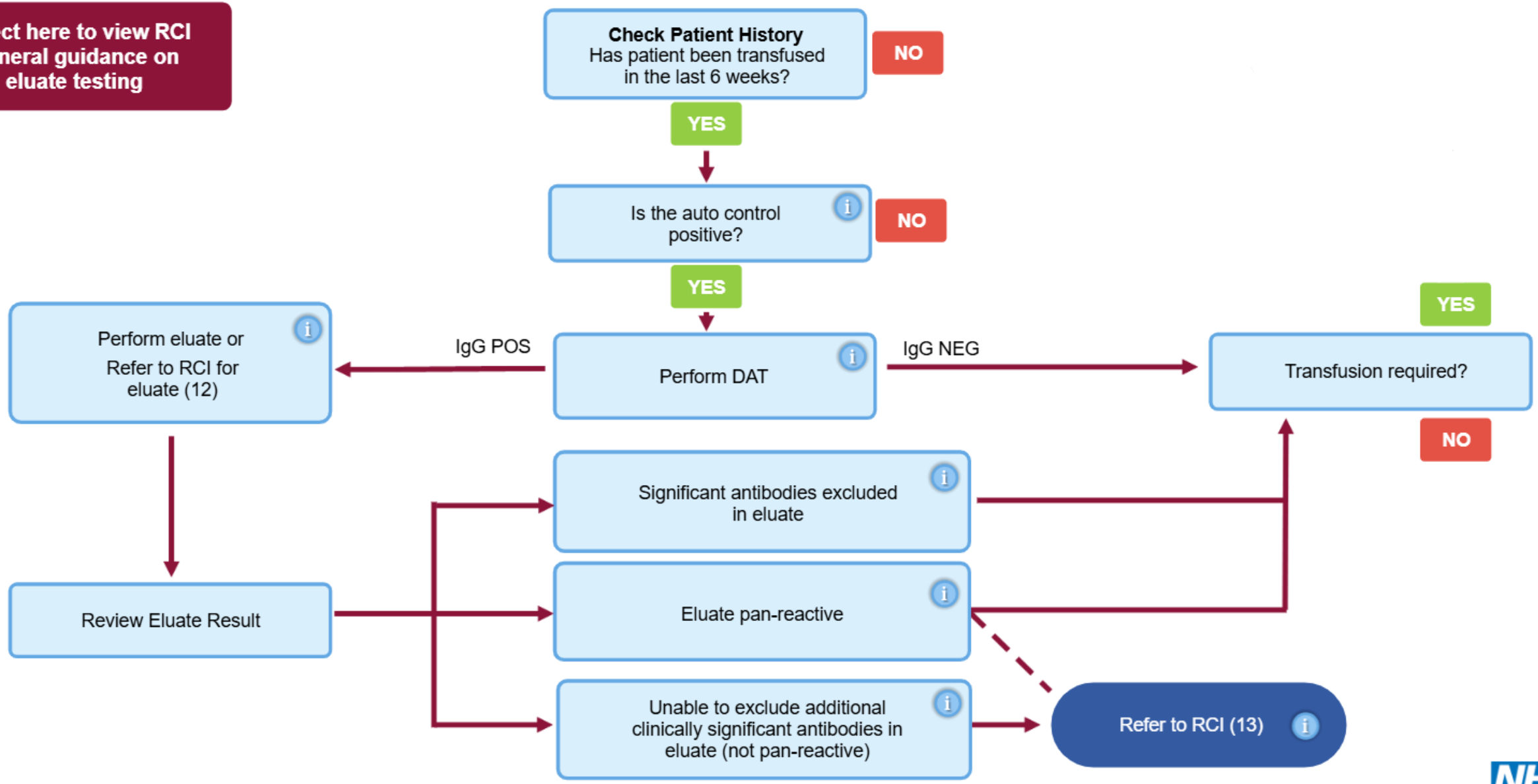
Is the auto control positive?

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	0	0	+	0	+	0	0	+	0	+		0	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	+	0	+	0	+	0		4	2
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	0	+	0	+	+	0	HLA+ Do(a+b+)	2	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	0	+	+	0	+	+		2	2
5	r''r	0	0	+	+	+	+	0	+	0	0	0	0	+	0	0	+	+	0	0	+		2	0
6	rr	0	0	0	+	+	+	0	0	+	2	0	+	0	0	0	+	0	+	0	+		0	0
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0	0	+	+	0		2	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+	Cob+	0	0
9	rr	0	0	0	+	+	0	+	+	0	4	0	0	+	0	0	+	0	+	0	+		3	0
10	rr	0	0	0	+	+	+	0	0	+	4	+	0	+	0	0	+	+	0	+	0	Cob+	2	2
																						Auto	3	/
																						K control	2	/

Select here to view RCI General guidance on eluate testing



Select here to view RCI General guidance on eluate testing



NHS Blood and Transplant

Is the DAT IgG positive?

DAT profile	Anti-IgG	Anti-IgA	IgM	C3c	C3d	Ctrl
Result	**3**	0	0	0	0	0

Select here to view RCI General guidance on eluate testing

Check Patient History
Has patient been transfused
eeks?

NO

Click to learn more

Perform Eluate or refer to RCI (12)

If eluates are performed in your laboratory, please follow your local procedures. Otherwise, please refer to RCI.

ntrol

NO

Perform eluate or
Refer to RCI for eluate (12)

IgG POS

Perform DAT

IgG NEG

Transfusion required?

YES

NO

Significant antibodies excluded in eluate

Review Eluate Result

Eluate pan-reactive

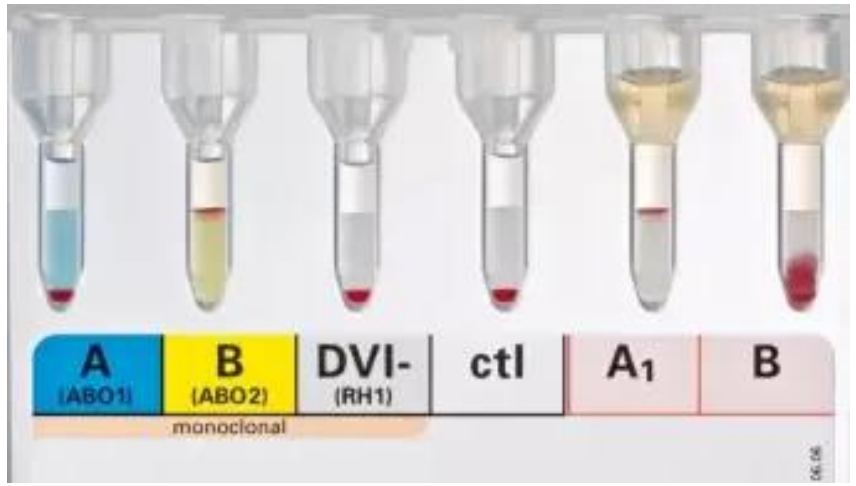
Unable to exclude additional clinically significant antibodies in eluate (not pan-reactive)

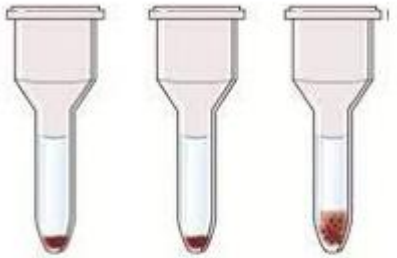
Refer to RCI (13)

Goodbye, my sample

Case 3

- 54-year-old male
- Group & Screen
- No blood requested
- RTA
- Not previously seen by your lab
- No record on Sp-ICE
- Not previously seen by RCI
- Never been transfused





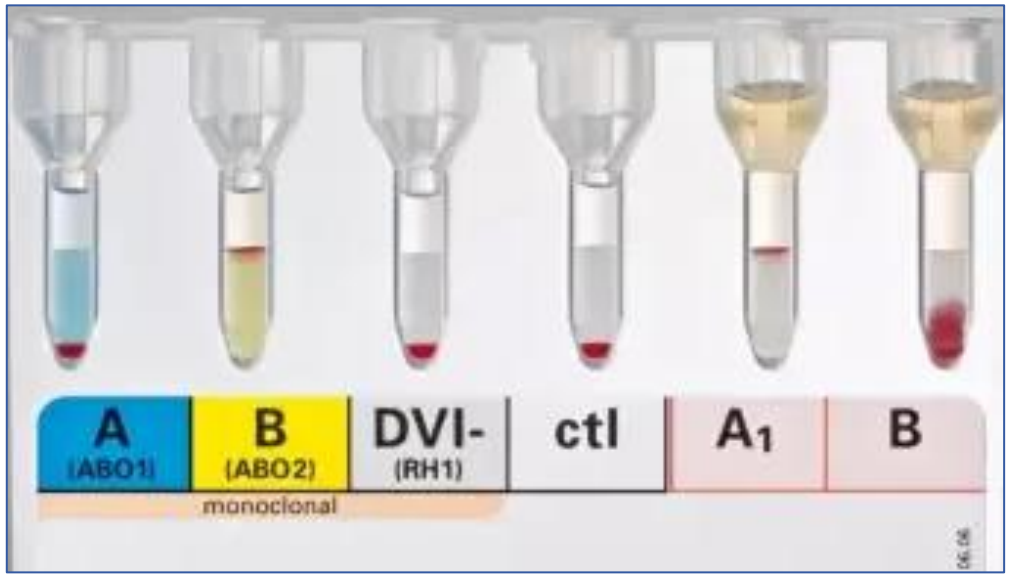
Patient group & screen results

Is ABO and D group interpretable?

YES

NO

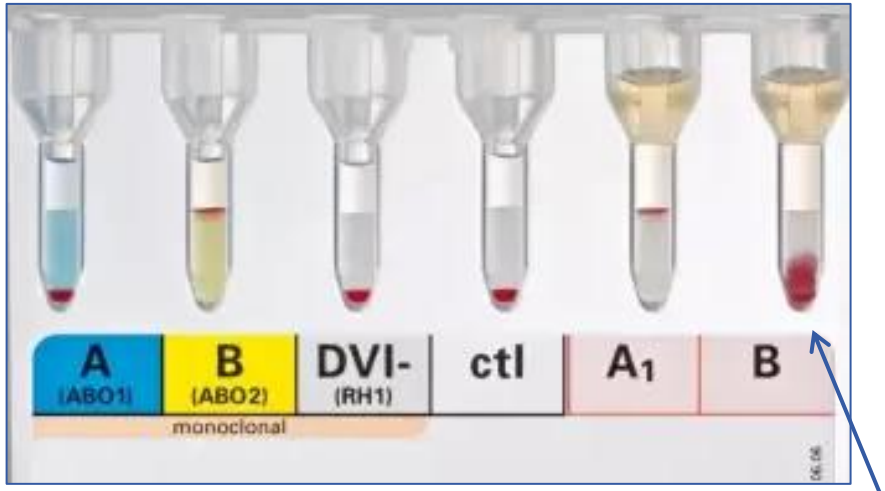
Is the ABO and D group interpretable?

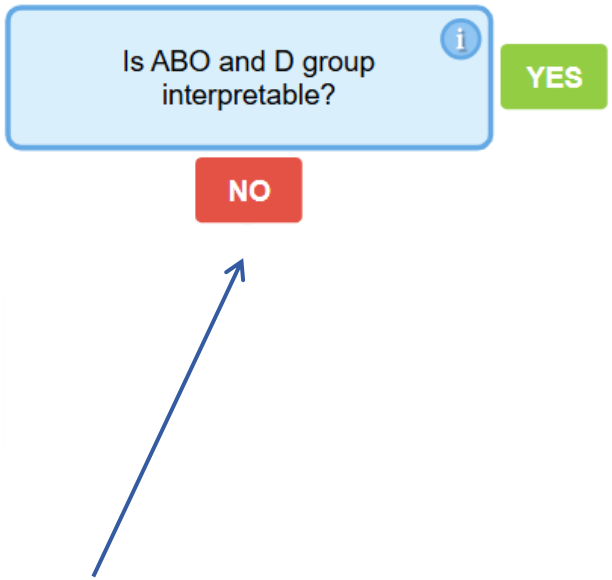


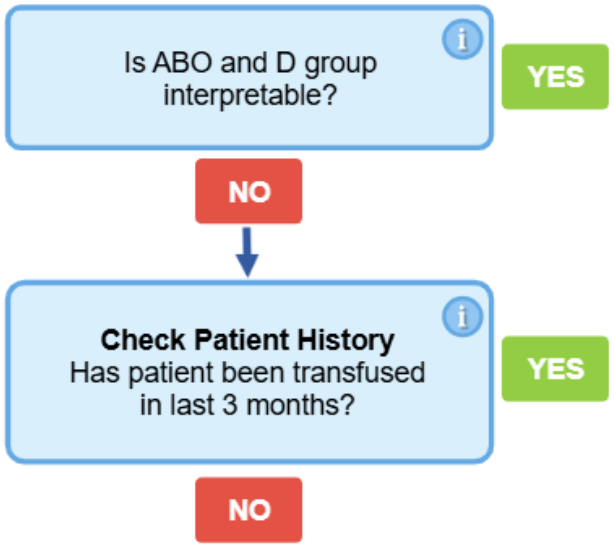
Yes, no or unsure

Is the ABO and D group interpretable?

The forward and reverse ABO group **do not** match in accordance with Landsteiner's law




Is ABO and D group interpretable?
YES
NO


Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO

Is ABO and D group interpretable?

YES

NO

Check Patient History
Has patient been transfused in last 3 months?

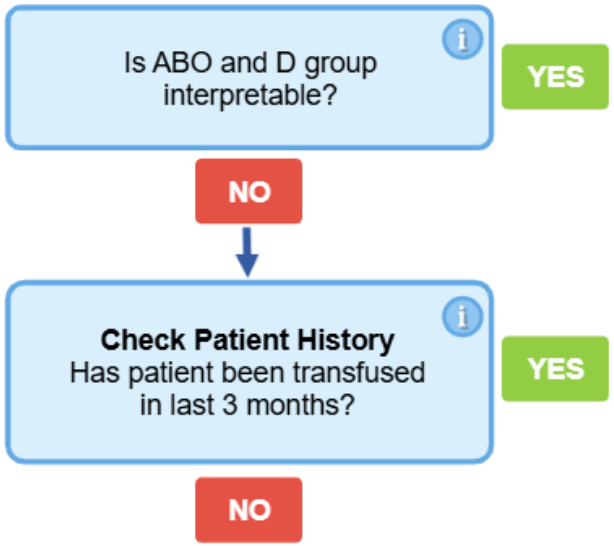
NO

Click to learn more

Check Patient History
Has patient been transfused in the last 3 months?

A previous transfusion is the most likely source of an anomaly with the ABO or D group. Consider any type of transfusion (red cells, platelets, FFP, IvIg).

Dual populations arise in the case of red cell transfusion (ABO and/or D group not identical), whilst unexpected reactions may occur in the reverse group following transfusion with products containing plasma.



54-year-old male

Group & Screen

No blood requested

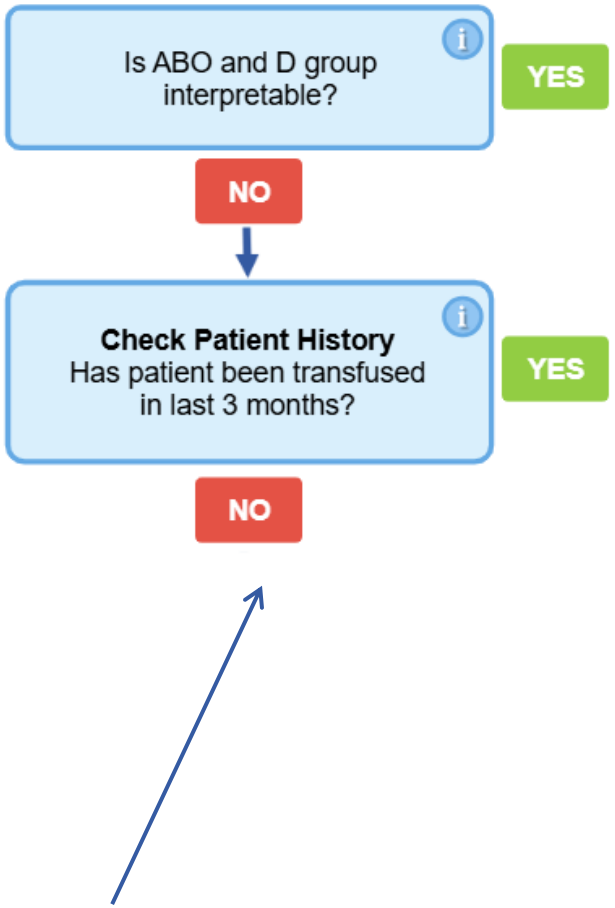
RTA

Not previously seen by your lab

No record on Sp-ICE

Not previously seen by RCI

Never been transfused


Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO

Is ABO and D group interpretable?

YES

NO

Check Patient History
Has patient been transfused in last 3 months?

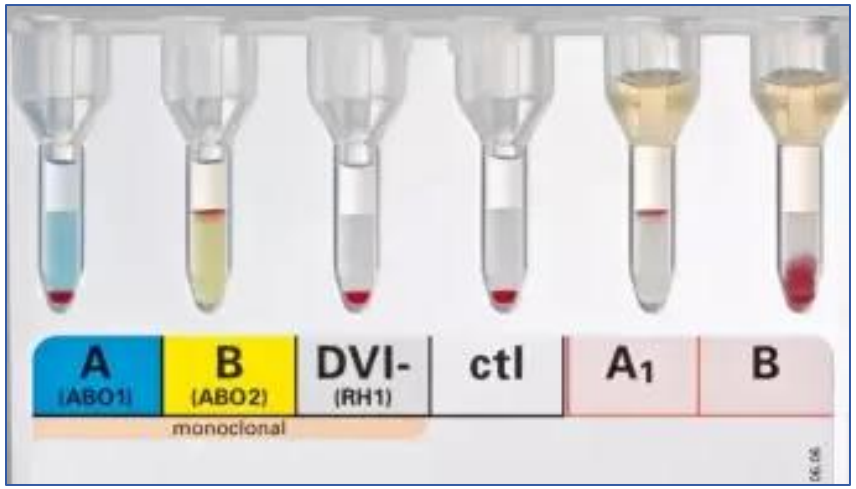
YES

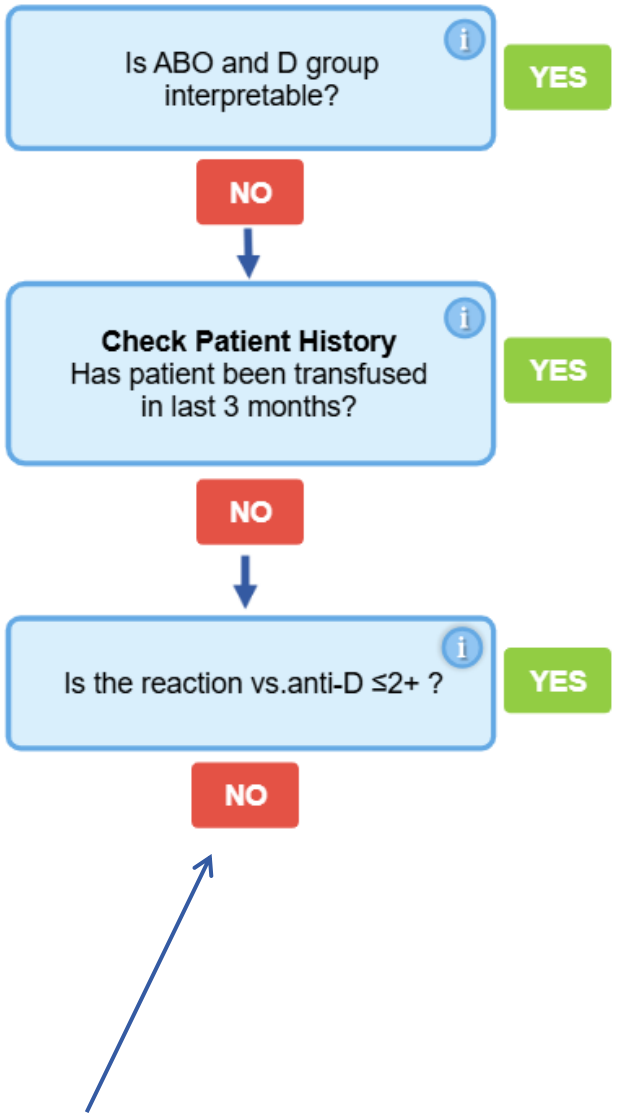
NO

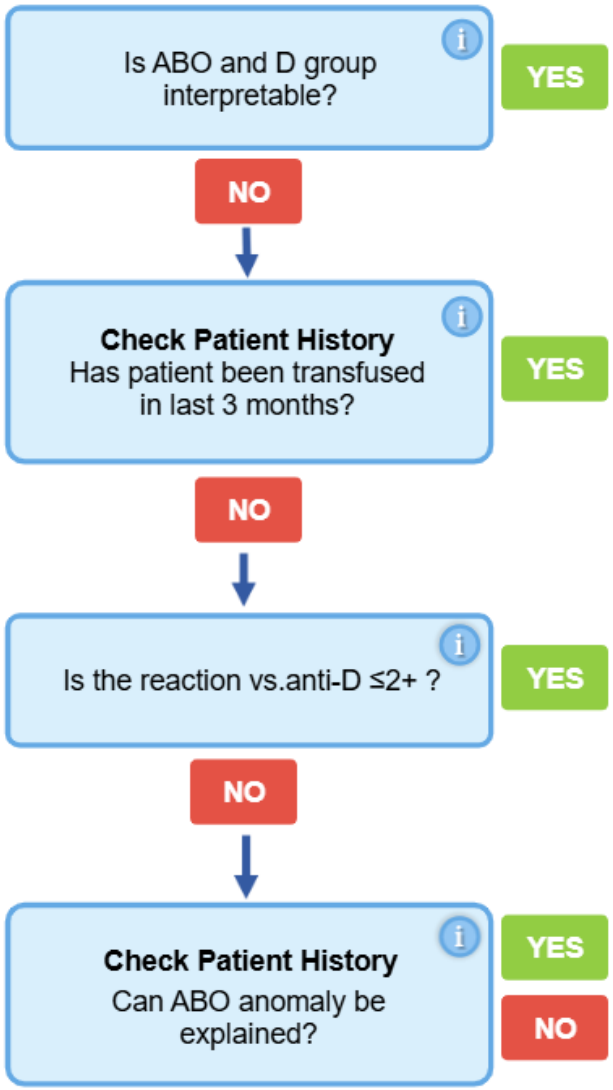
Is the reaction vs.anti-D ≤2+ ?

YES

NO




Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO
Is the reaction vs.anti-D ≤2+ ?
YES
NO


Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO
Is the reaction vs.anti-D ≤2+ ?
YES
NO
Check Patient History
Can ABO anomaly be explained?
YES
NO

Is ABO and D group interpretable?

YES

NO

Check Patient History
Has patient been transfused in last 3 months?

NO

Is the reaction vs.anti-D ≤2+ ?

NO

Check Patient History
Can ABO anomaly be explained?

YES

NO

Click to learn more

Check Patient History
Can ABO anomaly be explained?

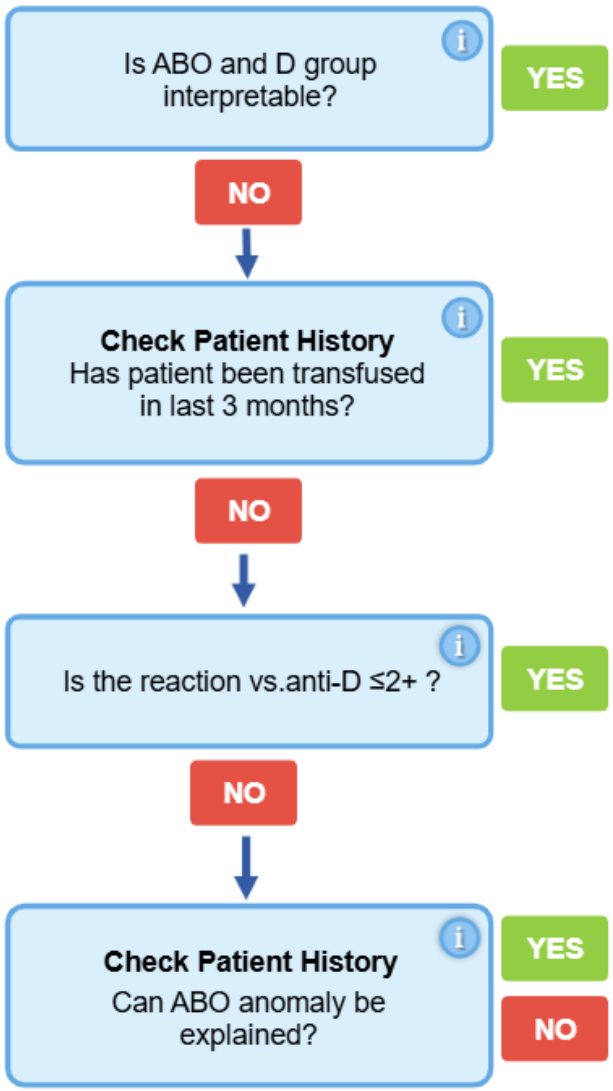
Consider:

- Neonates
- ABO subgroup or other rare ABO phenotypes
- Antibody history e.g. known cold or room temperature reactive antibodies
- Transplants
- Patient diagnosis e.g. AML
- Monoclonal antibody therapies

..and whether the cause of this anomaly has previously been reported by RCI or IBGRL?

Any thoughts on what it might Wanna-be?

Zig a zig ah, good suggestions!


Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO
Is the reaction vs.anti-D ≤2+ ?
YES
NO
Check Patient History
Can ABO anomaly be explained?
YES
NO

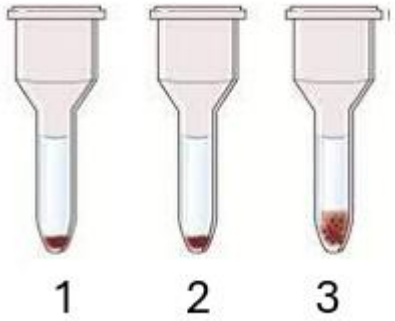
Is antibody screen positive?

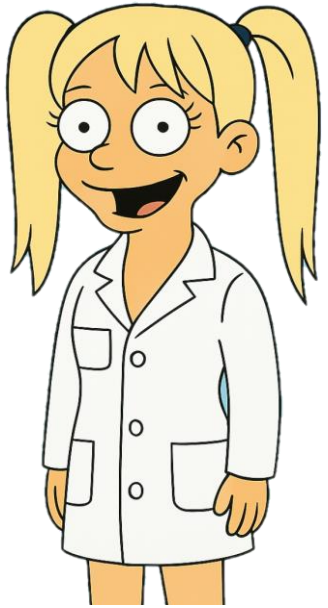
YES

NO

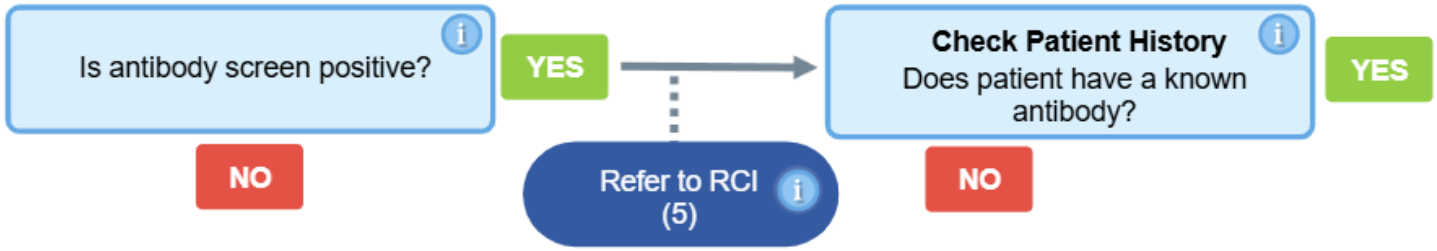
Yes, the antibody screen is positive

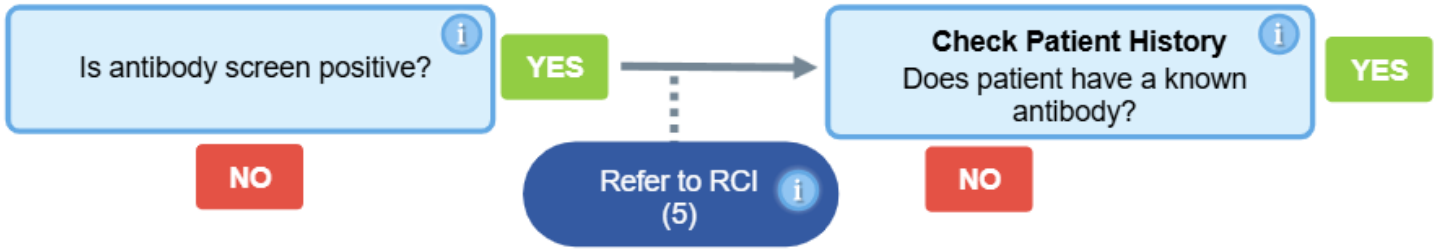
Positive result obtained by IAT





Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	$R_1^wR_1$	+	+	0	0	+	0	+	+	0	0	0	+	0	0	+	+	0	0	+		0
2	R_2R_2	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	0	+	+	0		0
3	rr	0	0	0	+	+	+	0	+	0	4	+	0	0	0	+	+	0	+	0		+/-


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO



54-year-old male

Group & Screen

No blood requested

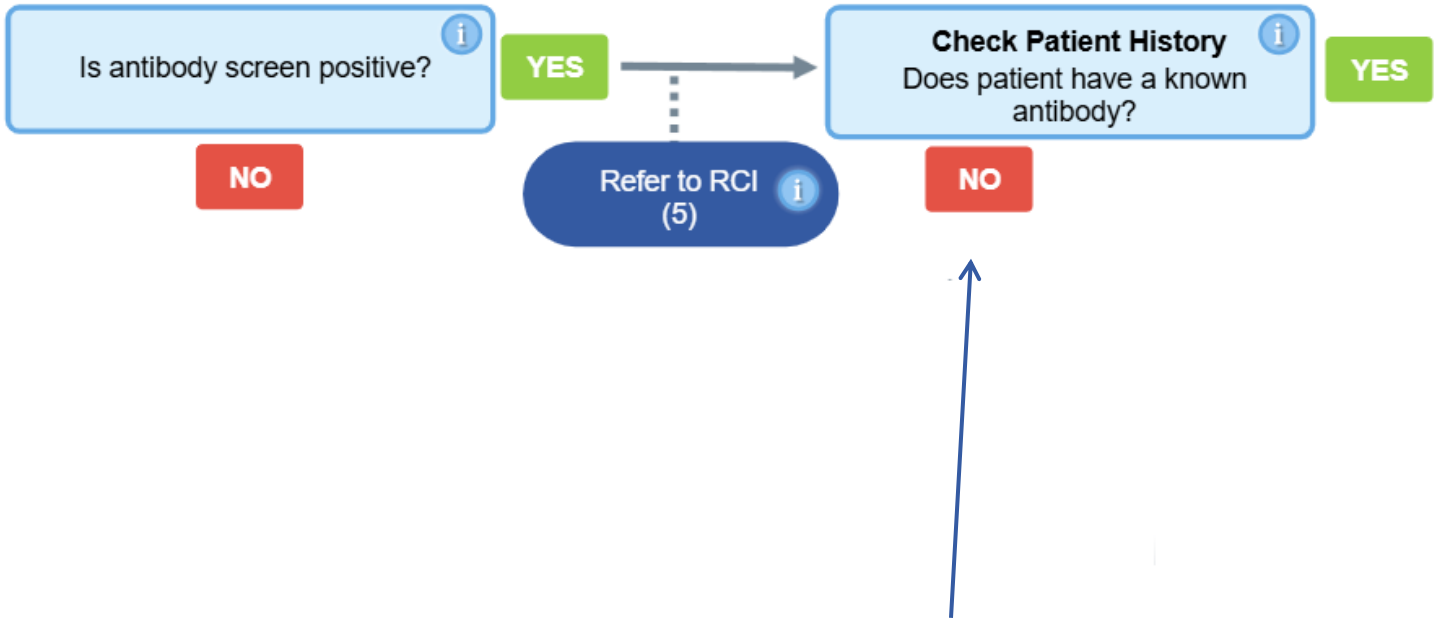
RTA

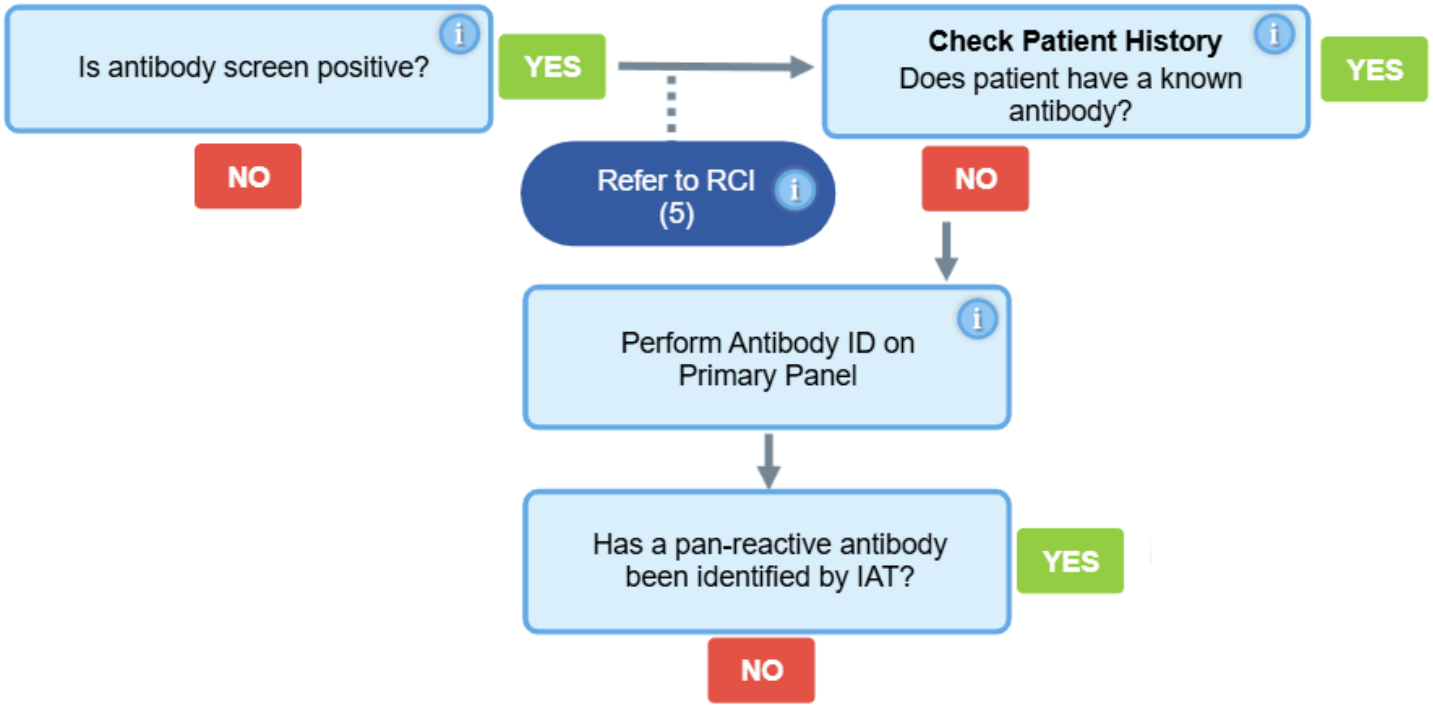
Not previously seen by your lab

No record on Sp-ICE

Not previously seen by RCI

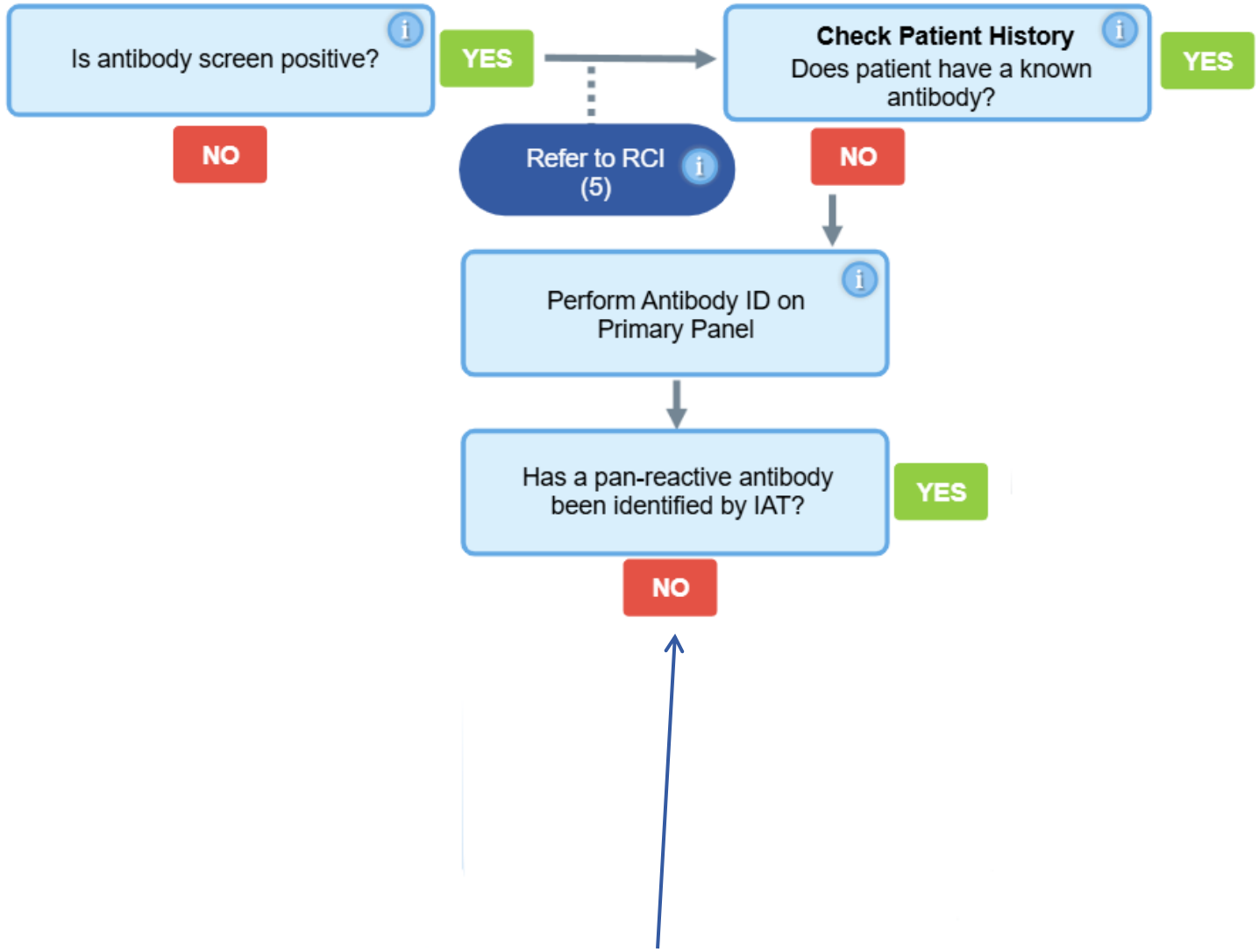
Never been transfused

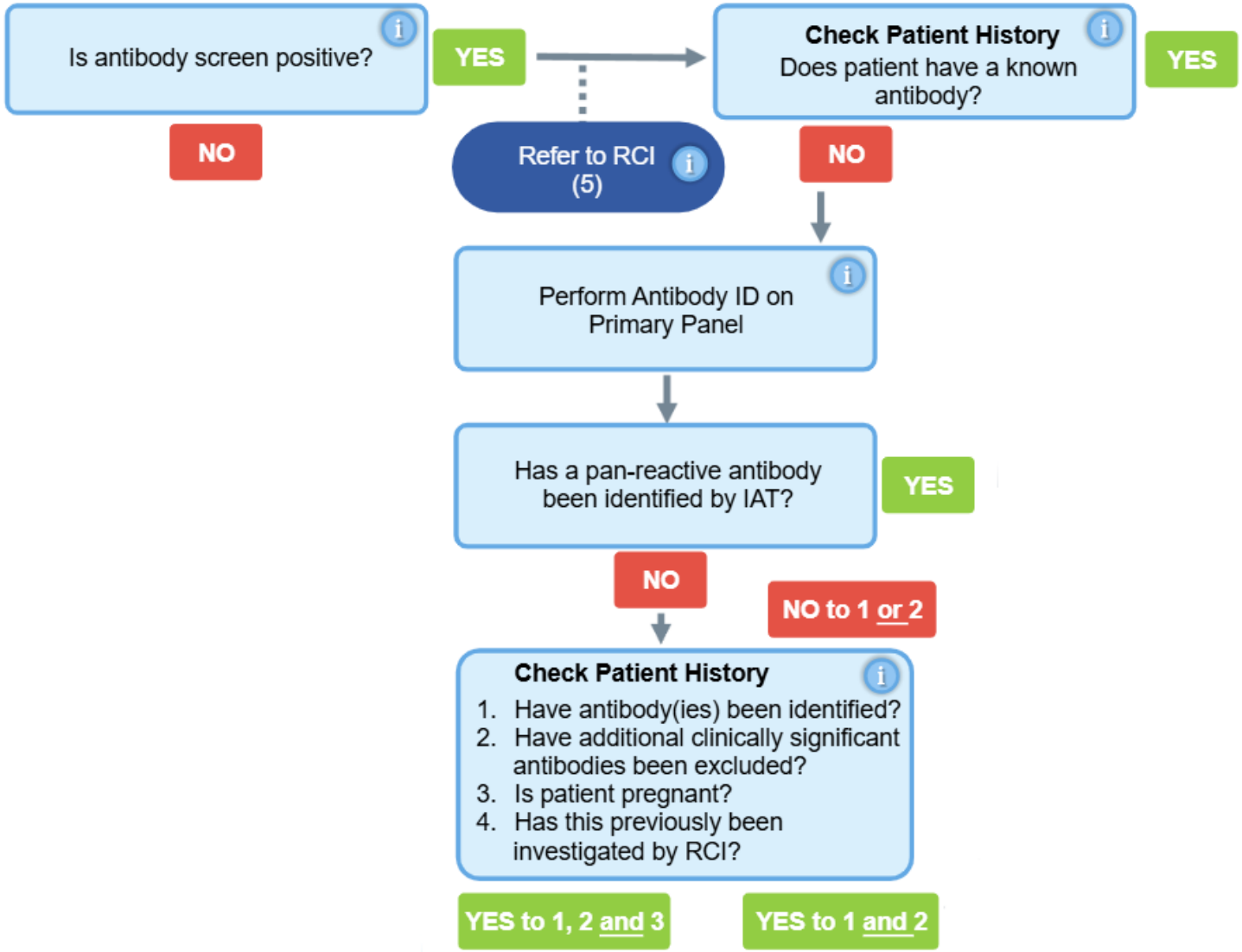

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO

Case 3 – ABID Panel 1

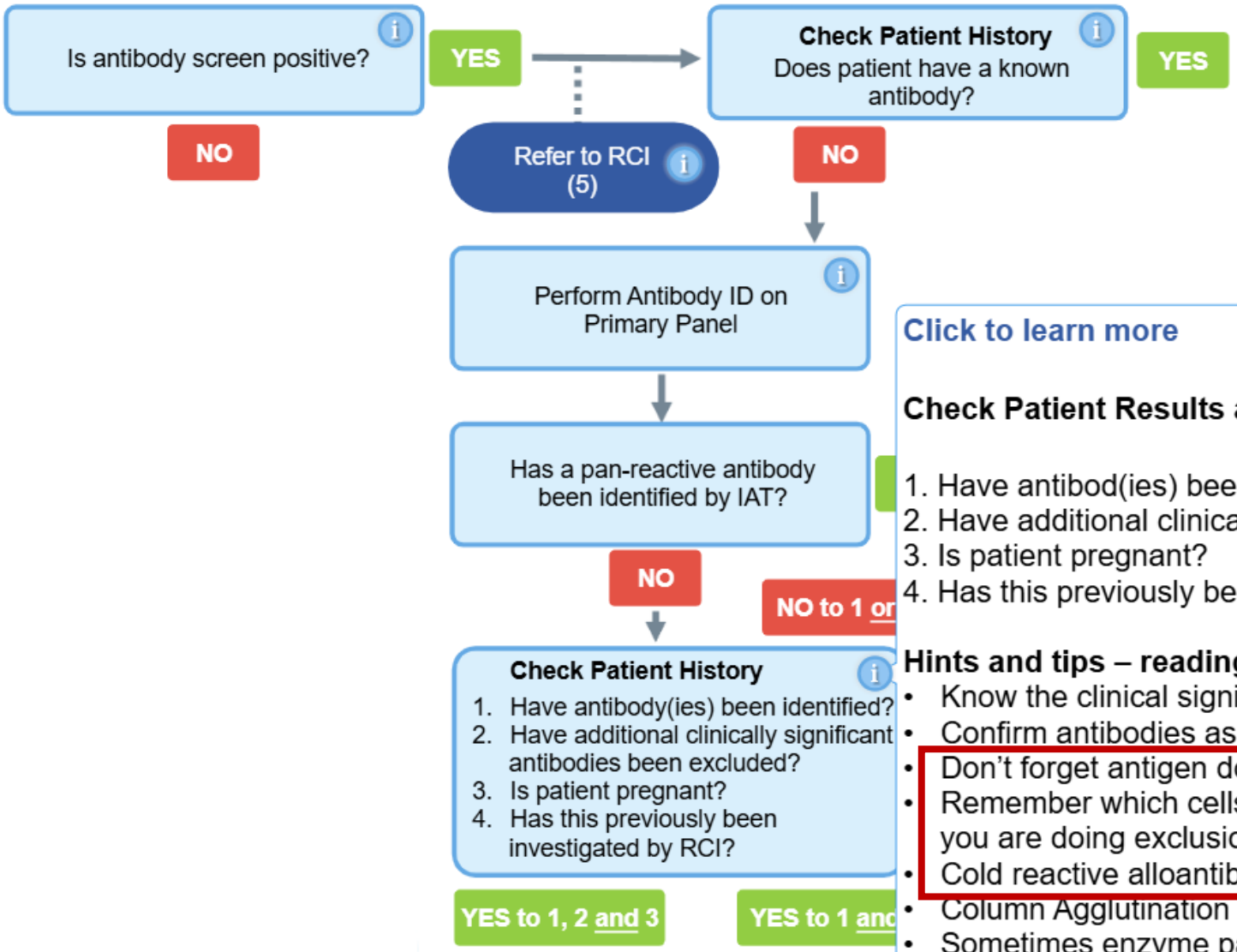
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	+	0	+	0	3	0	+	0	0	0	+	0	+	0	+		1	0
2	R_1R_1	+	+	0	0	+	+	+	0	+	1	0	0	+	0	+	0	+	0	+	0	HLA+	0	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	0	+	+	0		0	0
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	1	0	0	+	0	0	+	+	0	0	+		0	0
6	rr	0	0	0	+	+	0	+	0	+	4	0	+	0	0	0	+	0	+	+	0	HLA+	0	0
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	W	0	+	0		0	0
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+		1	0
9	rr	0	0	0	+	+	0	+	+	0	1	0	0	+	0	0	+	+	0	+	0		0	0
10	rr	0	0	0	+	+	+	0	0	+	3	+	0	+	0	0	+	0	+	+	0		0	0
																						Auto	0	/
																						K control	2	/


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

Case 3 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	+	0	+	0	3	0	+	0	0	0	+	0	+	0	+		1	0
2	R_1R_1	+	+	0	0	+	+	+	0	+	1	0	0	+	0	+	0	+	0	+	0	HLA+	0	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	0	+	+	0		0	0
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	1	0	0	+	0	0	+	+	0	0	+		0	0
6	rr	0	0	0	+	+	0	+	0	+	4	0	+	0	0	0	+	0	+	+	0	HLA+	0	0
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	W	0	+	0		0	0
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+		1	0
9	rr	0	0	0	+	+	0	+	+	0	1	0	0	+	0	0	+	+	0	+	0		0	0
10	rr	0	0	0	+	+	+	0	0	+	3	+	0	+	0	0	+	0	+	+	0		0	0
																						Auto	0	/
																						K control	2	/



Click to learn more

Check Patient Results and History

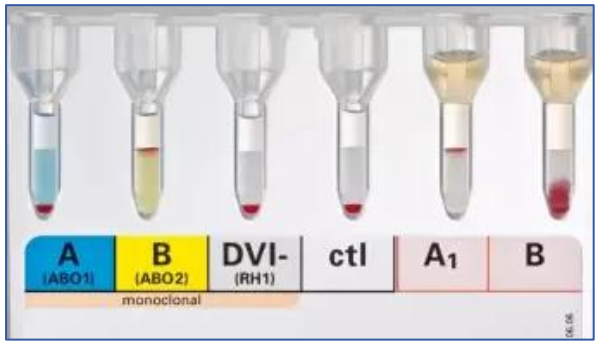
1. Have antibod(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

Hints and tips – reading and interpreting antibody ID panels

- Know the clinical significance of antibodies (read BSH guidelines)
- Confirm antibodies as alloantibodies (antigen phenotyping)
- Don't forget antigen dosage of cells
- Remember which cells are destroyed by enzyme which is worth considering when you are doing exclusions
- Cold reactive alloantibodies may react by IAT (E.g. Lewis and M antibodies)
- Column Agglutination Technology (CAT) can be prone to non-specific reactions
- Sometimes enzyme pan-reactivity causes non-specific reactivity in IAT. In such cases, please ensure that you can exclude all clinically significant antibodies by IAT.

What might you do if you suspect a cold antibody?

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	+	0	+	0	3	0	+	0	0	0	+	0	+	0	+		1	0
2	R_1R_1	+	+	0	0	+	+	+	0	+	1	0	0	+	0	+	0	+	0	+	0	HLA+	0	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	0	+	+	0		0	0
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		0	0
5	r''r	0	0	+	+	+	+	0	+	0	1	0	0	+	0	0	+	+	0	0	+		0	0
6	rr	0	0	0	+	+	0	+	0	+	4	0	+	0	0	0	+	0	+	+	0	HLA+	0	0
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	W	0	+	0		0	0
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+		1	0
9	rr	0	0	0	+	+	0	+	+	0	1	0	0	+	0	0	+	+	0	+	0		0	0
10	rr	0	0	0	+	+	+	0	0	+	3	+	0	+	0	0	+	0	+	+	0		0	0
																						Auto	0	/
																						K control	2	/



Zig a zig ah, good suggestions!

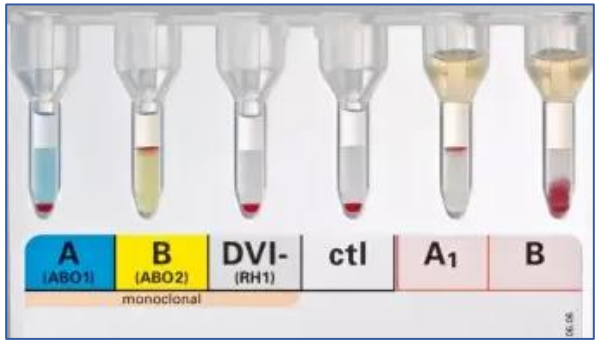
Case 3 – ABID ‘cold’ panel 1

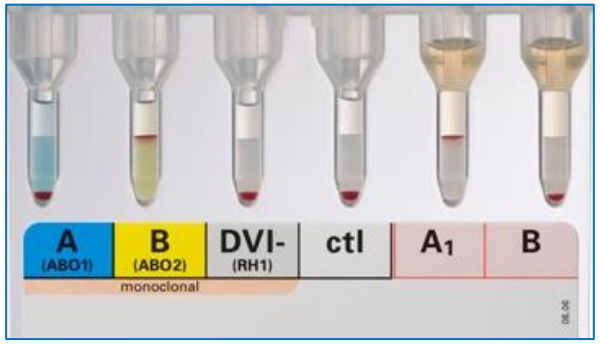
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ	Cold IAT
1	$R_1^wR_1$	+	+	0	0	+	+	0	+	0	3	0	+	0	0	0	+	0	+	0	+		1	0	2
2	R_1R_1	+	+	0	0	+	+	+	0	+	1	0	0	+	0	+	0	+	0	+	0	HLA+	0	0	1
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	0	+	+	0		0	0	0
4	r’r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		0	0	0
5	r’’r	0	0	+	+	+	+	0	+	0	1	0	0	+	0	0	+	+	0	0	+		0	0	2
6	rr	0	0	0	+	+	0	+	0	+	4	0	+	0	0	0	+	0	+	+	0	HLA+	0	0	0
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	W	0	+	0		0	0	0
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+		1	0	2
9	rr	0	0	0	+	+	0	+	+	0	1	0	0	+	0	0	+	+	0	+	0		0	0	0
10	rr	0	0	0	+	+	+	0	0	+	3	+	0	+	0	0	+	0	+	+	0		0	0	2
																						Auto	0	/	/
																						K control	2	/	/

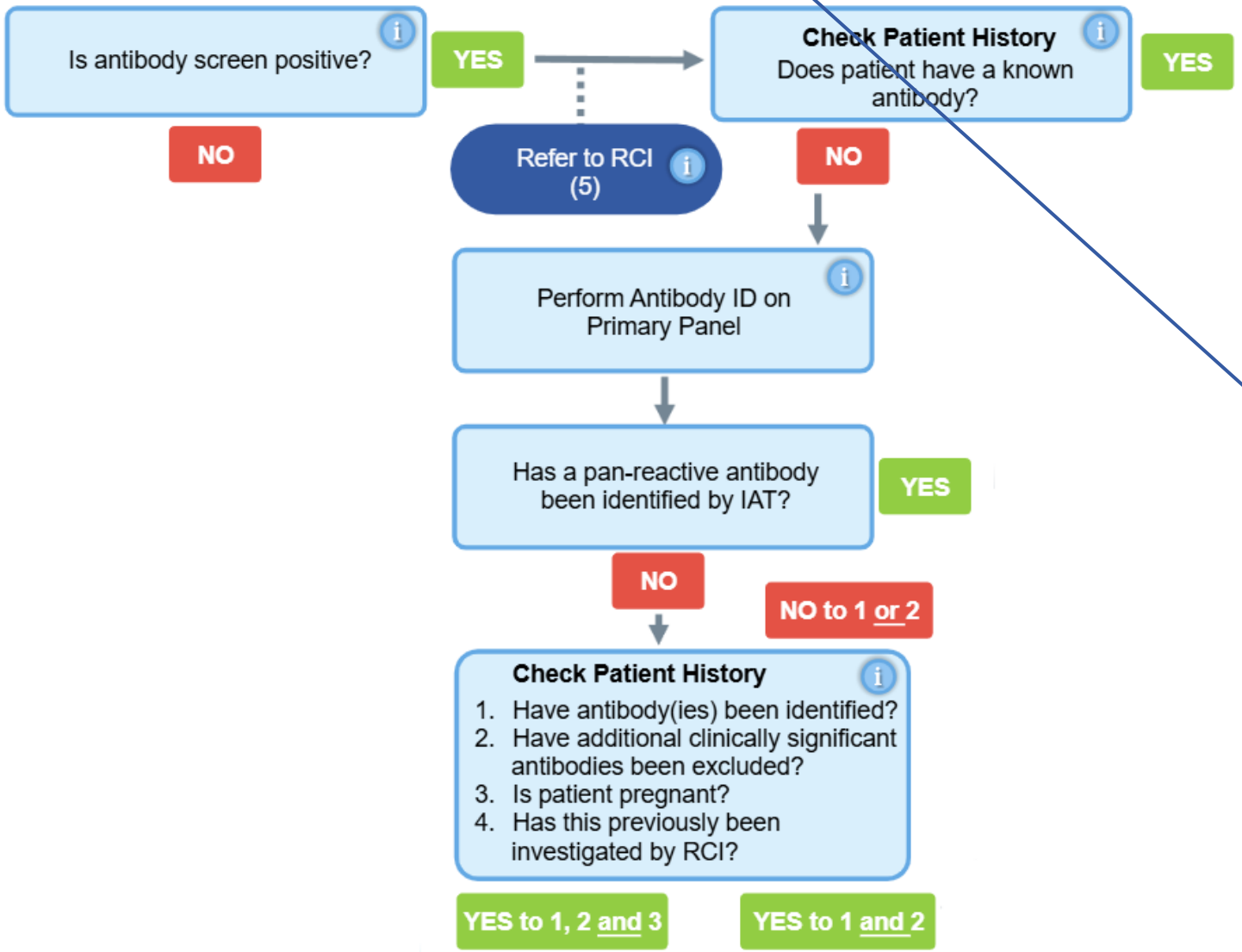
Case 3 – ABID ‘cold’ panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ	Cold IAT
1	$R_1^wR_1$	+	+	0	0	+	+	0	+	0	3	0	+	0	0	0	+	0	+	0	+		1	0	2
2	R_1R_1	+	+	0	0	+	+	+	0	+	1	0	0	+	0	+	0	+	0	+	0	HLA+	0	0	1
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	0	+	+	0		0	0	0
4	r’r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		0	0	0
5	r’’r	0	0	+	+	+	+	0	+	0	1	0	0	+	0	0	+	+	0	0	+		0	0	2
6	rr	0	0	0	+	+	0	+	0	+	4	0	+	0	0	0	+	0	+	+	0	HLA+	0	0	0
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	W	0	+	0		0	0	0
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	+	0	0	+		1	0	2
9	rr	0	0	0	+	+	0	+	+	0	1	0	0	+	0	0	+	+	0	+	0		0	0	0
10	rr	0	0	0	+	+	+	0	0	+	3	+	0	+	0	0	+	0	+	+	0		0	0	2
																						Auto	0	/	/
																						K control	2	/	/

You could try and resolve group following local policies






Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

Is ABO and D group interpretable?

YES

NO

Check Patient History
Has patient been transfused in last 3 months?

YES

NO

Is the reaction vs.anti-D ≤2+ ?

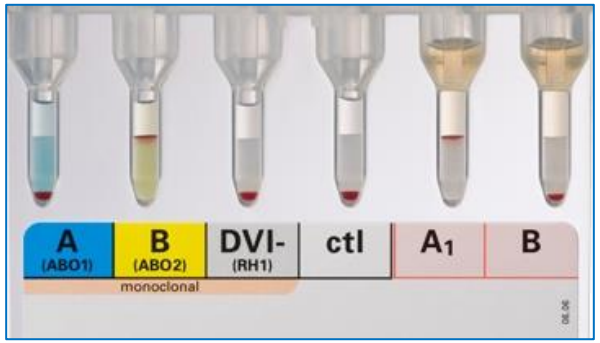
YES

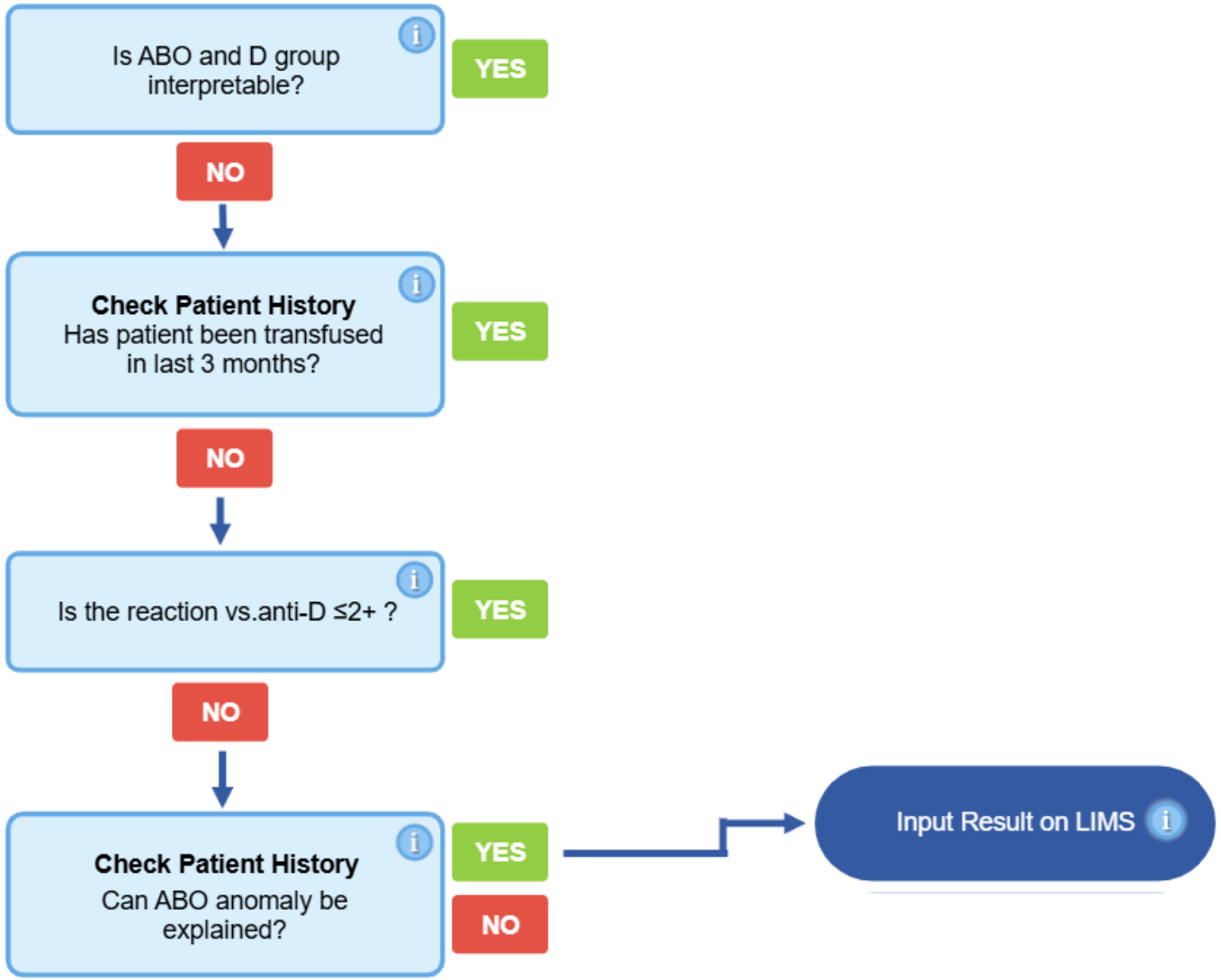
NO

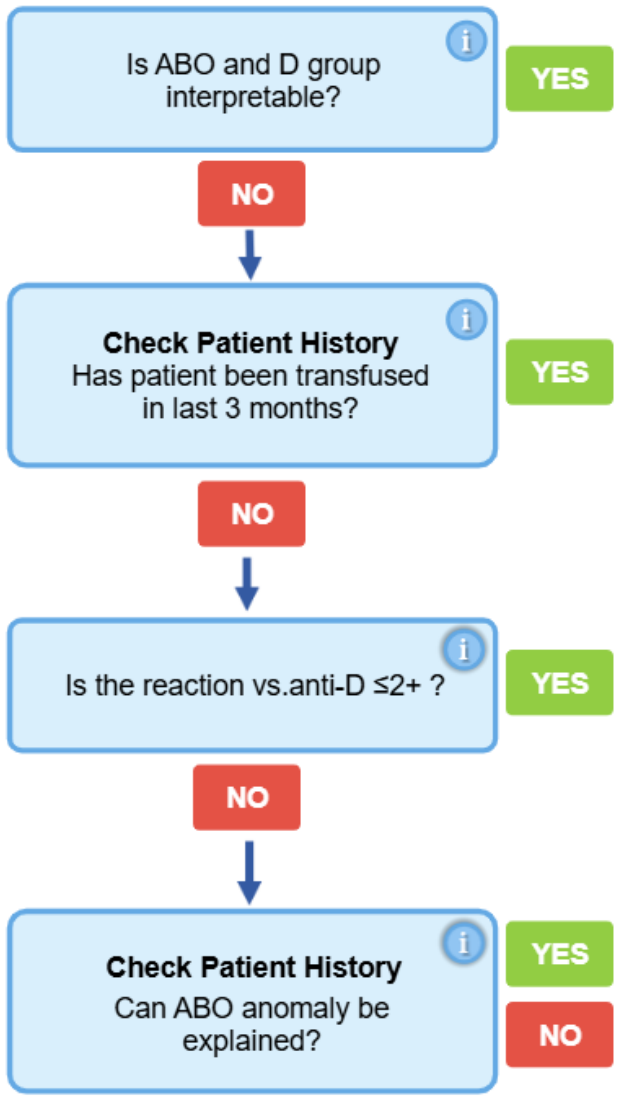
Check Patient History
Can ABO anomaly be explained?

YES

NO




Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO
Is the reaction vs.anti-D ≤2+ ?
YES
NO
Check Patient History
Can ABO anomaly be explained?
YES
NO
Input Result on LIMS

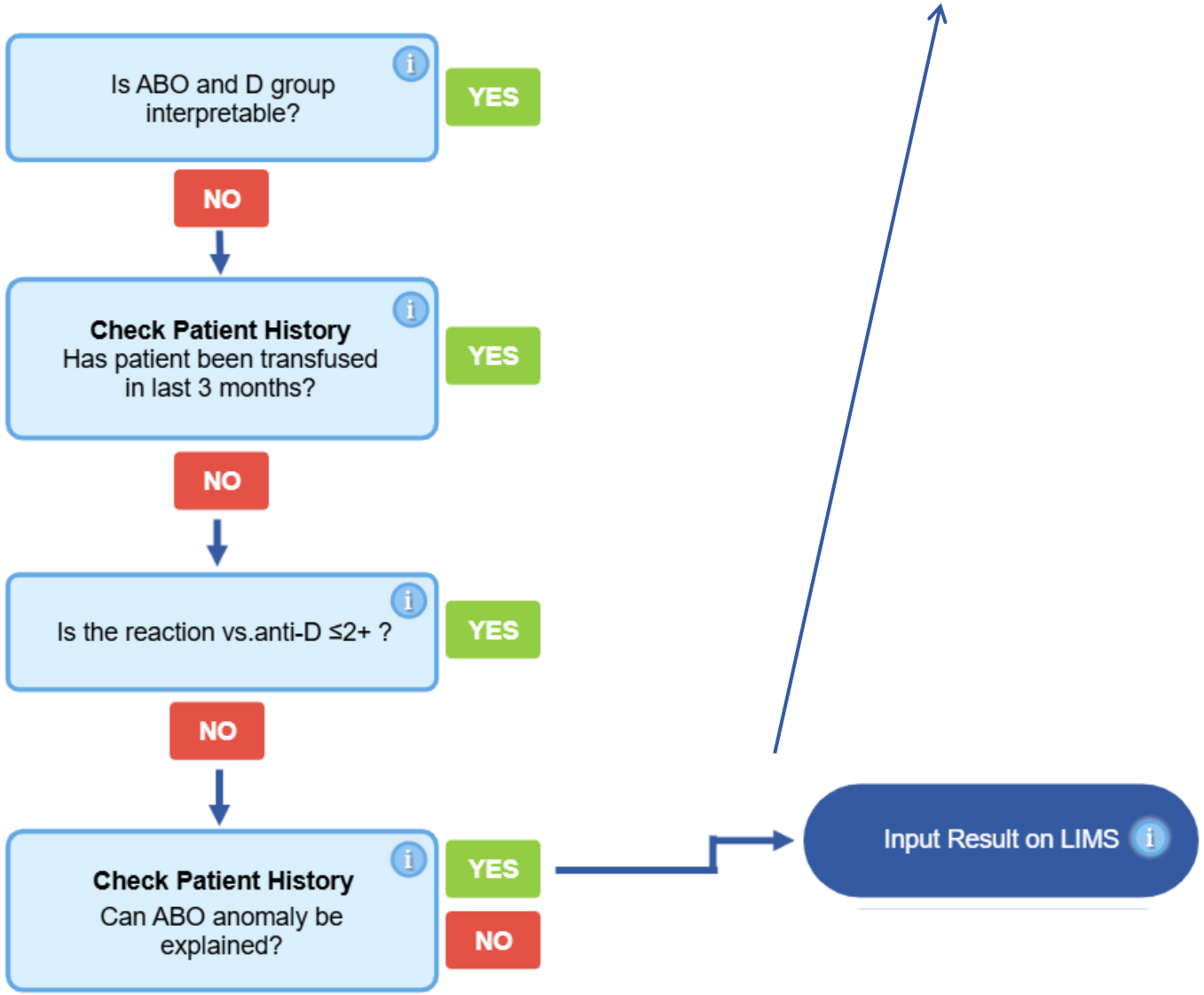


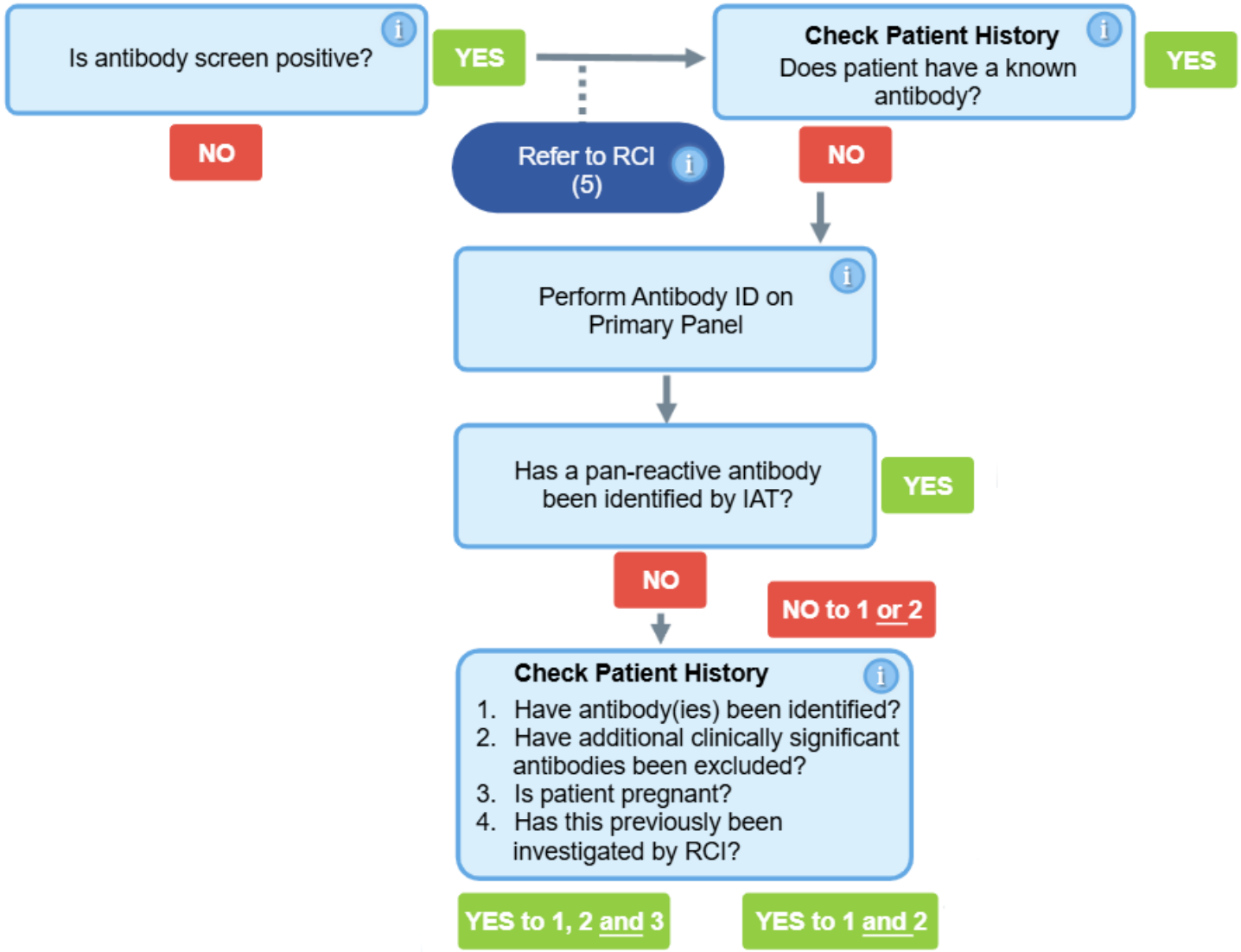
Input Result on LIMS

Click to learn more

Input Result on LIMS

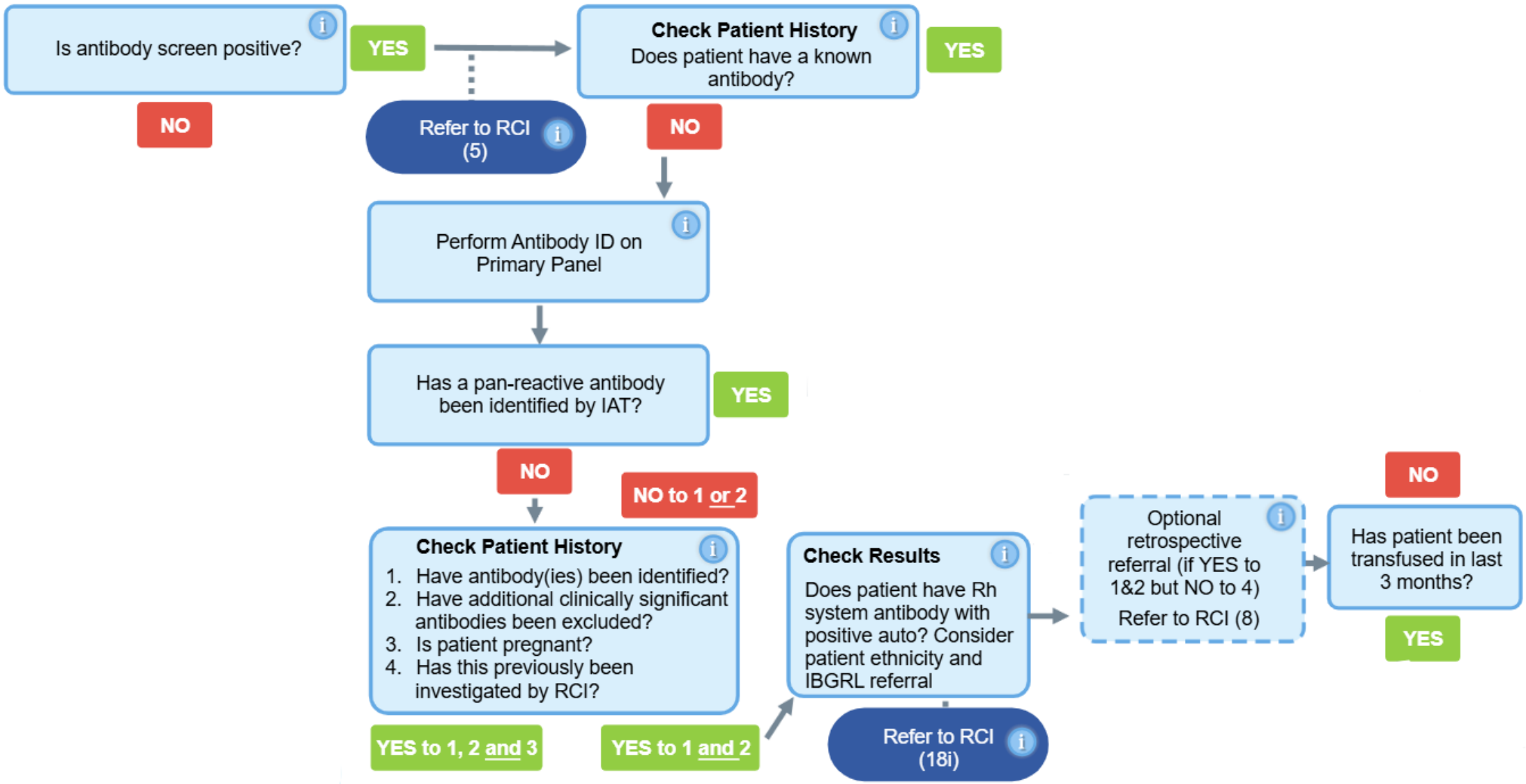
Different hospitals have different policies on resulting discrepant ABO and RhD groups. Follow your local procedures for inputting discrepant ABO/D groups. When the input is complete, consider the results of the antibody screen and continue through the support tool.


Is ABO and D group interpretable?
YES
NO
Check Patient History
Has patient been transfused in last 3 months?
YES
NO
Is the reaction vs.anti-D ≤2+ ?
YES
NO
Check Patient History
Can ABO anomaly be explained?
YES
NO
Input Result on LIMS


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

Case 3 – ABID ‘cold’ panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ	Cold IAT
1	$R_1^wR_1$	+	+				+	0	+	0	3	0	+	0	0	0	+	0	+	0	+		1	0	2
2	R_1R_1	+	+	0	0	+	+	+	0	+	1	0	0	+	0	+	0	+	0	+	0	HLA+	0	0	1
3	R_2R_2	+	0	+	+	0	0	+	0	+	3	0	0	+	0	+	0	0	+	+	0		0	0	0
4	r’r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		0	0	0
5	r’’r	0	0	+	+	+	+	0	+	0	1	0	0	+	0	0	+	+	0	0	+		0	0	2
6	rr	0	0	0	+	+	0	+	0	+	4	0	+	0	0	0	+	0	+	+	0	HLA+	0	0	0
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	W	0	+	0		0	0	0
8	rr	0	0				+	0	0	+	0	0	0	+	+	0	+	+	0	0	+		1	0	2
9	rr	0	0	0	+	+	0	+	+	0	1	0	0	+	0	0	+	+	0	+	0		0	0	0
10	rr	0	0	0	+	+	+	0	0	+	3	+	0	+	0	0	+	0	+	+	0		0	0	2
																						Auto	0	/	/
																						K control	2	/	/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YES
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YES
NO
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Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES

Is antibody screen positive?

YES

NO

Check Patient History
Does patient have a known antibody?

YES

NO

Refer to RCI (5)

Perform Antibody ID on Primary Panel

Has a pan-reactive antibody been identified by IAT?

YES

NO

NO to 1 or 2

Check Patient History

1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

YES to 1, 2 and 3

YES to 1 and 2

Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral

Refer to RCI (18i)

Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)

NO

Has patient been transfused in last 3 months?

YES

54-year-old male

Group & Screen

No blood requested

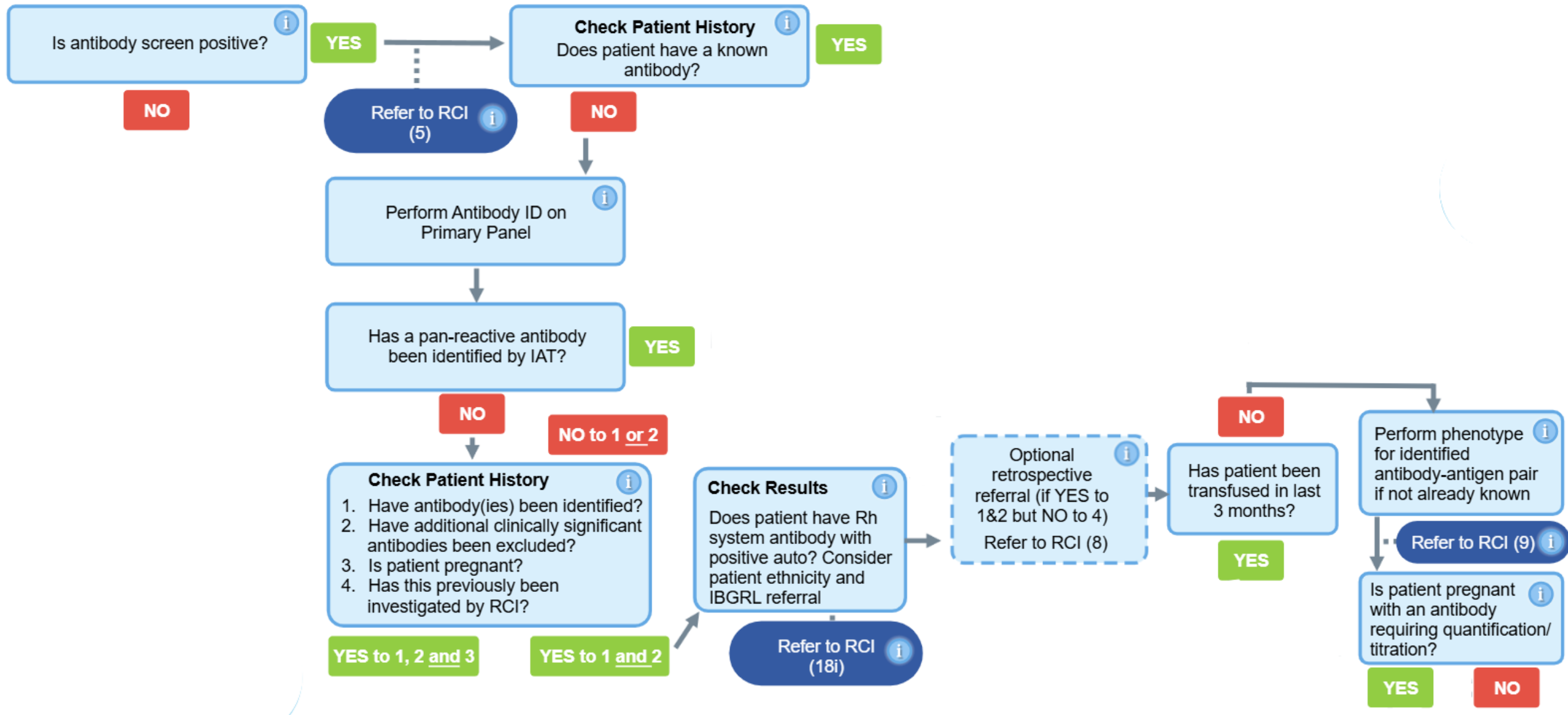
RTA

Not previously seen by your lab

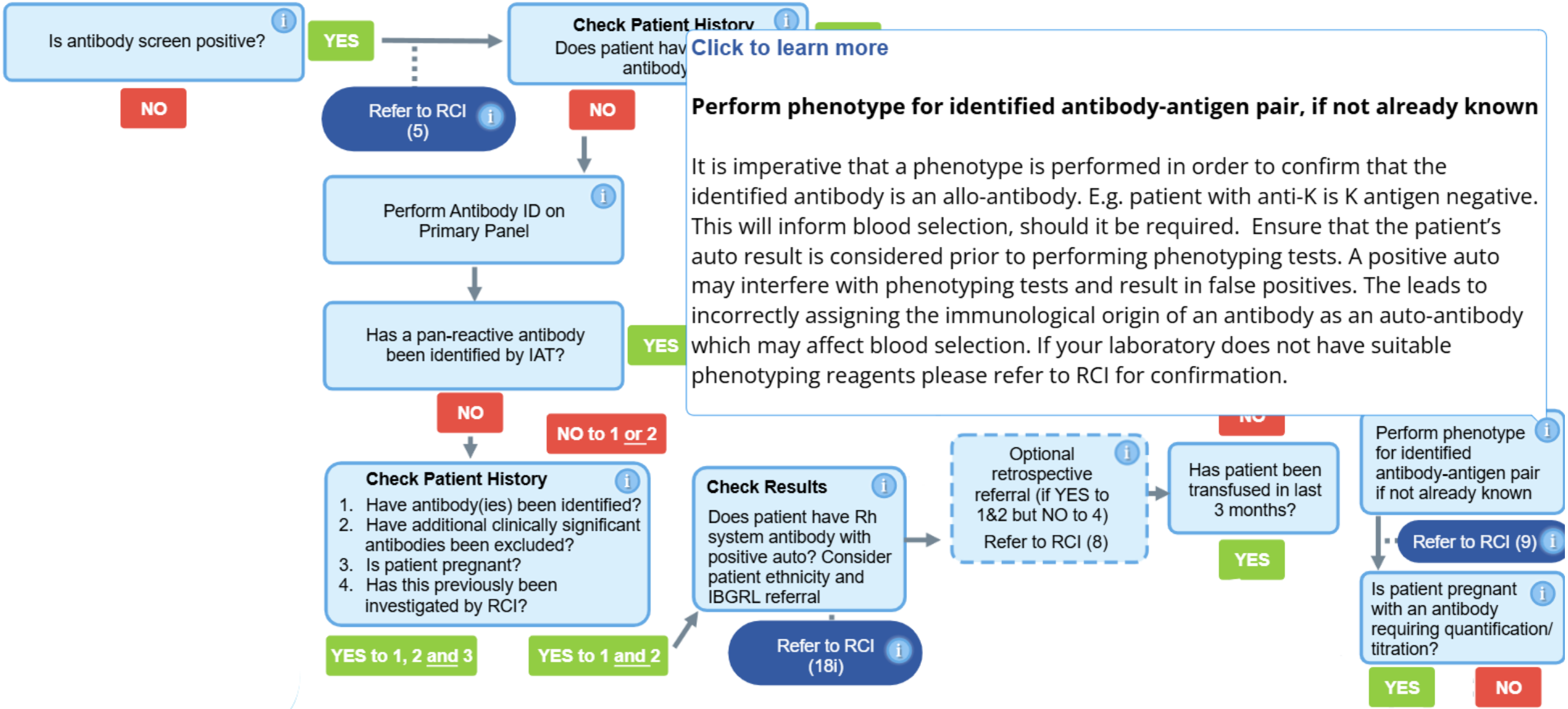
No record on Sp-ICE

Not previously seen by RCI

Never been transfused



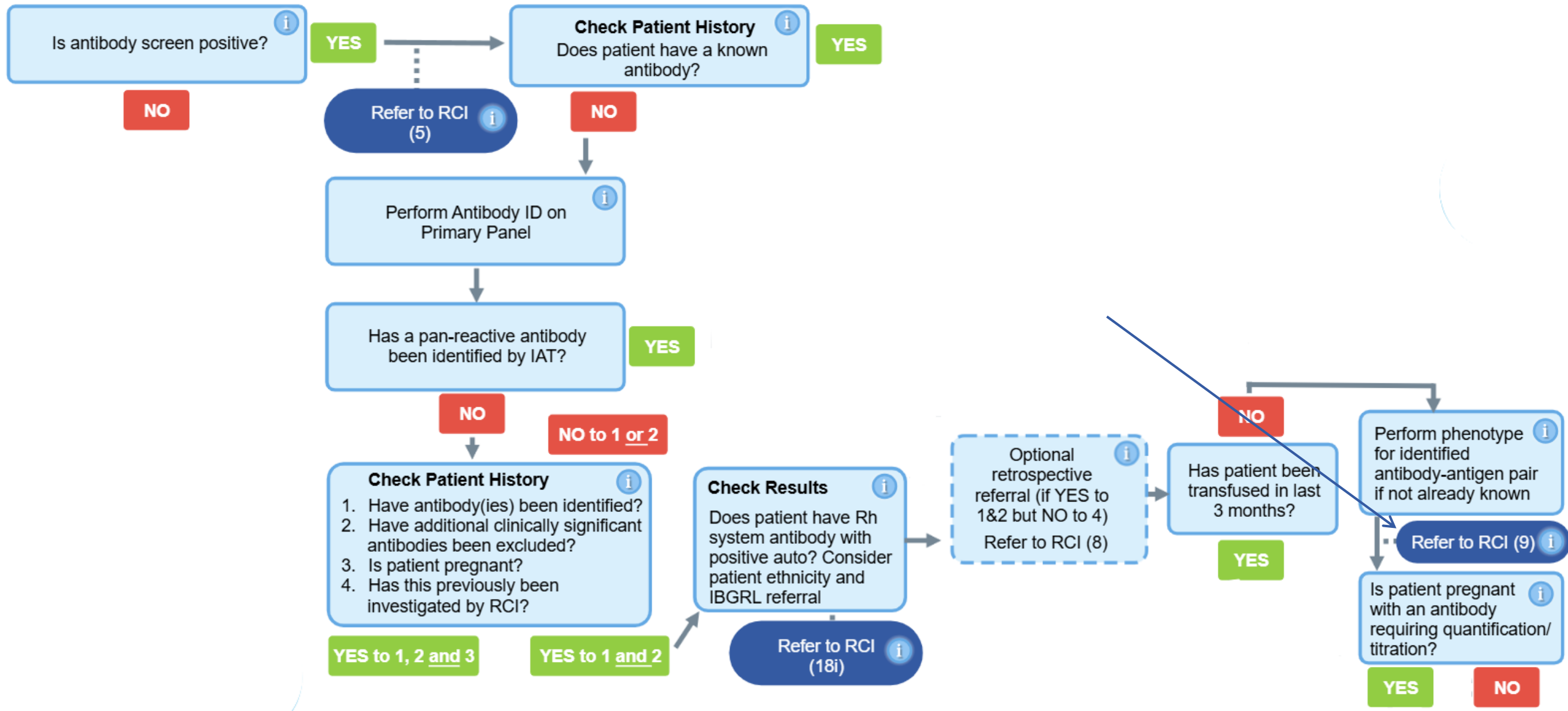
NHS Blood and Transplant



Click to learn more

Perform phenotype for identified antibody-antigen pair, if not already known

It is imperative that a phenotype is performed in order to confirm that the identified antibody is an allo-antibody. E.g. patient with anti-K is K antigen negative. This will inform blood selection, should it be required. Ensure that the patient's auto result is considered prior to performing phenotyping tests. A positive auto may interfere with phenotyping tests and result in false positives. The leads to incorrectly assigning the immunological origin of an antibody as an auto-antibody which may affect blood selection. If your laboratory does not have suitable phenotyping reagents please refer to RCI for confirmation.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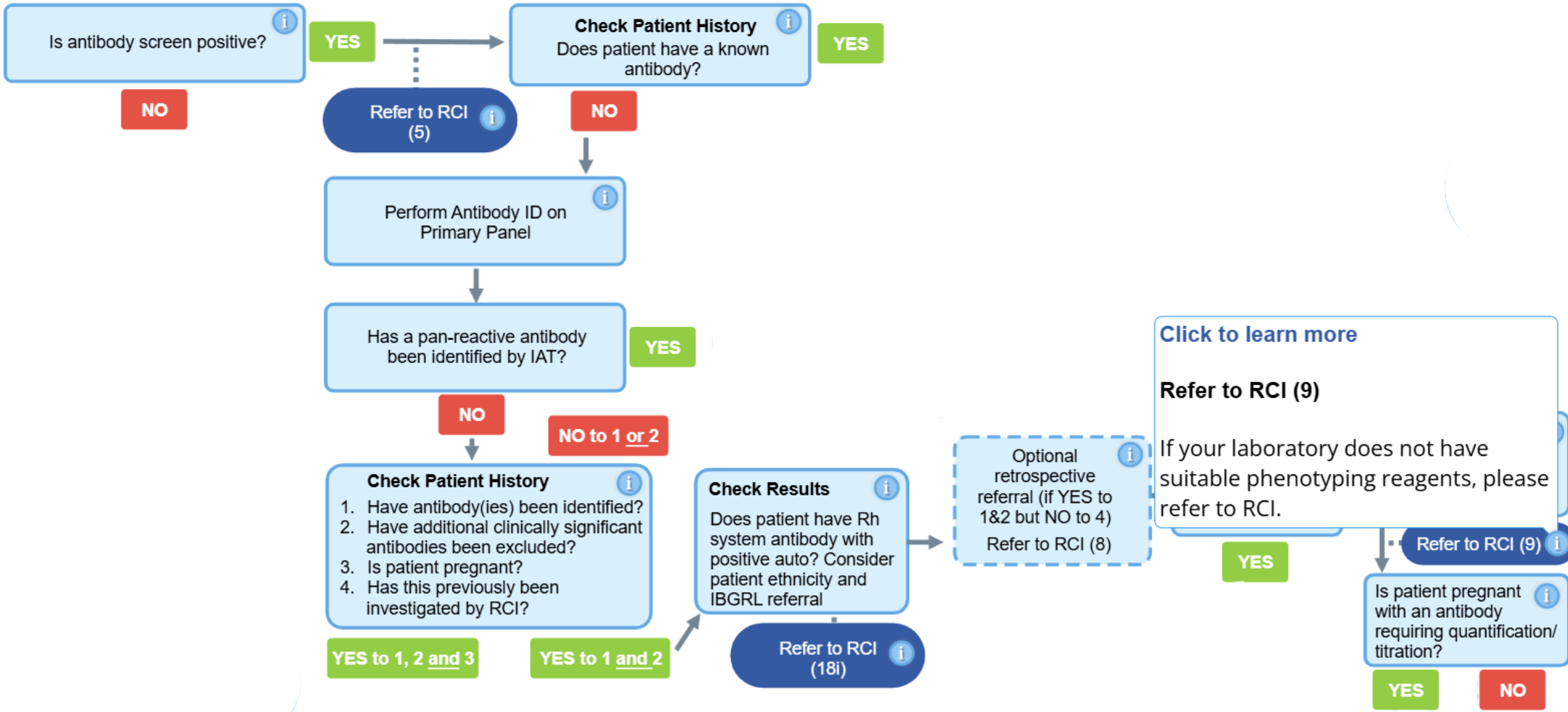
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO

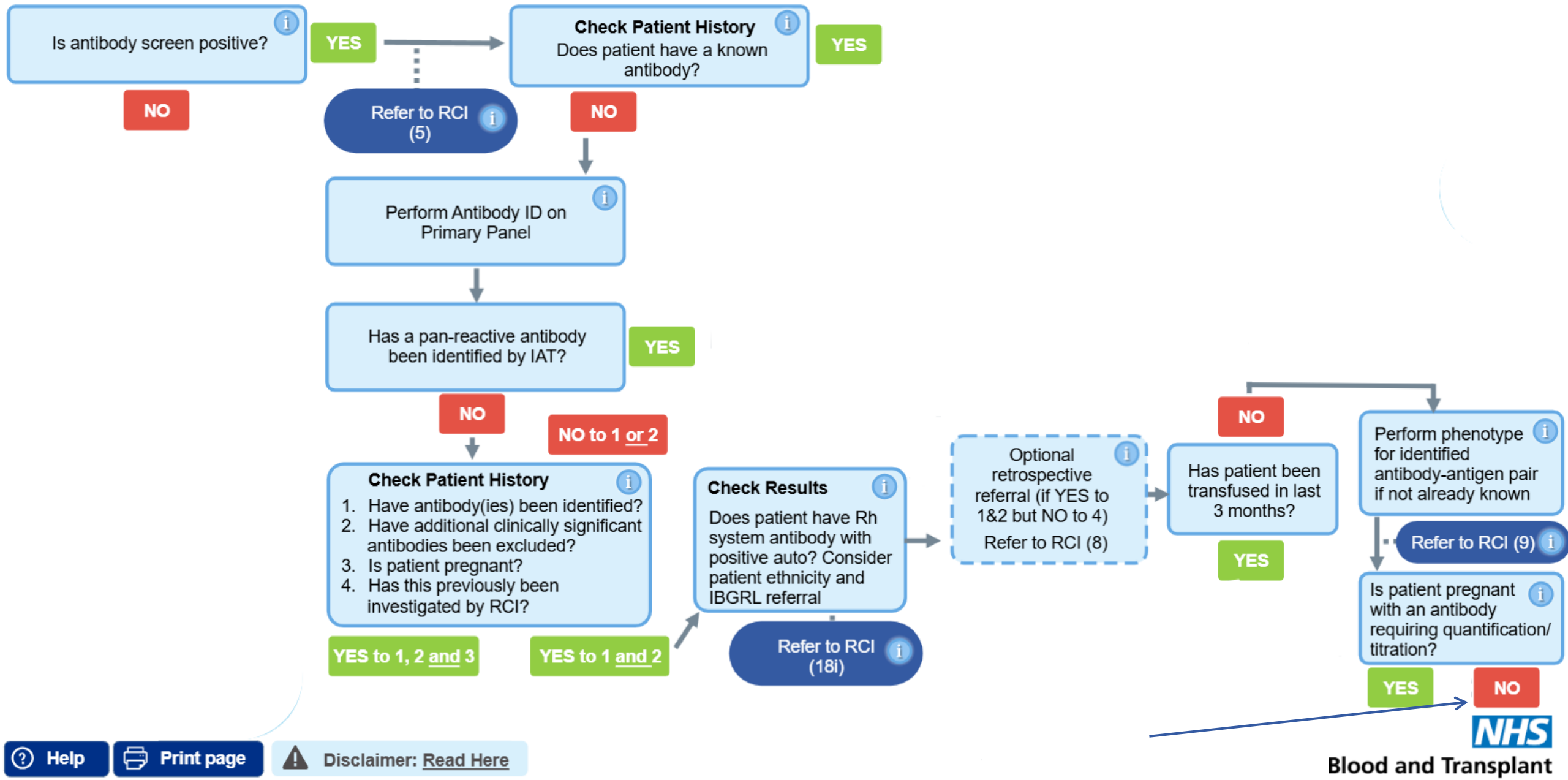


NHS
Blood and Transplant

Does your lab perform phenotyping? ('Common' antibodies)

- Do not perform any extended phenotyping (ABO/D only)
- Perform extended Rh/K but no additional typing
- Perform extended Rh/K and some additional typing
- Perform extended Rh/K and full additional typing

Mama, we stock you
Mama, M negative
Mama, alloanti-M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Refer to RCI (8)
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Has patient been transfused in last 3 months?
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO

Is antibody screen positive?

YES

NO

Refer to RCI (5)

Check Patient History
Does patient have a known antibody?

YES

NO

Perform Antibody ID on Primary Panel

Has a pan-reactive antibody been identified by IAT?

YES

NO

NO to 1 or 2

Check Patient History

1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

YES to 1, 2 and 3

YES to 1 and 2

Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral

Refer to RCI (18i)

Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)

Has patient been transfused in last 3 months?

NO

YES

54-year-old male

Group & Screen

No blood requested

RTA

Not previously seen by your lab

No record on Sp-ICE

Not previously seen by RCI

Never been transfused

Perform phenotype for identified antibody-antigen pair if not already known

Refer to RCI (9)

Is patient pregnant with an antibody requiring quantification/ titration?

YES

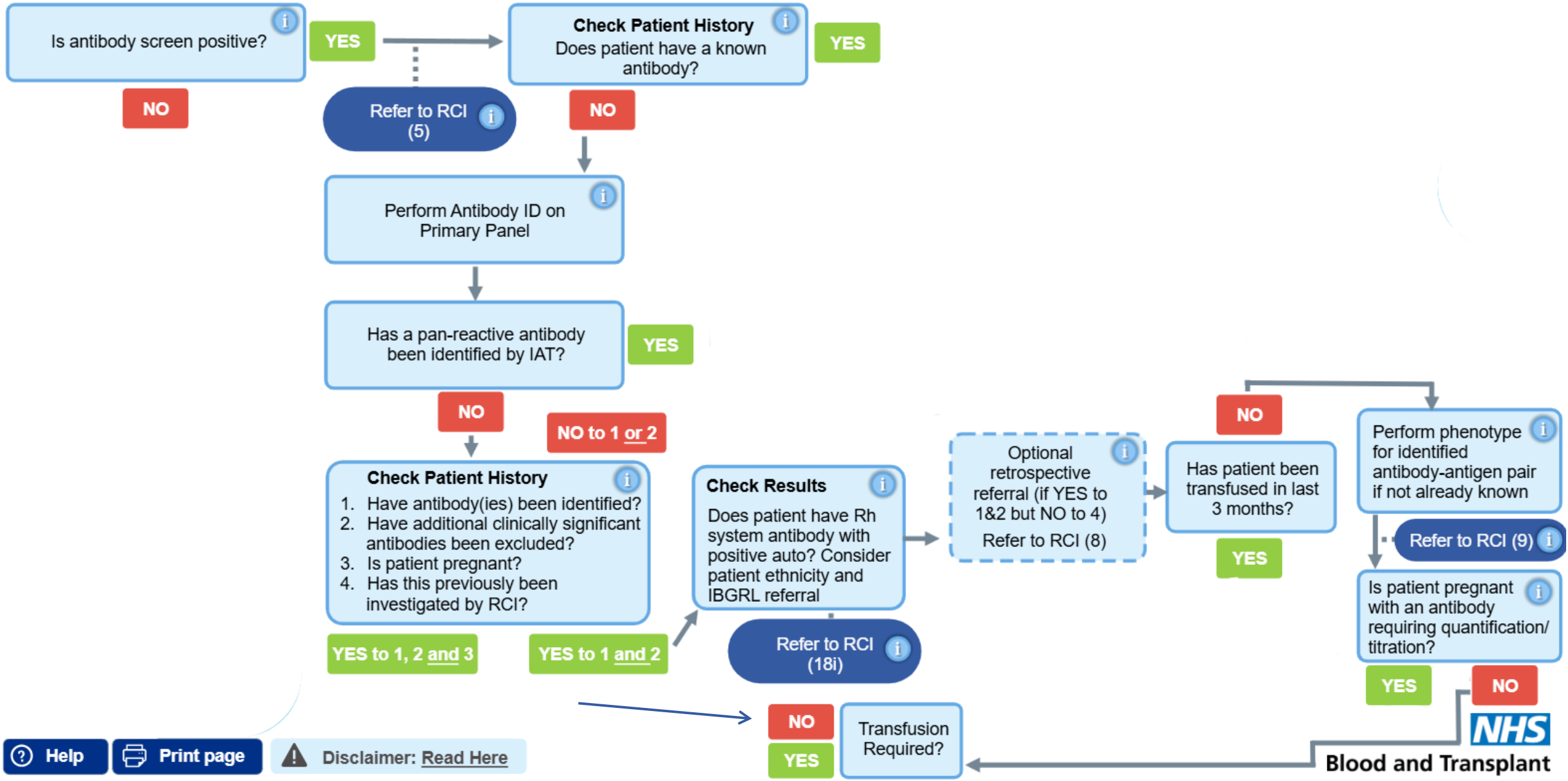
NO

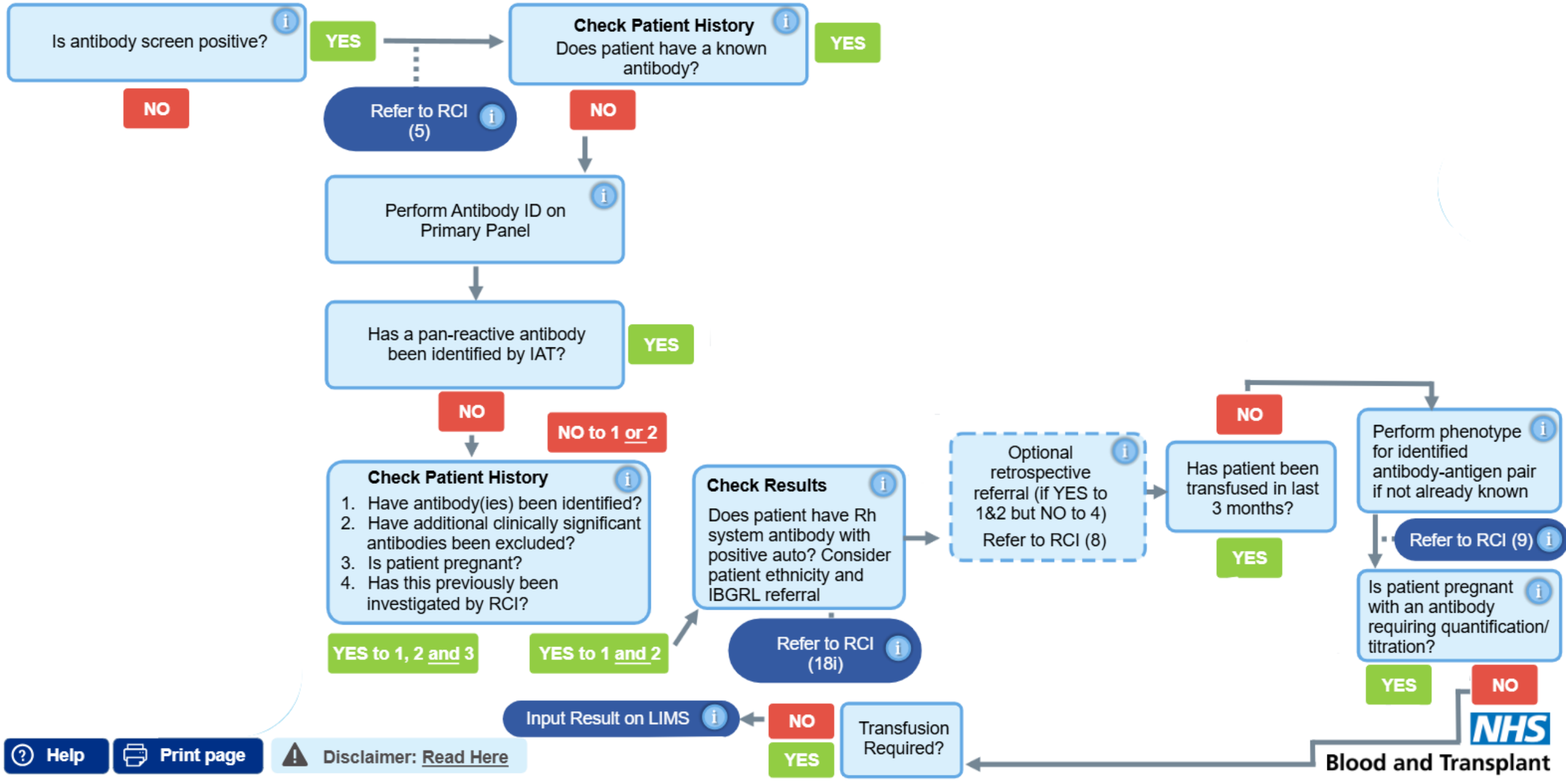
Transfusion Required?

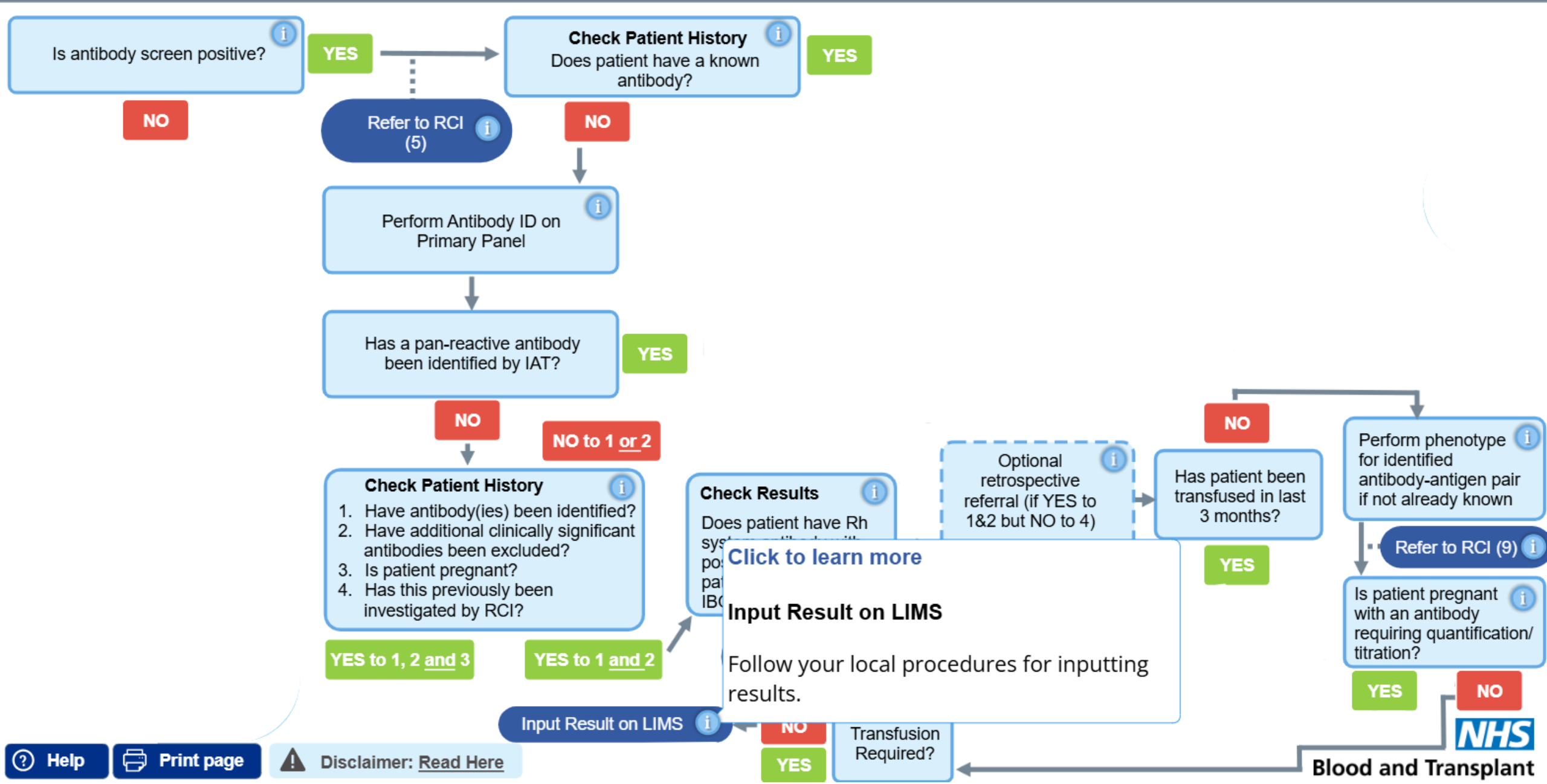
NO

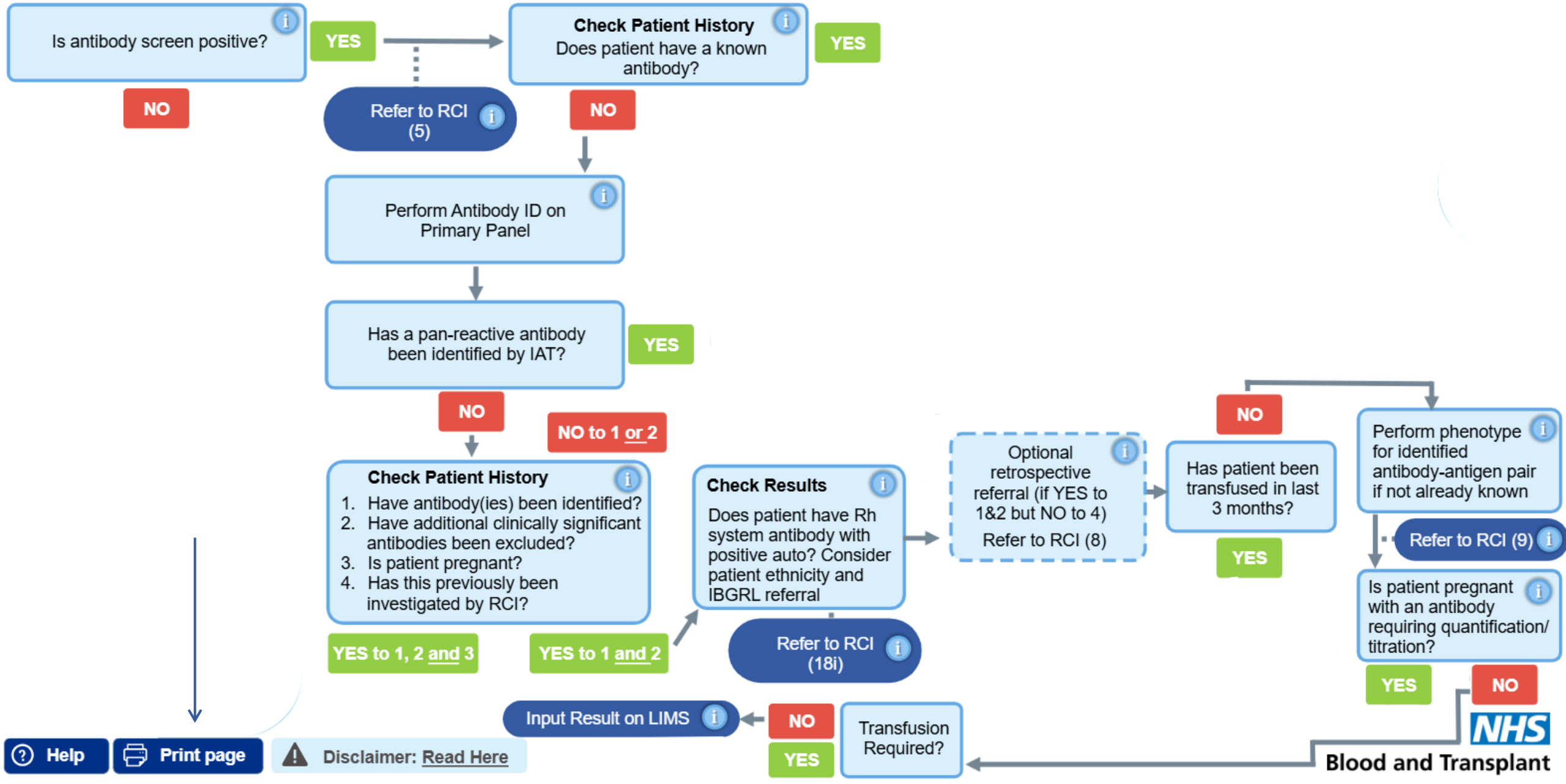
YES

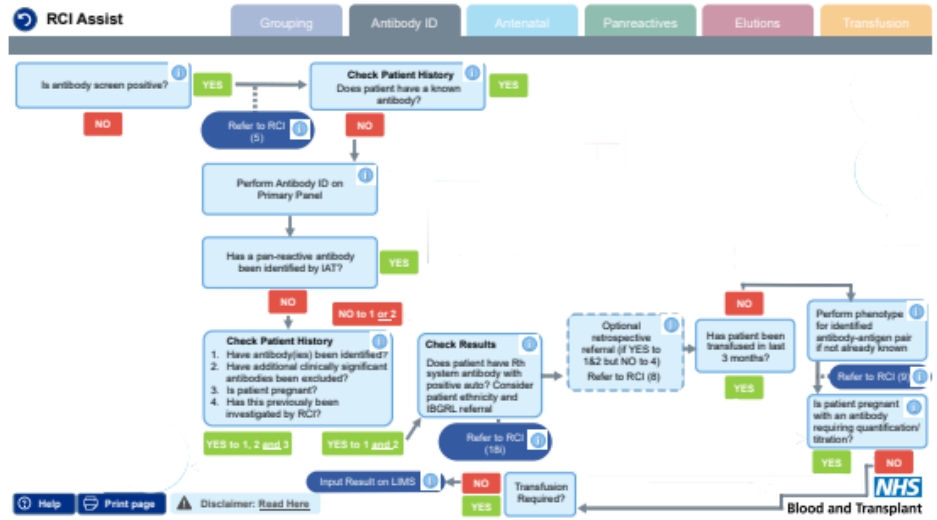
NHS Blood and Transplant


Is antibody screen positive?
YES
NO
Check Patient History
Does patient have a known antibody?
YES
NO
Refer to RCI (5)
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO
Transfusion Required?
NO
YES


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
Has patient been transfused in last 3 months?
NO
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO
Transfusion Required?
NO
YES
Input Result on LIMS


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh
Optional retrospective referral (if YES to 1&2 but NO to 4)
Has patient been transfused in last 3 months?
NO
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO
Click to learn more
Input Result on LIMS
Follow your local procedures for inputting results.
Input Result on LIMS
NO
YES
Transfusion Required?


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES
NO
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO
Transfusion Required?
NO
YES
Input Result on LIMS



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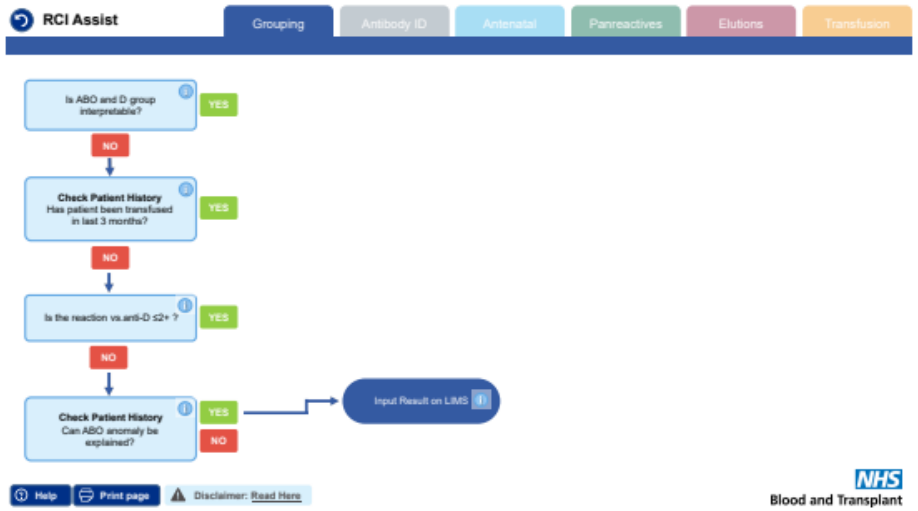

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Pages All

Layout Portrait

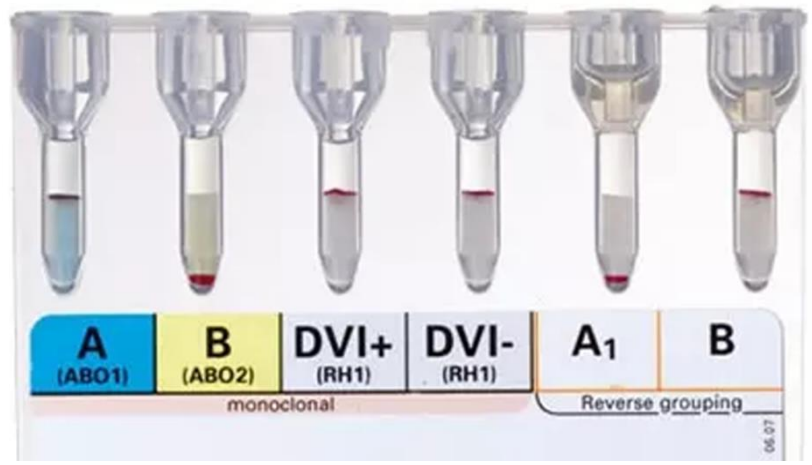
More settings

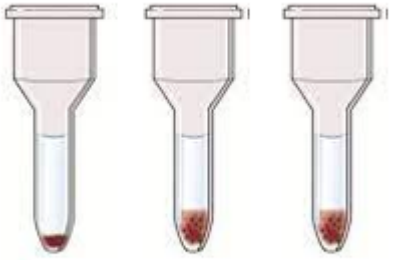
Save Cancel

Is this Sp-ICE-ing up your life?
OBOS having a good time?

Case 4

- 54-year-old female
- Group & Screen
- 2 units RBC
- PV bleed
- Not previously seen by your lab
- No record on Sp-ICE
- No historical antibodies
- Not previously seen by RCI





Patient group & screen results

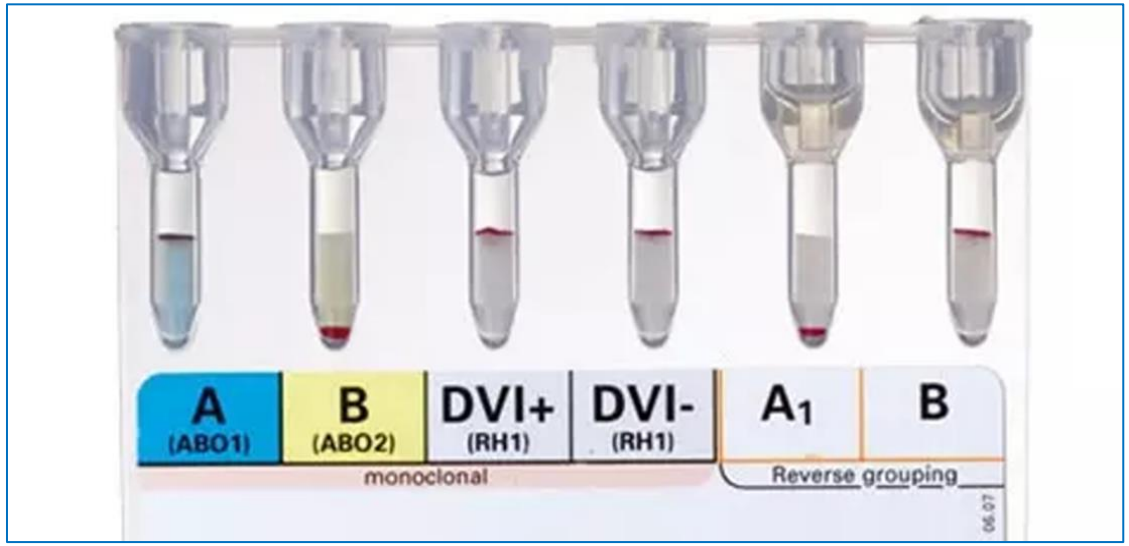
Is ABO and D group interpretable?

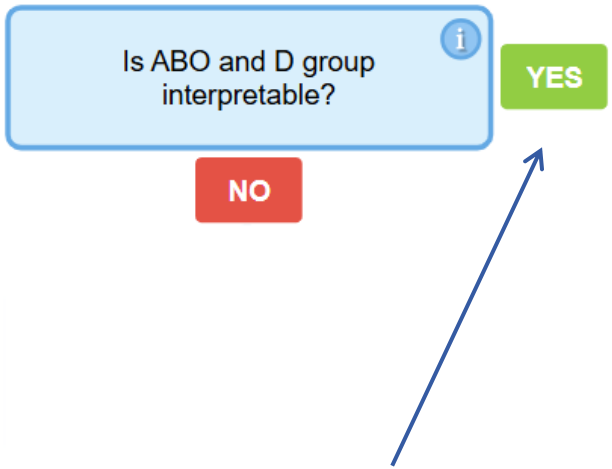
YES

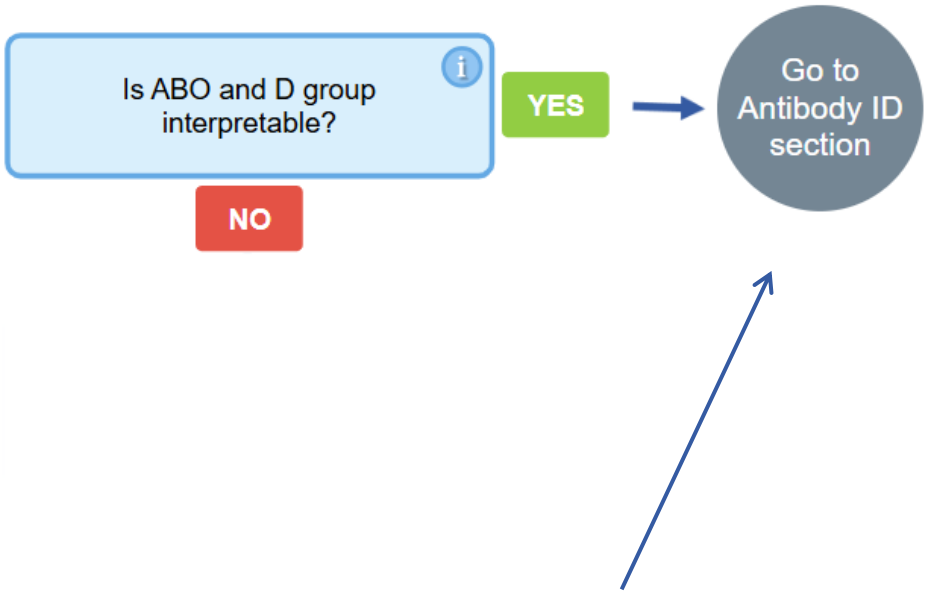
NO

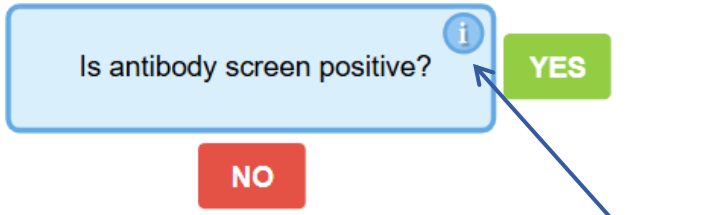
Yes, the ABO and D group is interpretable

The forward and reverse ABO group match in accordance with Landsteiner's law and the D group shows strong positive reactions



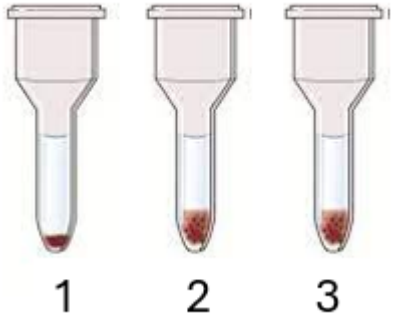

Is ABO and D group interpretable?
YES
NO


Is ABO and D group interpretable?
YES
NO
Go to Antibody ID section


Is antibody screen positive?
YES
NO

Yes, the antibody screen is positive

Positive result obtained by IAT

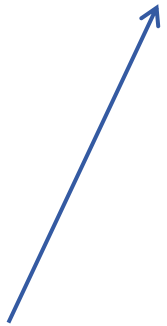


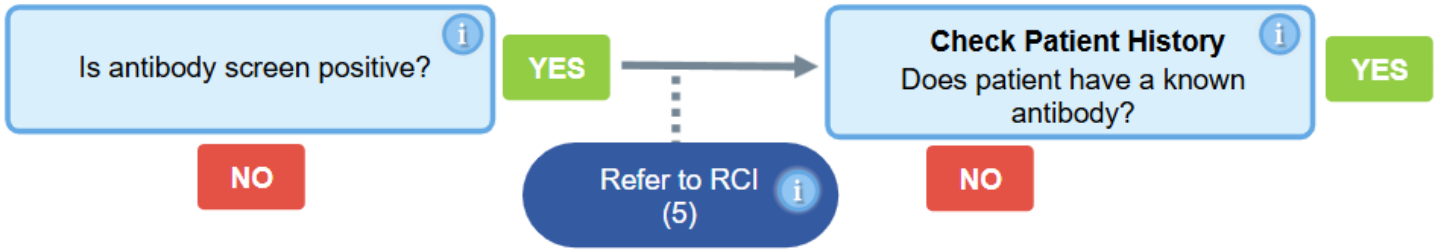
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	$R_1^wR_1$	+	+	0	0	+	0	+	+	0	0	0	+	0	0	+	0	+	0	+		0
2	R_2R_2	+	0	+	+	0	+	0	0	+	0	0	+	0	+	0	+	0	+	0		(+)
3	rr	0	0	0	+	+	+	0	+	0	4	+	0	0	0	+	+	0	0	+		+

Is antibody screen positive?

YES

NO





54-year-old female

Group & Screen

2 units RBC

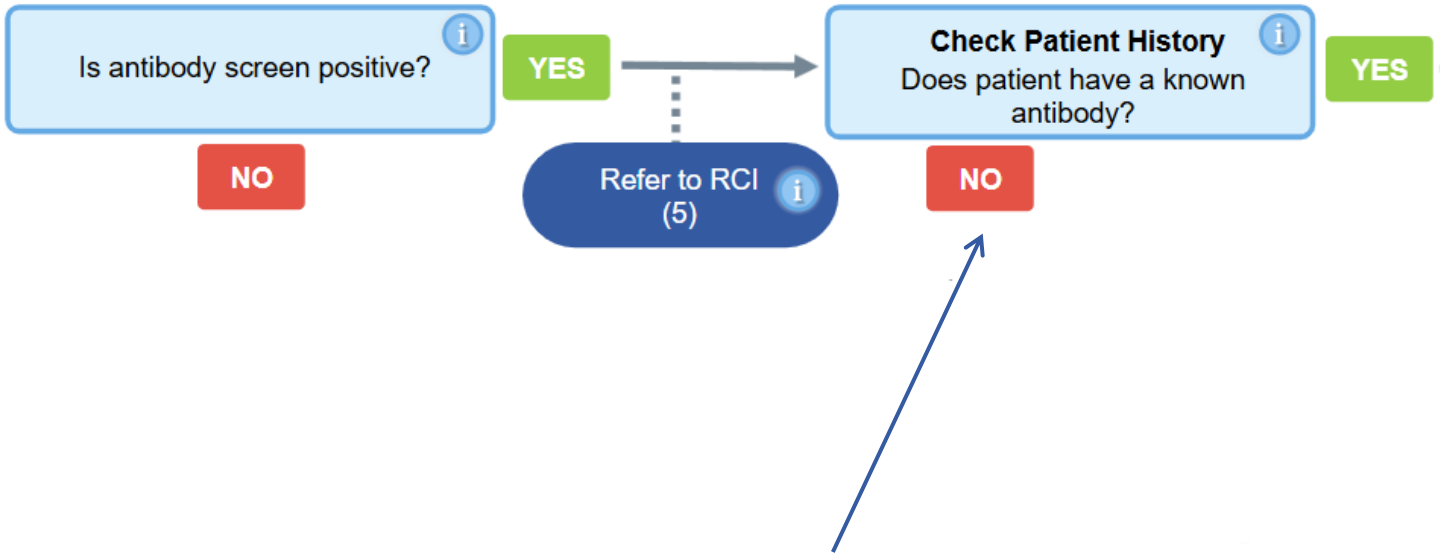
PV bleed

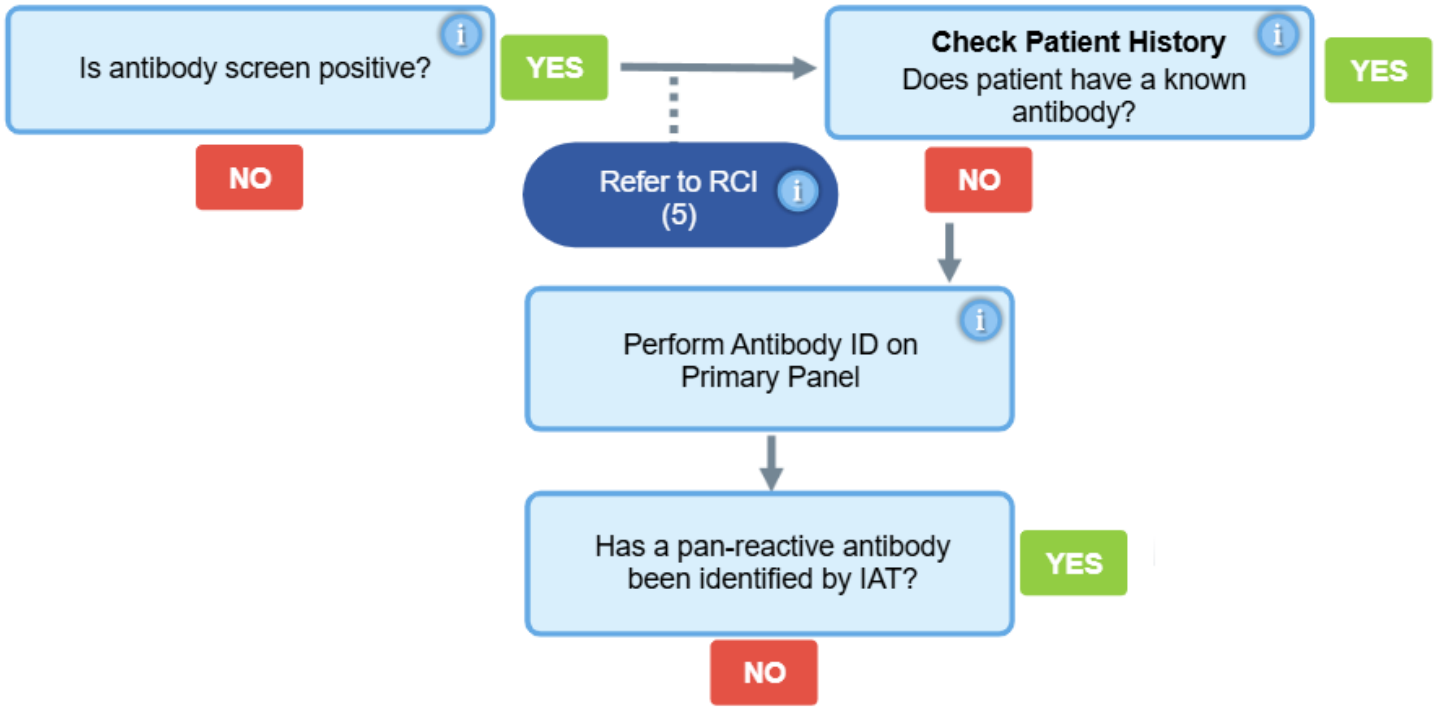
Not previously seen by your lab

No record on Sp-ICE

No historical antibodies

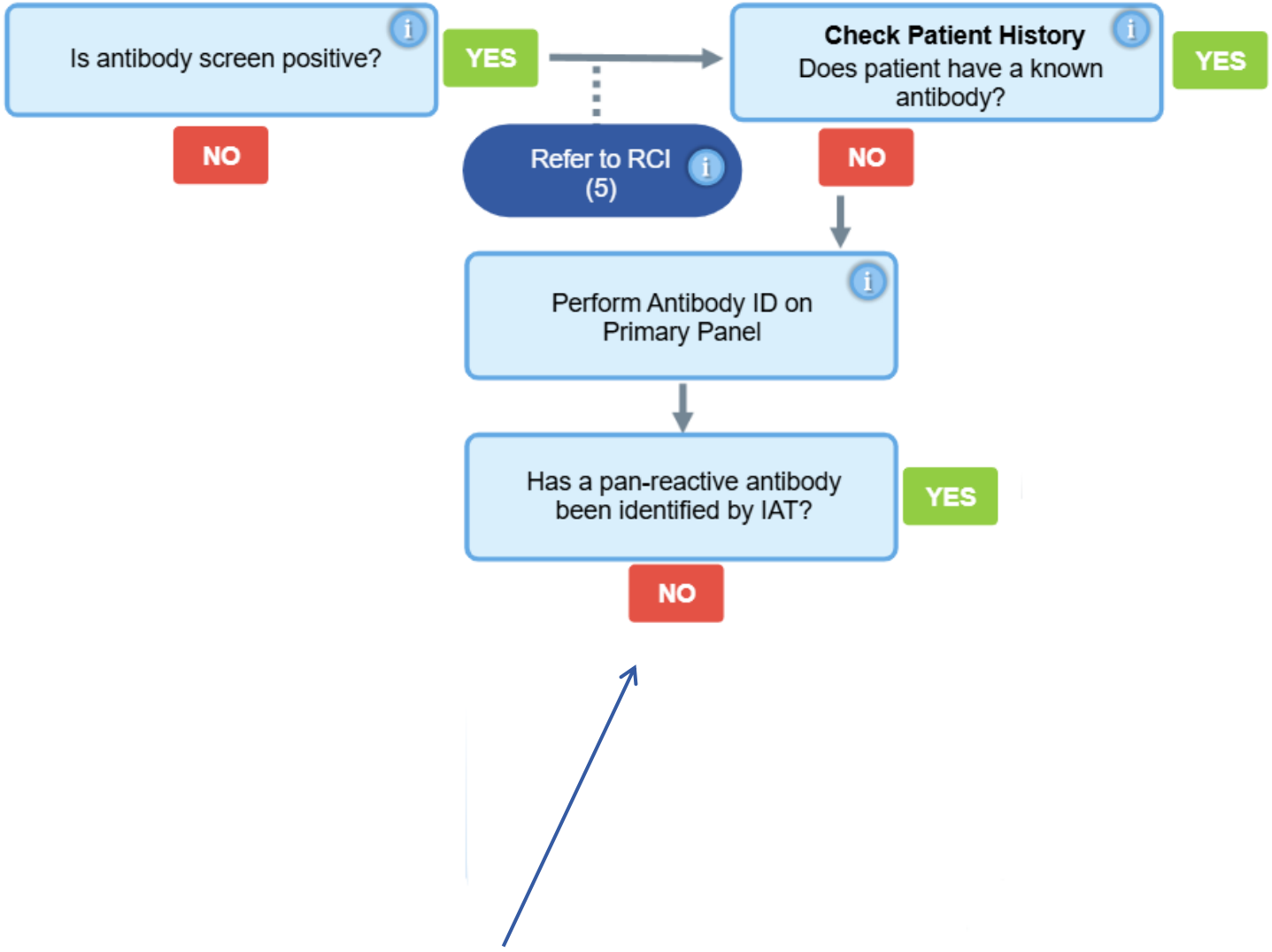
Not previously seen by RCI

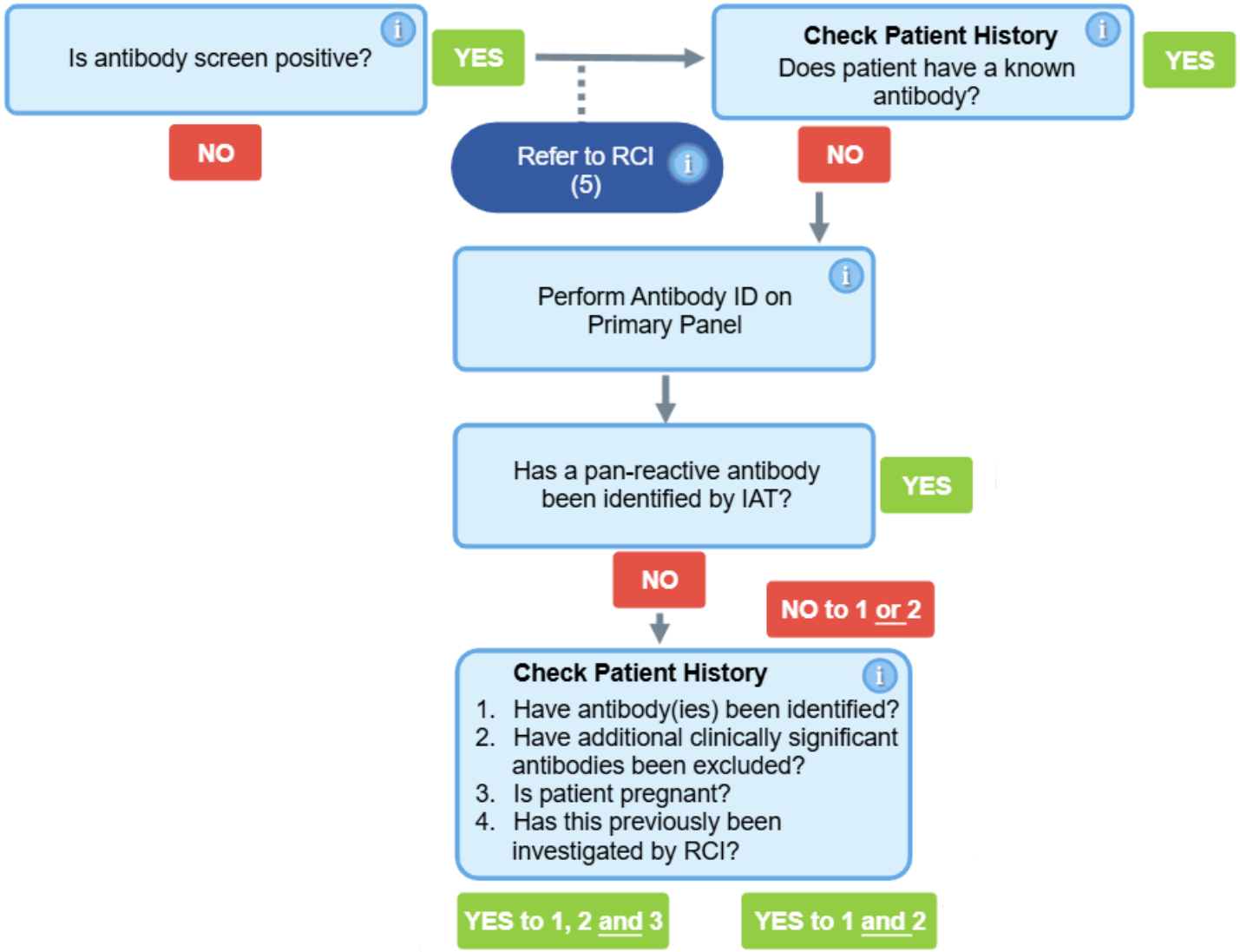

Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO

Case 4 – ABID Panel 1

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	5	0	0	+	0	0	+	+	0	0	+		(+)	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	0	+	0	+	+	0	HLA+	0	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	1	0	0	+	0	+	0	+	0	0	+	HLA+	(+)	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		(+)	0
5	r''r	0	0	+	+	+	+	0	+	0	2	0	0	+	0	0	+	0	+	+	0		0	2
6	rr	0	0	0	+	+	+	+	0	+	3	0	+	0	0	0	0	+	0	0	+		(+)	2
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	(+)	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		0	2
9	rr	0	0	0	+	+	0	+	+	0	2	0	0	+	+	+	0	0	+	+	0	Cob+	0	2
10	rr	0	0	0	+	+	+	0	+	0	4	+	0	+	0	0	+	+	0	0	+	Kna-	(+)	2
																						Auto	0	/
																						K control	2	/


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

Case 4 – ABID Panel 1

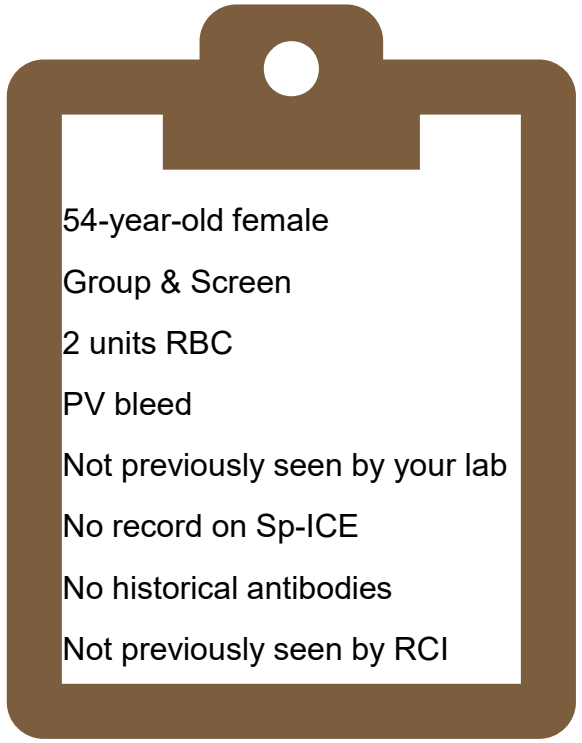
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	Lu^a	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	5	0	0	+	0	0	+	+	0	0	+		(+)	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	0	+	0	+	+	0	HLA+	0	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	1	0	0	+	0	+	0	+	0	0	+	HLA+	(+)	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		(+)	0
5	r''r	0	0	+	+	+	+	0	+	0	2	0	0	+	0	0	+	0	+	+	0		0	2
6	rr	0	0	0	+	+	+	+	0	+	3	0	+	0	0	0	0	+	0	0	+		(+)	2
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	(+)	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		0	2
9	rr	0	0	0	+	+	0	+	+	0	2	0	0	+	+	+	0	0	+	+	0	Cob+	0	2
10	rr	0	0	0	+	+	+	0	+	0	4	+	0	+	0	0	+	+	0	0	+	Kna-	(+)	2
																						Auto	0	/
																						K control	2	/

Probable anti-Fya and enzyme anti-c
Have not excluded anti-Lu^a (and enzyme anti-E?)

Case 4 – ABID Panel 1

Require at least two examples of reagent red cells expressing the antigen and non-reactive with at least two examples of reagent red cells lacking the antigen

													K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	ENZ
													0	+	0	0	+	+	0	0	+		(+)	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	4	0	+	+	0	0	+	0	+	+	0		0	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	1	0	0	+	0	+	0	+	0	0	+	HLA+	(+)	2
4	r'r	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0	+		(+)	0
5	r''r	0	0	+	+	+	+	0	+	0	2	0	0	+	0	0	+	0	+	+	0		0	2
6	rr	0	0	0	+	+	+	+	0	+	3	0	+	0	0	0	0	+	0	0	+		(+)	2
7	rr	0	0	0	+	+	0	+	0	+	0	0	+	+	0	0	+	+	0	+	0	Do(a+b+)	(+)	2
8	rr	0	0	0	+	+	+	0	0	+	0	0	0	+	+	0	+	0	+	0	+		0	2
9	rr	0	0	0	+	+	0	+	+	0	2	0	0	+	+	+	0	0	+	+	0	Cob+	0	2
10	rr	0	0	0	+	+	+	0	+	0	4	+	0	+	0	0	+	+	0	0	+	Kna-	(+)	2
																						Auto	0	/
																						K control	2	/

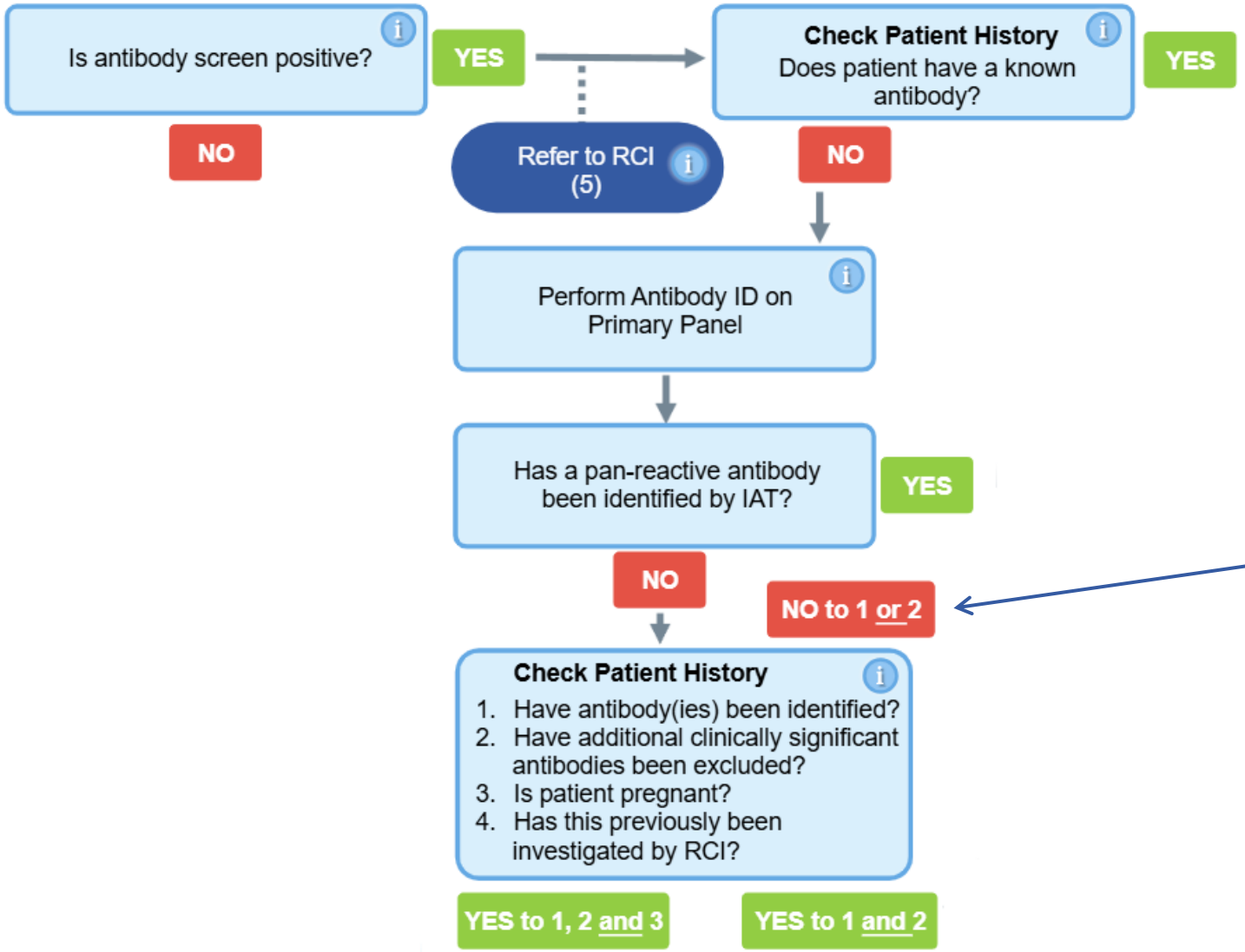


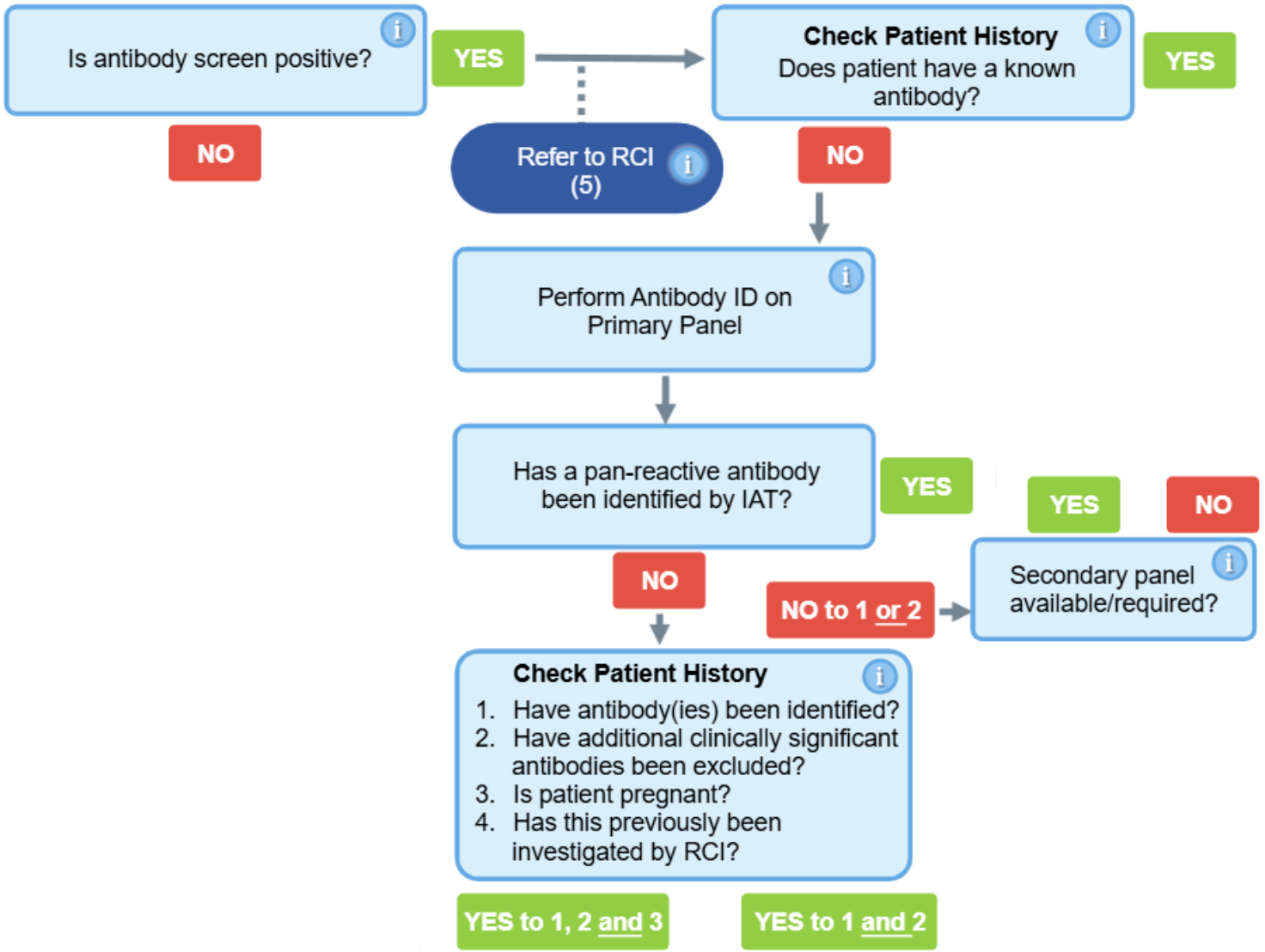
Check Patient Results and History

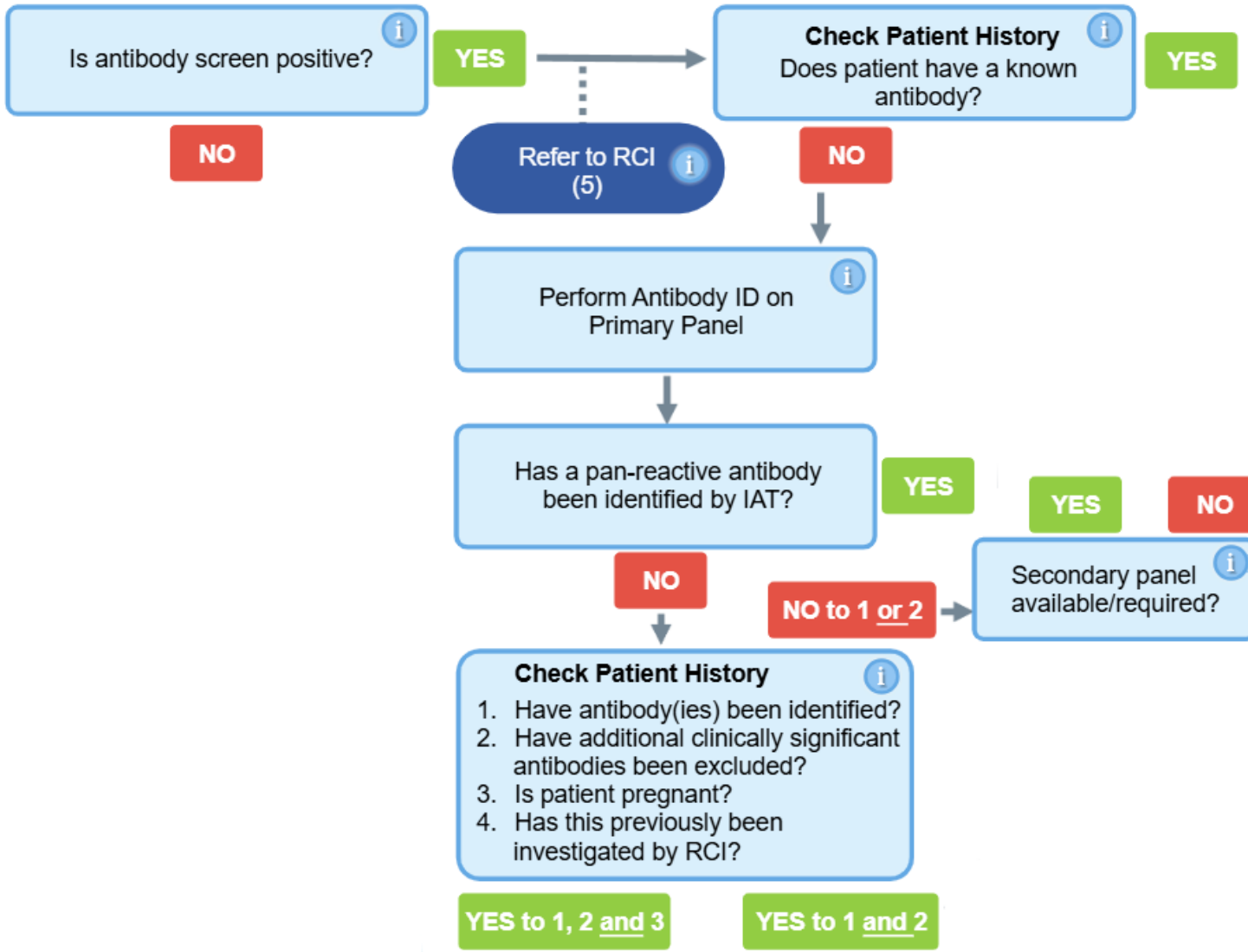
1. Have antibod(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

Hints and tips – reading and interpreting antibody ID panels

- Know the clinical significance of antibodies (read BSH guidelines)
- Confirm antibodies as alloantibodies (antigen phenotyping)
- Don't forget antigen dosage of cells
- Remember which cells are destroyed by enzyme which is worth considering when you are doing exclusions
- Cold reactive alloantibodies may react by IAT (E.g. Lewis and M antibodies)
- Column Agglutination Technology (CAT) can be prone to non-specific reactions
- Sometimes enzyme pan-reactivity causes non-specific reactivity in IAT. In such cases, please ensure that you can exclude all clinically significant antibodies by IAT.


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
NO to 1 or 2
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2


Is antibody screen positive?
YES
NO
Check Patient History
Does patient have a known antibody?
YES
NO
Refer to RCI (5)
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
YES
NO
NO to 1 or 2
Secondary panel available/required?
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

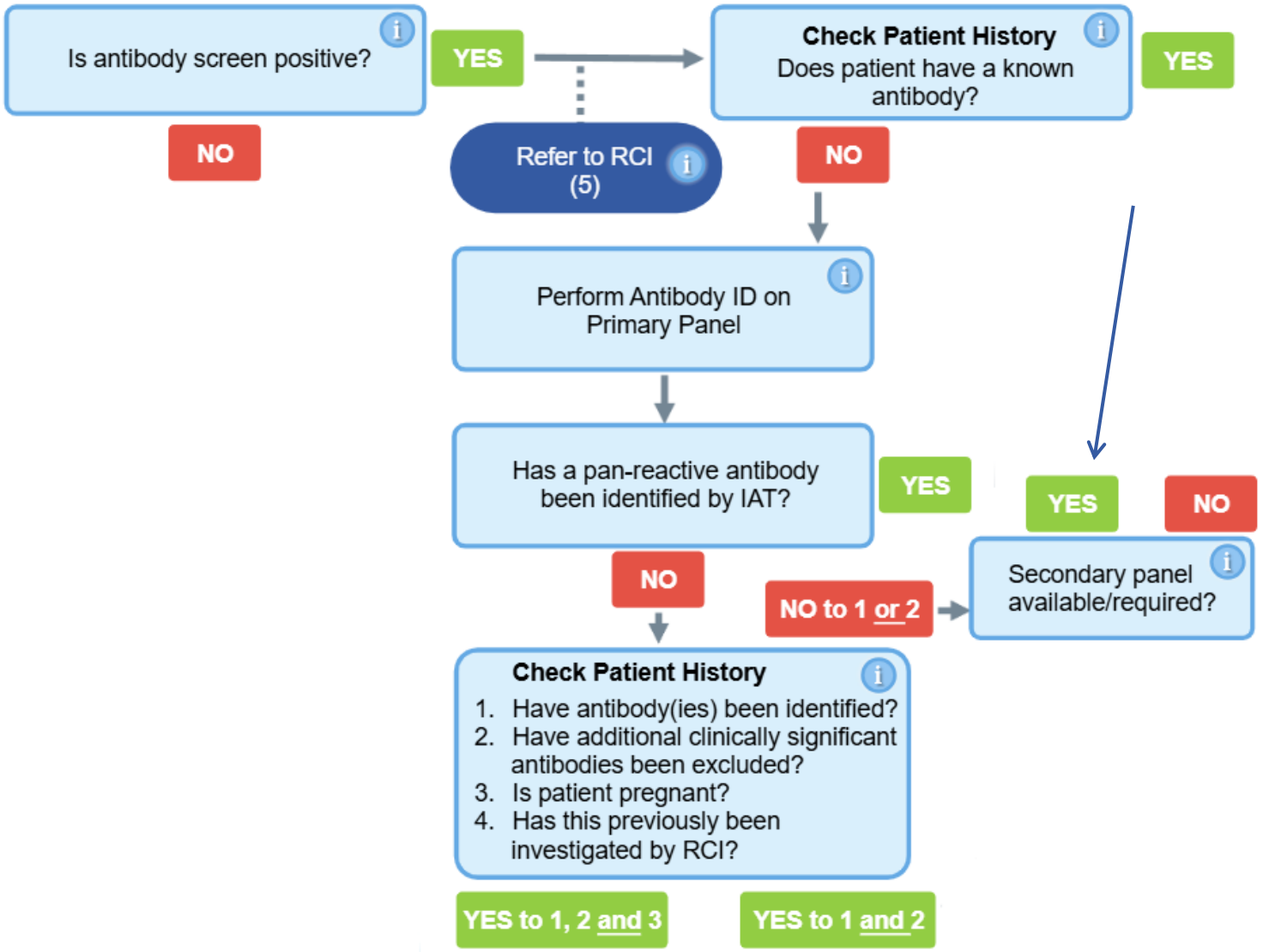


Click to learn more

Secondary panel available/required?

If you have an additional panel available in your laboratory this should be performed in order to help resolve the patient's serology, if it will be of benefit to completing the investigation in your laboratory. Occasionally, a secondary panel is available but is not required, as it will not aid the resolution of the patient's serology. For example, performing a second panel on patients with anti-e, or those known to have multiple antibodies may still leave many clinically significant antibodies not excluded. In such cases, please refer to RCI after the first panel has been performed. This saves staff time and conserves patient plasma.

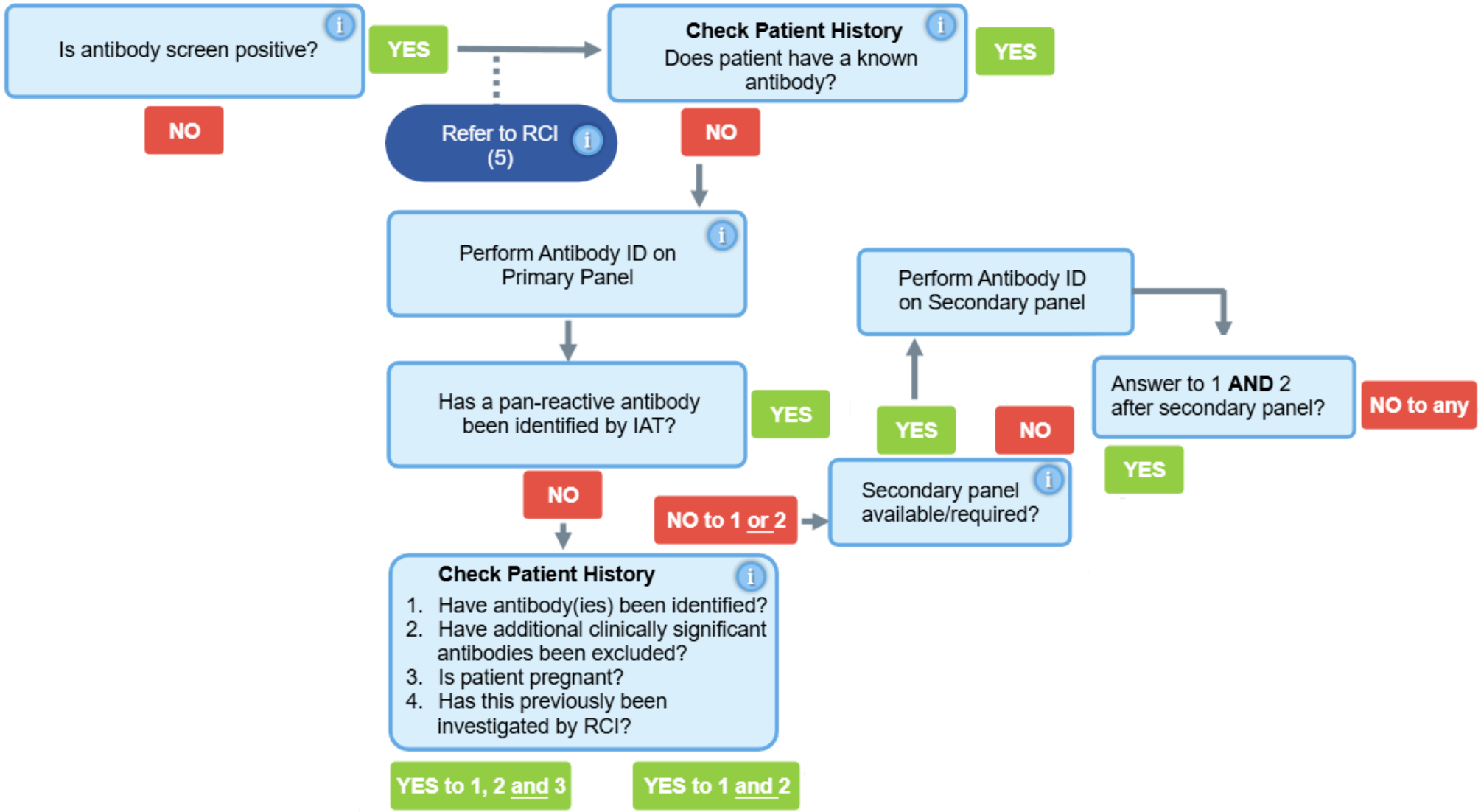
Alternatively, cases such as those described above can be referred after the antibody screen is confirmed positive (see referral point 5). This may be useful for patients that are seen on a regular basis and do not require confirmation that all previously detected antibodies are still present by a hospital lab before referral.


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
YES
NO
NO to 1 or 2
Secondary panel available/required?
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2

Case 4 – secondary panel

Cell	Rh	D	C	E	c	e	M	N	S	s	P1	~~Lu^a~~	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT	EIAT
1	$R_1^wR_1$	+	+	0	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+	+	0		0	0
2	R_1R_1	+	+	0	0	+	+	0	+	0	1	0	+	+	0	0	+	+	0	0	+		(+)	0
3	R_2R_2	+	0	+	+	0	0	+	0	+	0	0	0	+	0	0	0	+	0	0	+		(+)	2
4	r'r	0	+	0	+	+	+	0	0	+	2	0	0	+	0	+	0	+	0	0	+		(+)	0
5	r''r	0	0	+	+	+	+	0	+	0	0	0	0	+	0	0	+	0	+	+	0		0	2
6	rr	0	0	0	+	+	+	+	0	+	4	0	+	0	0	0	+	+	0	+	0		(+)	2
7	rr	0	0	0	+	+	0	+	0	+	1	0	+	+	0	+	0	0	+	+	0		0	2
8	rr	0	0	0	+	+	+	0	+	0	0	0	0	+	+	0	0	0	+	0	+		0	2
9	rr	0	0	0	+	+	0	+	0	+	0	~~+~~	0	+	0	+	0	0	+	+	0		0	2
10	rr	0	0	0	+	+	0	+	+	0	3	0	0	+	0	0	0	+	0	0	+		(+)	2
																						Auto	/	/
																						K control	2	/

Obtained second pos and neg to confirm anti-Fy^a and second neg for anti-c. Have also excluded anti-Lu^a. (Still not excluded enzyme anti-E).


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
NO to 1 or 2
Secondary panel available/required?
YES
NO
Perform Antibody ID on Secondary panel
Answer to 1 AND 2 after secondary panel?
YES
NO to any

Holler – do you want to do anything else?

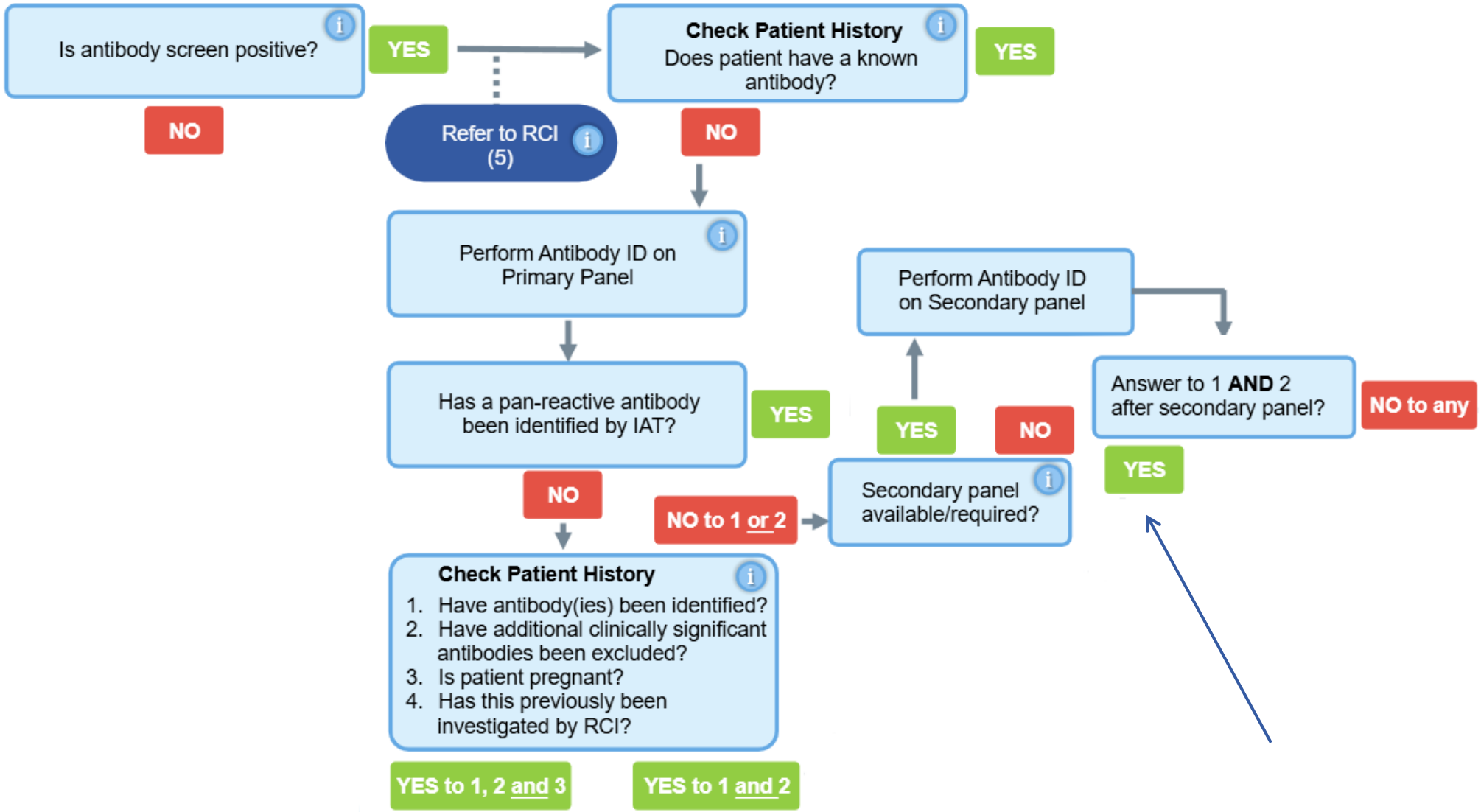
Zig a zig ah, good suggestions!

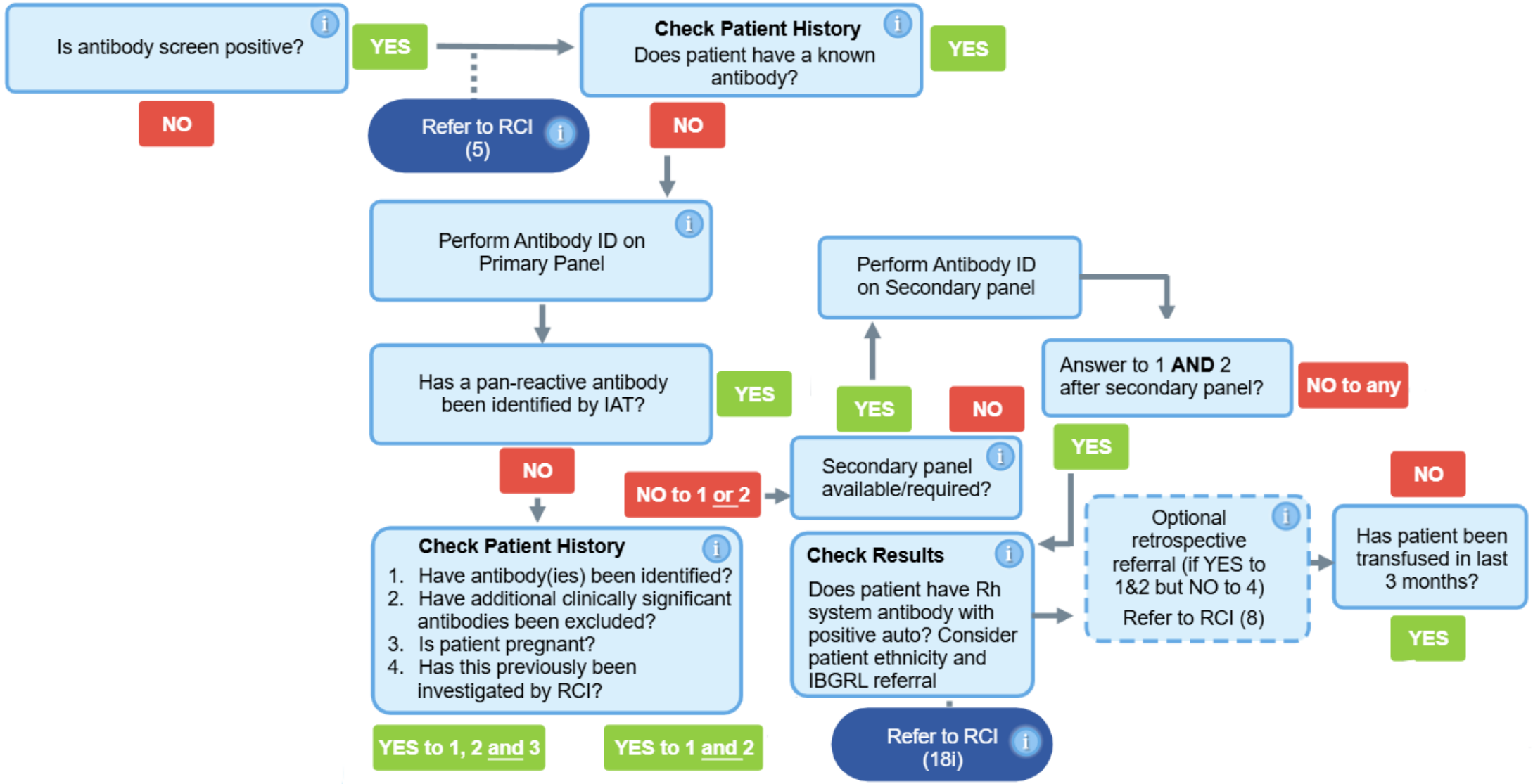
No need to actively exclude anti-E enzyme

- 6.4.4.When an Rh antibody is suspected, the C, c, E, e types should be determined to aid in the selection of appropriately phenotyped red cells
- Check if patient has been recently transfused

- Referral to RCI would not resolve this. R1R1 panel (c-) is IAT only
- Could check the screening cells – but they are IAT only

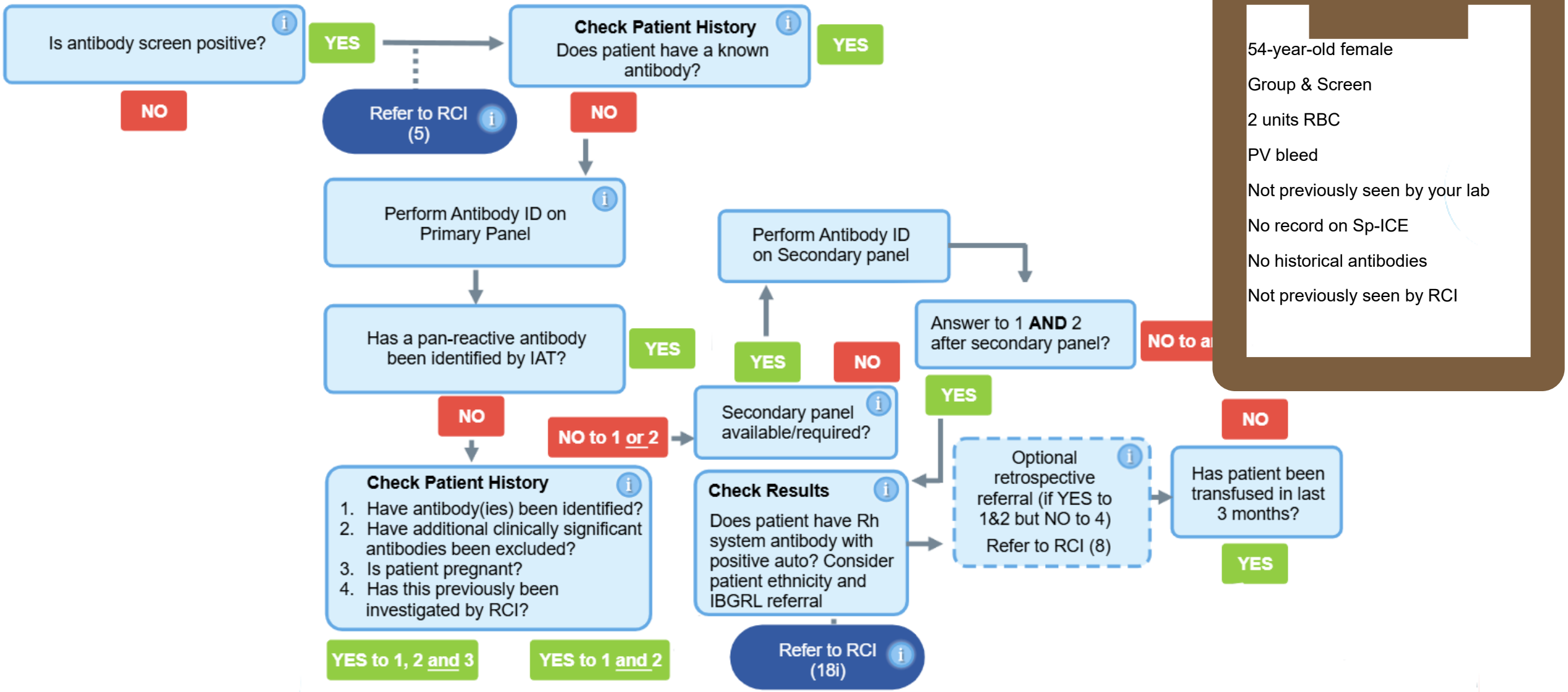
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	$R_1^wR_1$	+	+	0	0	+	0	+	+	0	0	0	+	0	0	+	0	+	0	+		0
2	R_2R_2	+	0	+	+	0	+	0	0	+	0	0	+	0	+	0	+	0	+	0		(+)
3	rr	0	0	0	+	+	+	0	+	0	4	+	0	0	0	+	+	0	0	+		+


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
NO to 1 or 2
Secondary panel available/required?
YES
NO
Perform Antibody ID on Secondary panel
Answer to 1 AND 2 after secondary panel?
NO to any
YES


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
NO to 1 or 2
Secondary panel available/required?
YES
NO
Perform Antibody ID on Secondary panel
Answer to 1 AND 2 after secondary panel?
NO to any
YES
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES

RCI Assist

Grouping | Antibody ID | Antenatal | Panreactives | Elutions | Transfusion



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RCI Assist

Grouping | Antibody ID | Antenatal | Panreactives | Elutions | Transfusion

Is antibody screen positive?

YES

NO

Refer to RCI (5)

Check Patient History
Does patient have a known antibody?

YES

NO

Perform Antibody ID on Primary Panel

Has a pan-reactive antibody been identified by IAT?

YES

NO

Check Patient History

1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

YES to 1, 2 and 3

YES to 1 and 2

NO to 1 or 2

Secondary panel available/required?

YES

NO

Perform Antibody ID on Secondary panel

YES

Check Results

Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral

Refer to RCI (18i)

Answer to 1 **AND** 2 after secondary panel?

NO to a

YES

Optional retrospective referral (if YES to 1&2 but NO to 4)

Refer to RCI (8)

NO

Has patient been transfused in last 3 months?

YES

54-year-old female

Group & Screen

2 units RBC

PV bleed

Not previously seen by your lab

No record on Sp-ICE

No historical antibodies

Not previously seen by RCI

Quick call to ward confirms no transfusions

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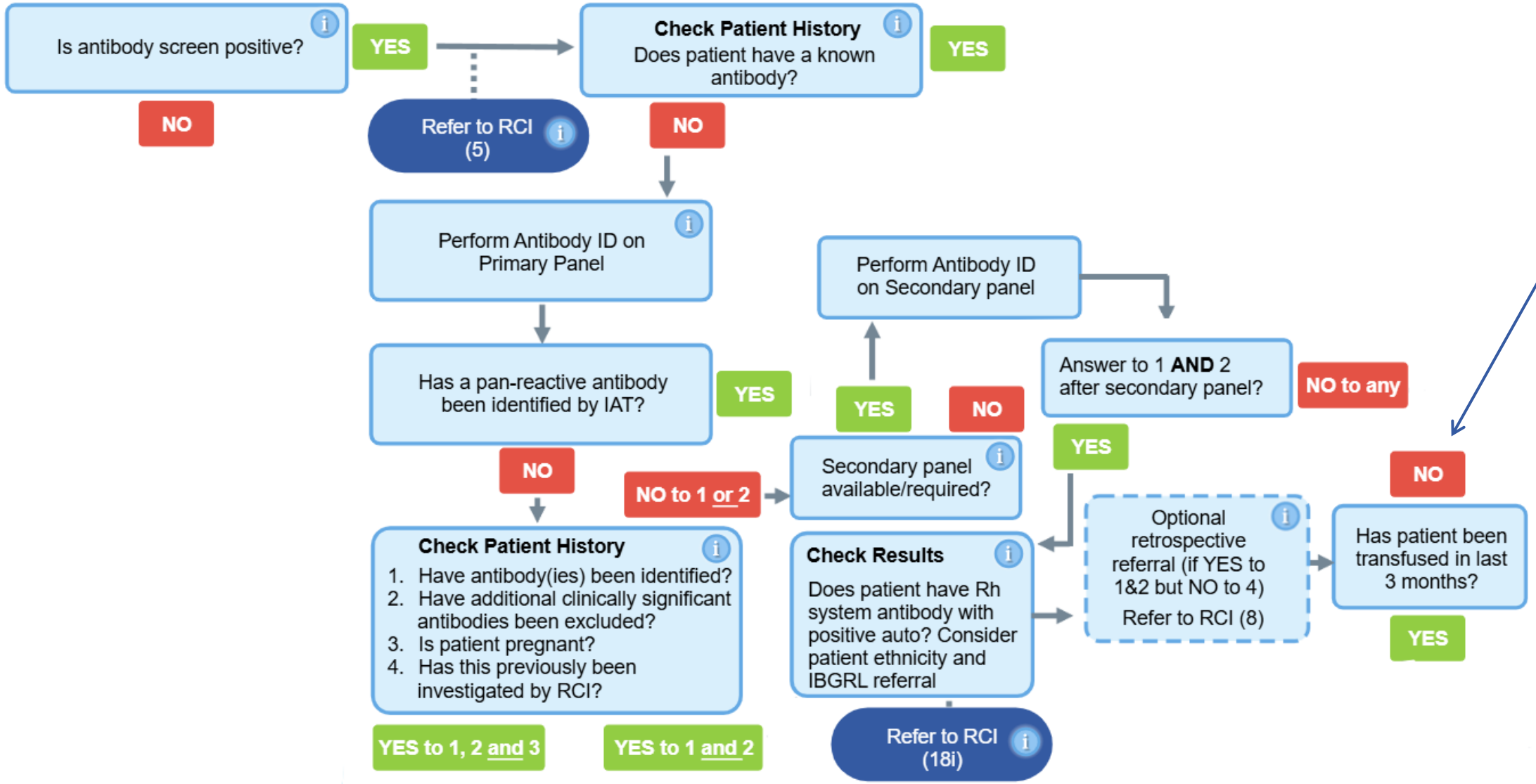
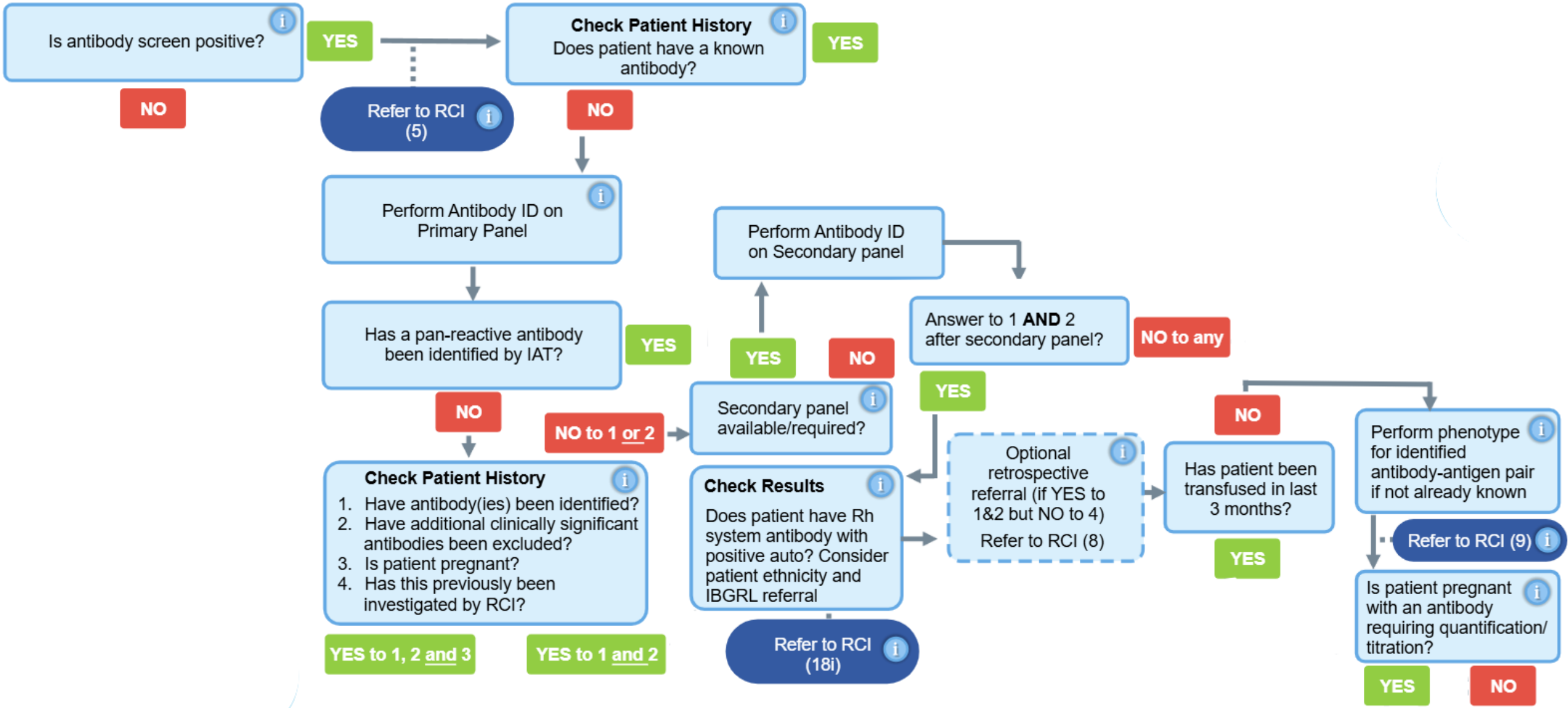
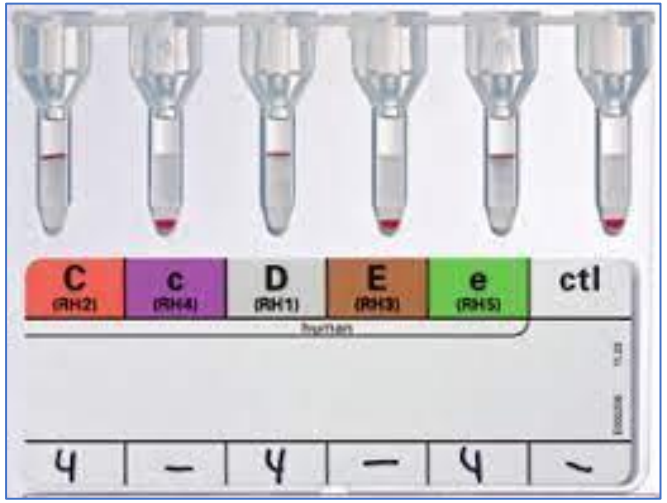


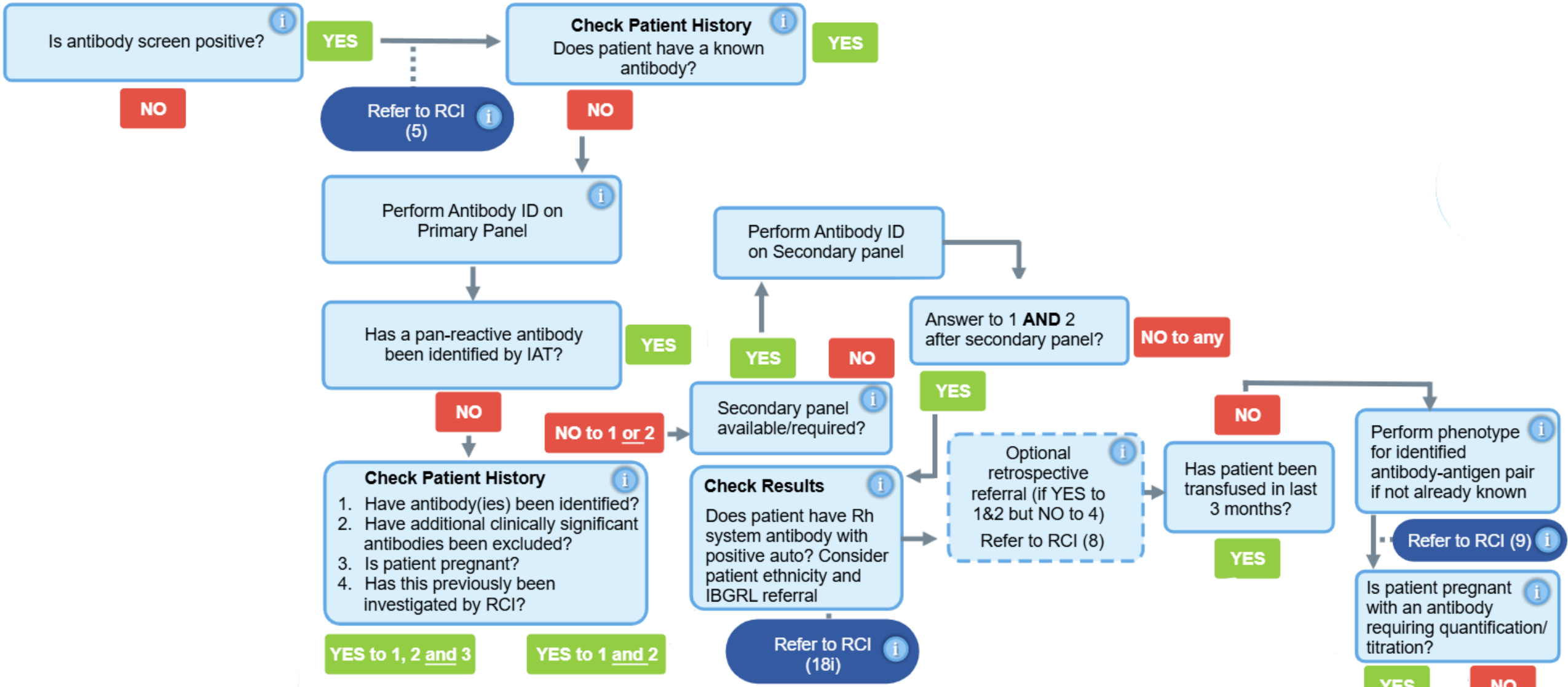
NHS Blood and Transplant


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
NO to 1 or 2
Secondary panel available/required?
YES
NO
Perform Antibody ID on Secondary panel
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Answer to 1 AND 2 after secondary panel?
NO to any
YES
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO

Phenotyping results

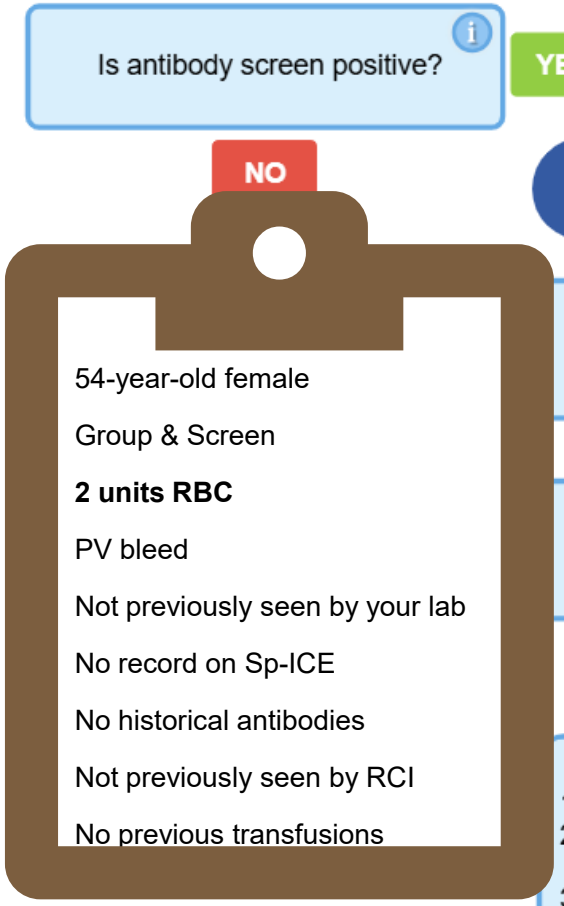
- 6.4.4.When an Rh antibody is suspected, the C, c, E, e types should be determined to aid in the selection of appropriately phenotyped red cells
- This lab performs extended Rh/K and Duffy phenotyping
- Remember to check to see if the autocontrol is positive when using IgG antisera
- Patient is c- E- K- Fy(a)- negative and K negative
- Group on second sample confirmed the patient is A RhD+
- A R1R1 K- Fy(a-)




Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
NO to 1 or 2
Secondary panel available/required?
YES
NO
Perform Antibody ID on Secondary panel
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Answer to 1 AND 2 after secondary panel?
NO to any
YES
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
YES
Has patient been transfused in last 3 months?
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO

RCI Assist

Grouping | Antibody ID | Antenatal | Panreactives | Elutions | Transfusion



Is antibody screen positive?

YES → Refer to RCI (5)

NO → **Check Patient History** Does patient have a known antibody?

YES → Refer to RCI (5)

NO → Perform Antibody ID on Primary Panel

Has a pan-reactive antibody been identified by IAT?

YES → Perform Antibody ID on Secondary panel

NO → **Check Patient History**

1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?

YES to 1, 2 and 3 → Transfusion Required?

YES to 1 and 2 → Transfusion Required?

NO to 1 or 2 → Secondary panel available/required?

YES → Perform Antibody ID on Secondary panel

NO → **Check Results** Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral

Refer to RCI (18i)

Answer to 1 **AND** 2 after secondary panel?

NO to any → Optional retrospective referral (if YES to 1&2 but NO to 4) Refer to RCI (8)

YES → Has patient been transfused in last 3 months?

NO → Transfusion Required?

YES → Perform phenotype for identified antibody-antigen pair if not already known

Refer to RCI (9)

Is patient pregnant with an antibody requiring quantification/ titration?

YES → Transfusion Required?

NO → Transfusion Required?

Transfusion Required?

NO → Transfusion Required?

YES → Transfusion Required?

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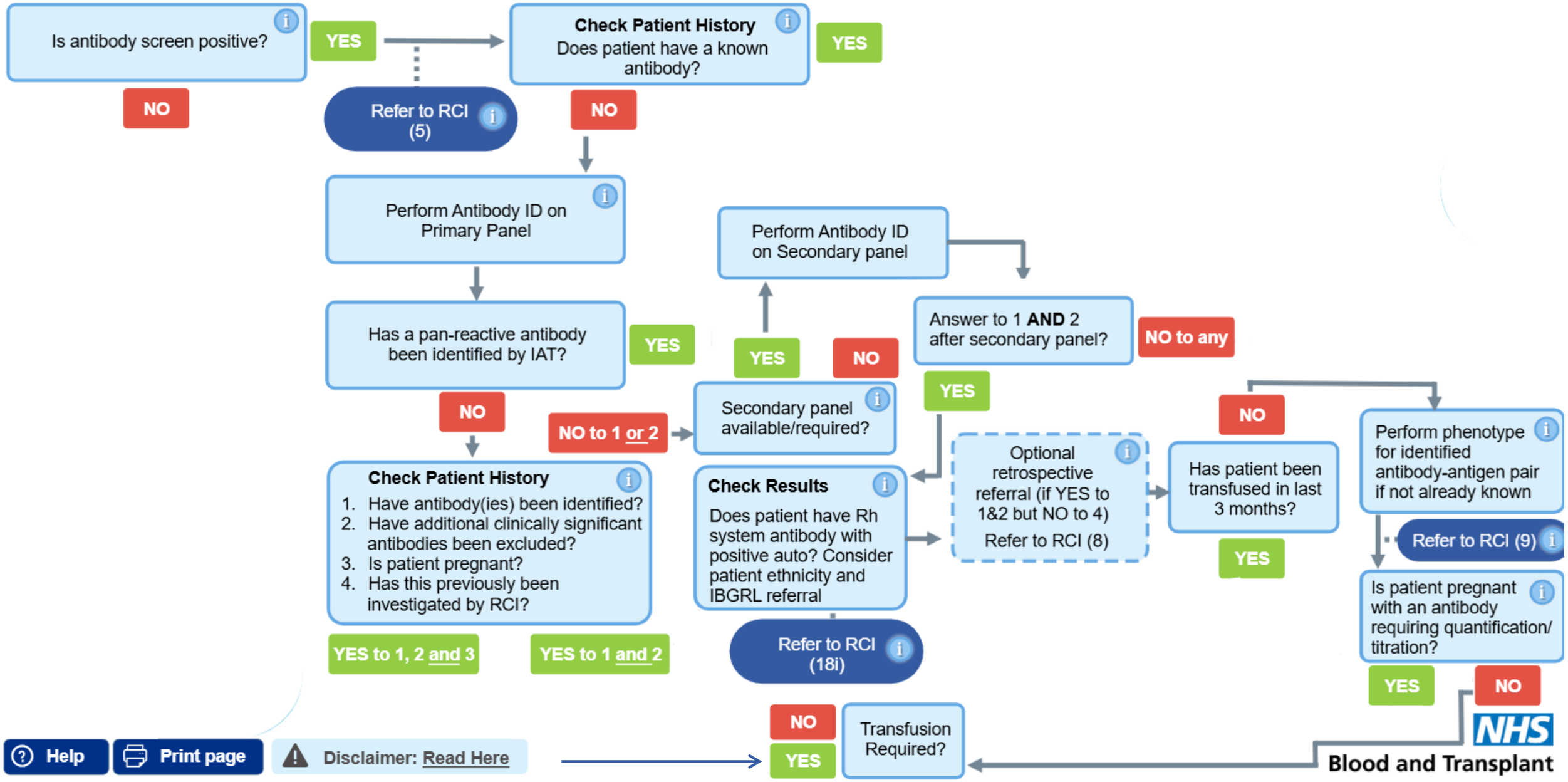
RCI Assist

Grouping | Antibody ID | Antenatal | Panreactives | Elutions | Transfusion



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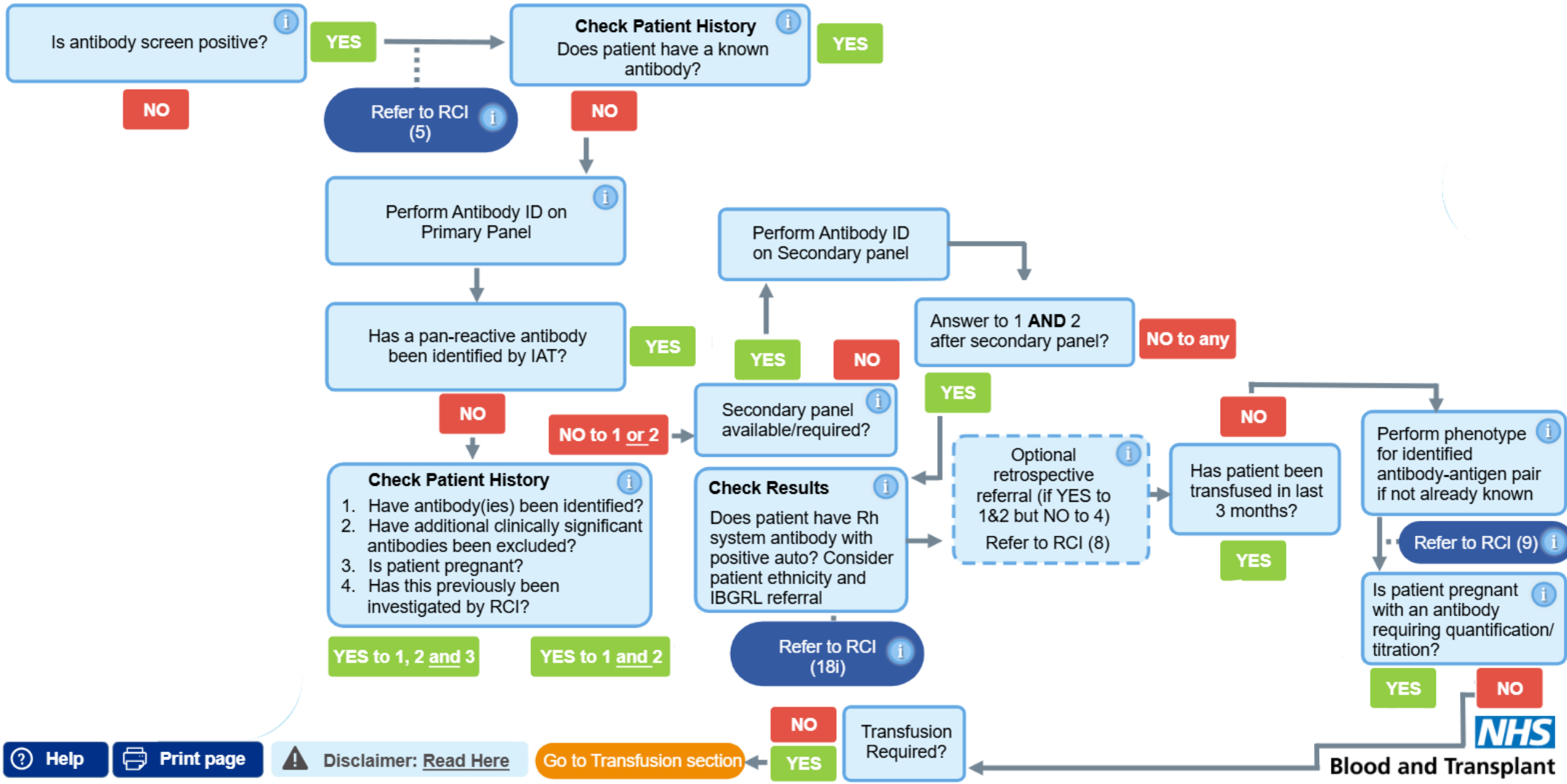
NHS Blood and Transplant


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Perform Antibody ID on Primary Panel
Has a pan-reactive antibody been identified by IAT?
YES
NO
Perform Antibody ID on Secondary panel
YES
NO
NO to 1 or 2
Secondary panel available/required?
Check Patient History
1. Have antibody(ies) been identified?
2. Have additional clinically significant antibodies been excluded?
3. Is patient pregnant?
4. Has this previously been investigated by RCI?
YES to 1, 2 and 3
YES to 1 and 2
Check Results
Does patient have Rh system antibody with positive auto? Consider patient ethnicity and IBGRL referral
Refer to RCI (18i)
Answer to 1 AND 2 after secondary panel?
NO to any
YES
Optional retrospective referral (if YES to 1&2 but NO to 4)
Refer to RCI (8)
NO
Has patient been transfused in last 3 months?
YES
Perform phenotype for identified antibody-antigen pair if not already known
Refer to RCI (9)
Is patient pregnant with an antibody requiring quantification/ titration?
YES
NO
Transfusion Required?
NO
YES
Go to Transfusion section

Check Patient History
Has patient been transfused in the last 6 weeks?

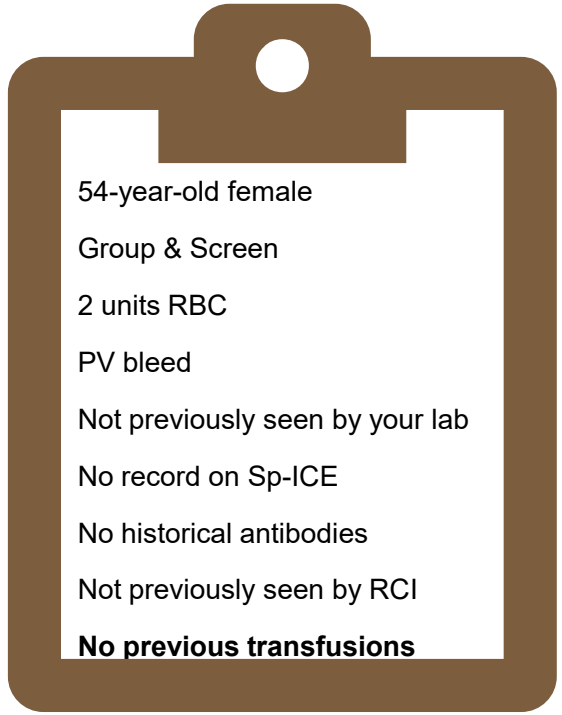
YES

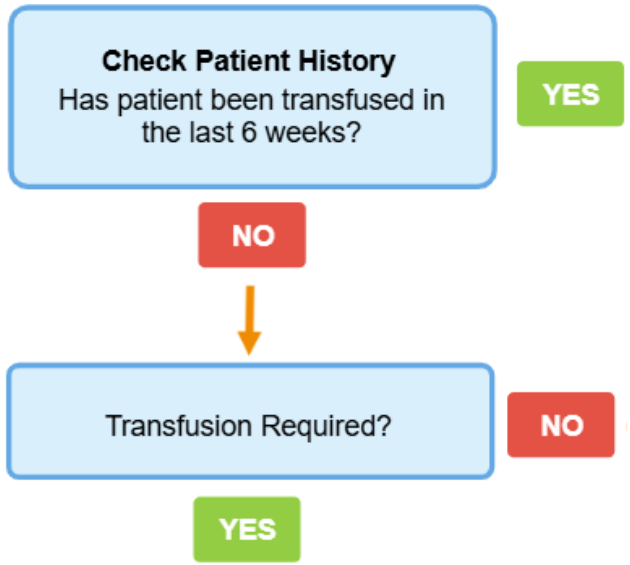
NO

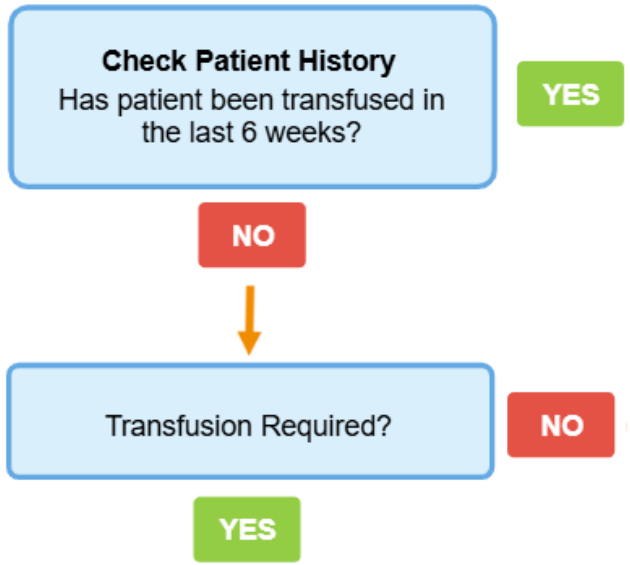
Check Patient History
Has patient been transfused in the last 6 weeks?

YES

NO




Check Patient History
Has patient been transfused in the last 6 weeks?
YES
NO
Transfusion Required?
NO
YES



54-year-old female

Group & Screen

2 units RBC

PV bleed

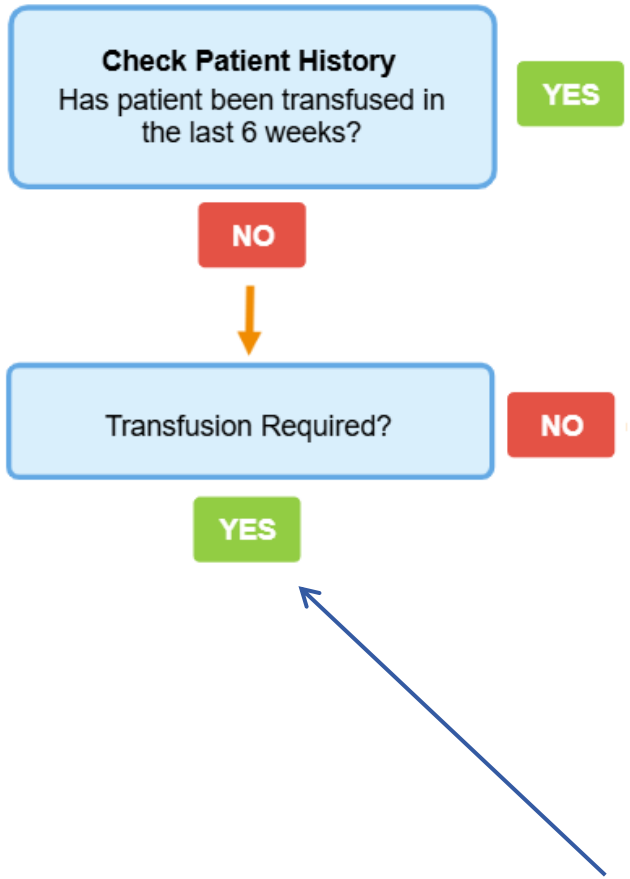
Not previously seen by your lab

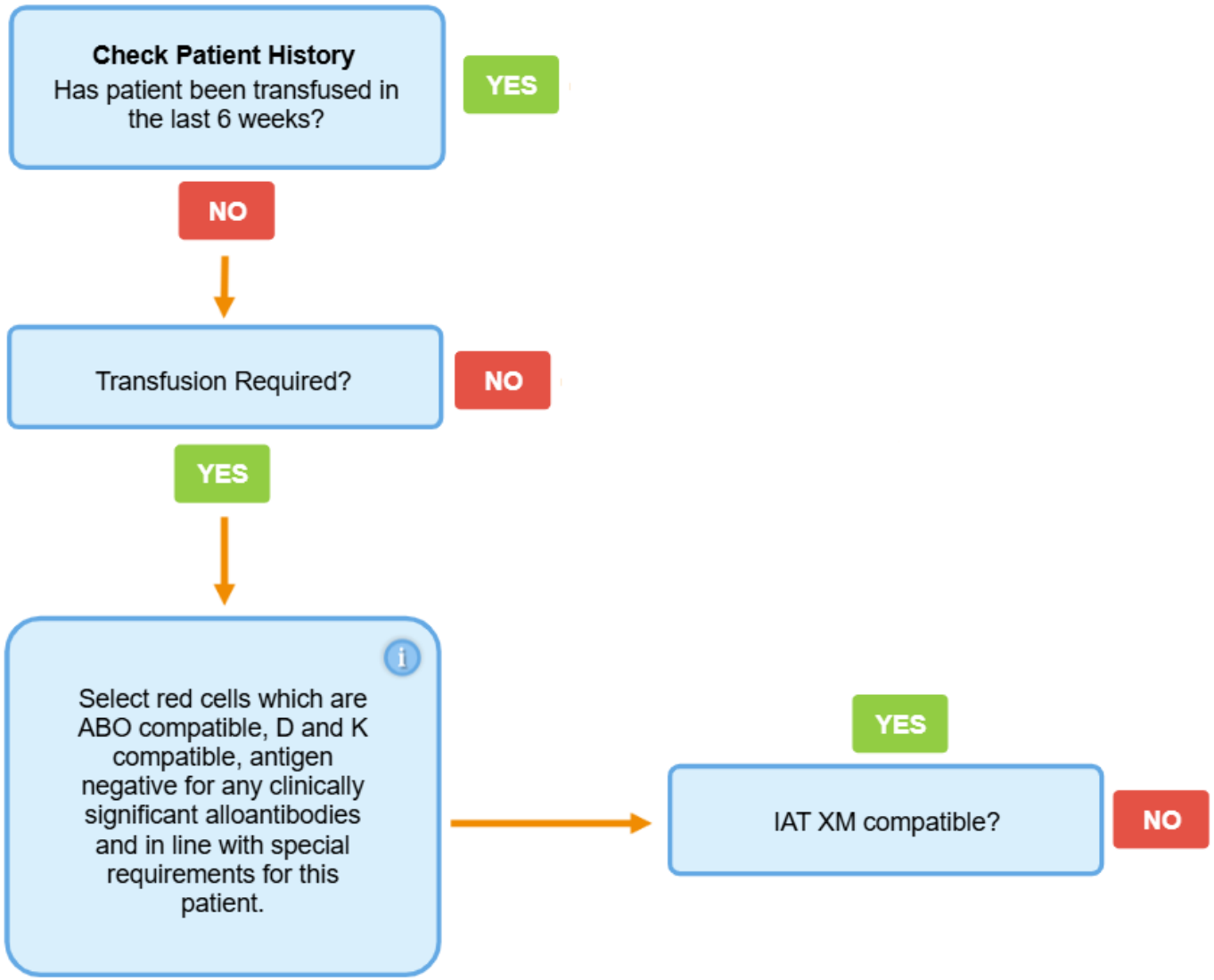
No record on Sp-ICE

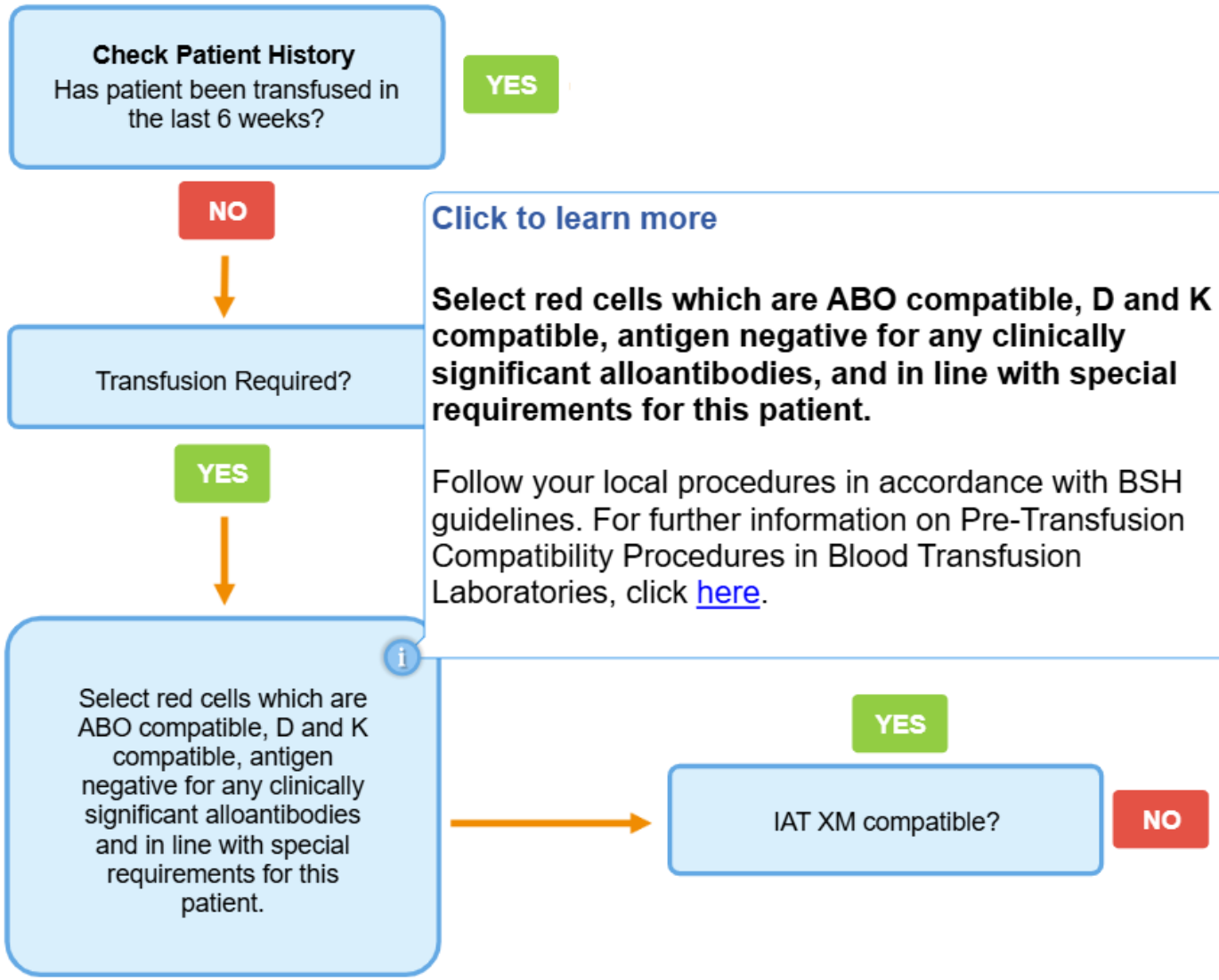
No historical antibodies

Not previously seen by RCI

No previous transfusions


Check Patient History
Has patient been transfused in the last 6 weeks?
YES
NO
Transfusion Required?
NO
YES


Check Patient History
Has patient been transfused in the last 6 weeks?
YES
NO
Transfusion Required?
NO
YES
Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.
YES
IAT XM compatible?
NO



Click to learn more

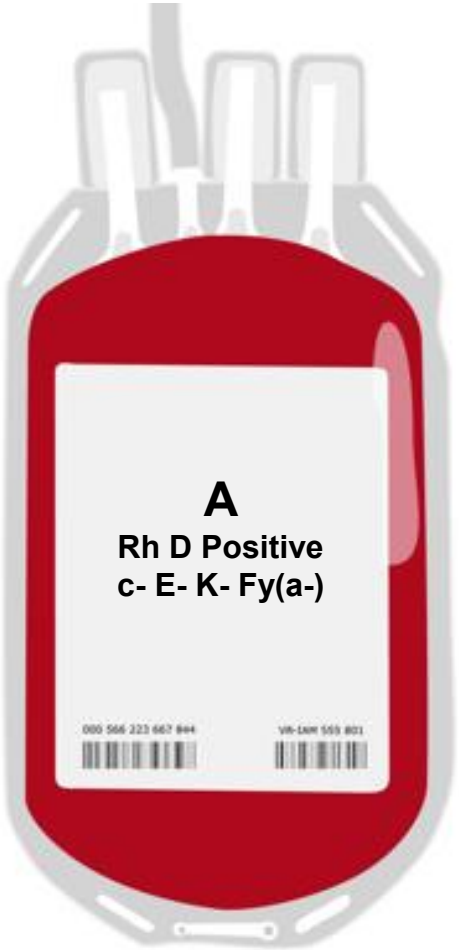
Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies, and in line with special requirements for this patient.

Follow your local procedures in accordance with BSH guidelines. For further information on Pre-Transfusion Compatibility Procedures in Blood Transfusion Laboratories, click here.

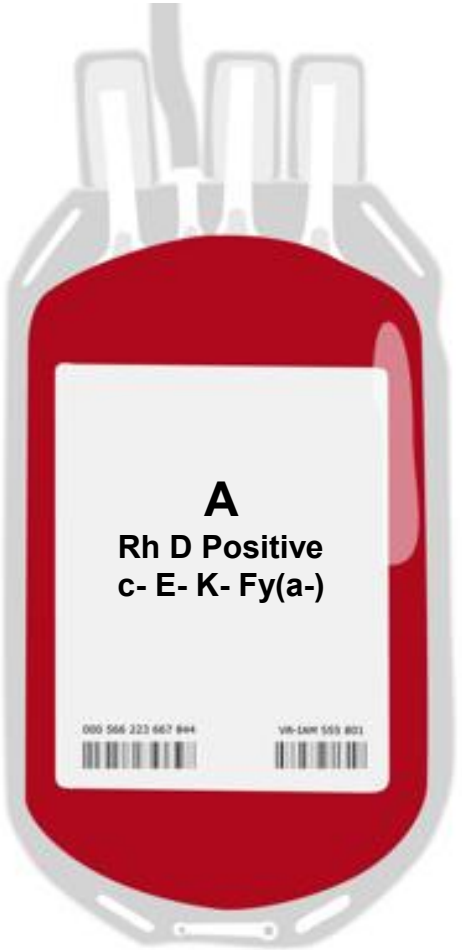
What blood would you select?

- Group A D+ c- E- K- Fy(a-)
- Group A D+ c- K- Fy(a-)
- Group O D+ c- E- K- Fy(a-)
- Group O D+ c- K- Fy(a-)
- Not sure

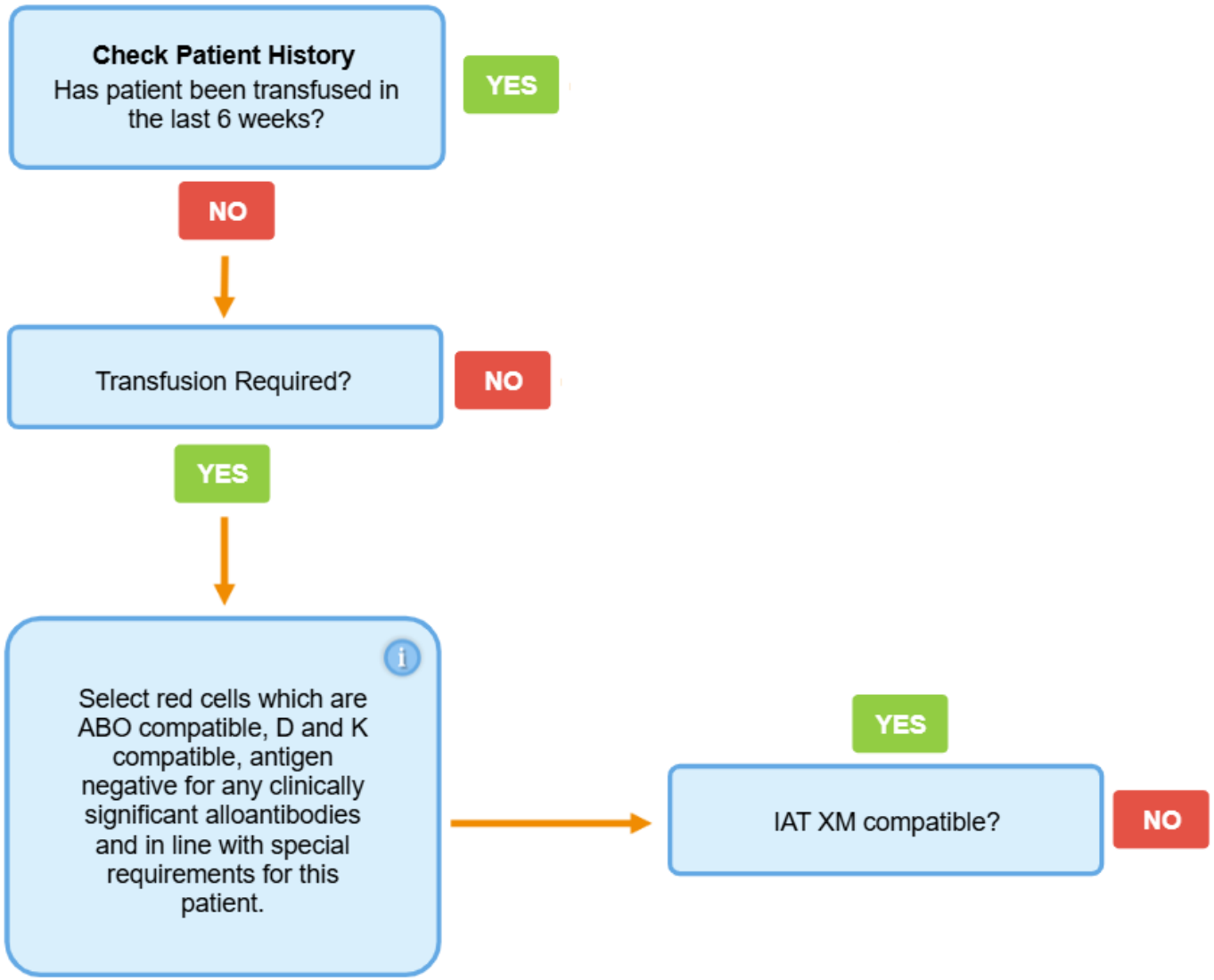
Blood Selection

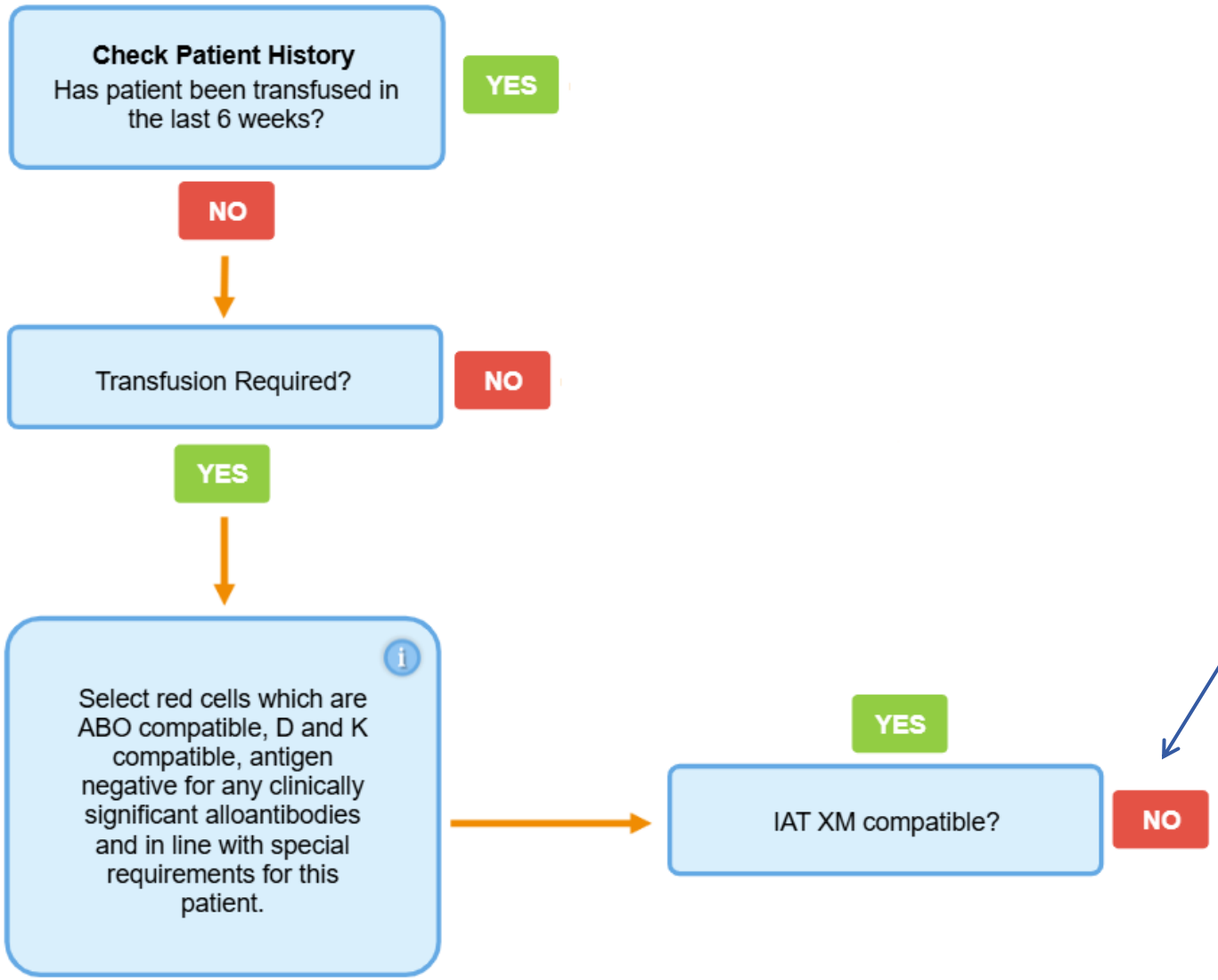


Unit 1: crossmatch compatible by IAT



Unit 2: **not** crossmatch compatible by IAT


Check Patient History
Has patient been transfused in the last 6 weeks?
YES
NO
Transfusion Required?
NO
YES
Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.
YES
IAT XM compatible?
NO


Check Patient History
Has patient been transfused in the last 6 weeks?
YES
NO
Transfusion Required?
NO
YES
Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.
YES
IAT XM compatible?
NO

Check Patient History
Has patient been transfused in the last 6 weeks?

YES

NO

Transfusion Required?

NO

YES

Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.

YES

IAT XM compatible?

NO

Unexpected Incompatibility

When an IAT crossmatch is unexpectedly incompatible it is important to check:

- Units with a compatible ABO have been selected
- The correct patient sample has been selected
- Units are negative for all identified and historical clinically significant antibodies
- All additional antibodies have been excluded (consider other antibodies which may be masked by the presence of other antibodies)
- If the unit is DAT+

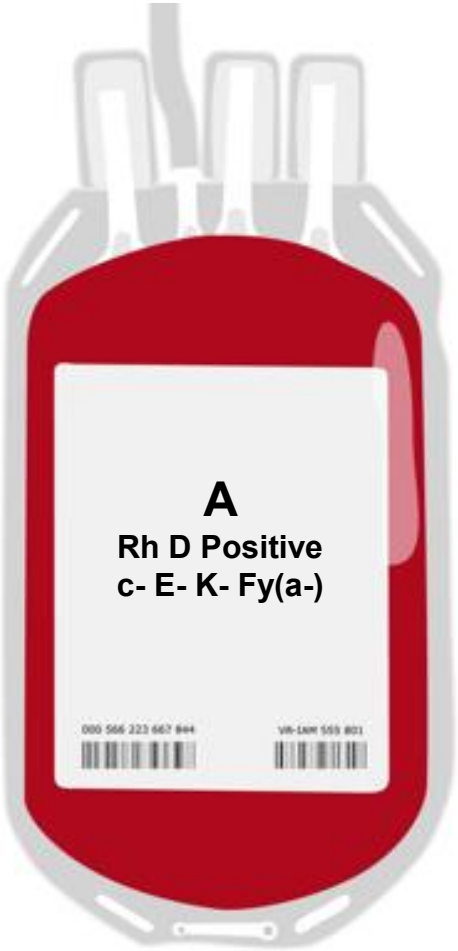
Unexpected IAT crossmatch incompatibility may be caused by low incidence antibodies; their corresponding antigens are not usually noted on antibody identification panels due to their low prevalence in the population (exceptions to this are Kp(a) and Lu(a)).
In most cases, selecting another unit for transfusion is sufficient. However, if there are multiple incompatible units or further assistance is required, please contact RCI.

Has consideration to above resolved/explained the incompatibility?

YES

NO

Blood Selection



Unit 3: crossmatch compatible by IAT

Check Patient History
Has patient been transfused in the last 6 weeks?

YES

NO

Transfusion Required?

NO

YES

Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.

YES

IAT XM compatible?

NO

Unexpected Incompatibility

When an IAT crossmatch is unexpectedly incompatible it is important to check:

- Units with a compatible ABO have been selected
- The correct patient sample has been selected
- Units are negative for all identified and historical clinically significant antibodies
- All additional antibodies have been excluded (consider other antibodies which may be masked by the presence of other antibodies)
- If the unit is DAT+

Unexpected IAT crossmatch incompatibility may be caused by low incidence antibodies; their corresponding antigens are not usually noted on antibody identification panels due to their low prevalence in the population (exceptions to this are Kp(a) and Lu(a)).
In most cases, selecting another unit for transfusion is sufficient. However, if there are multiple incompatible units or further assistance is required, please contact RCI.

Has consideration to above resolved/explained the incompatibility?

YES

NO

Check Patient History
Has patient been transfused in the last 6 weeks?

YES

NO

Transfusion Required?

NO

YES

Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.

YES

IAT XM compatible?

NO

Unexpected Incompatibility

When an IAT crossmatch is unexpectedly incompatible it is important to check:

- Units with a compatible ABO have been selected
- The correct patient sample has been selected
- Units are negative for all identified and historical clinically significant antibodies
- All additional antibodies have been excluded (consider other antibodies which may be masked by the presence of other antibodies)
- If the unit is DAT+

Unexpected IAT crossmatch incompatibility may be caused by low incidence antibodies; their corresponding antigens are not usually noted on antibody identification panels due to their low prevalence in the population (exceptions to this are Kp(a) and Lu(a)).
In most cases, selecting another unit for transfusion is sufficient. However, if there are multiple incompatible units or further assistance is required, please contact RCI.

Has consideration to above resolved/explained the incompatibility?

YES

NO

Check Patient History
Has patient been transfused in the last 6 weeks?

YES

NO

Transfusion Required?

NO

YES

Select red cells which are ABO compatible, D and K compatible, antigen negative for any clinically significant alloantibodies and in line with special requirements for this patient.

YES

IAT XM compatible?

NO

Unexpected Incompatibility

When an IAT crossmatch is unexpectedly incompatible it is important to check:

- Units with a compatible ABO have been selected
- The correct patient sample has been selected
- Units are negative for all identified and historical clinically significant antibodies
- All additional antibodies have been excluded (consider other antibodies which may be masked by the presence of other antibodies)
- If the unit is DAT+

Unexpected IAT crossmatch incompatibility may be caused by low incidence antibodies; their corresponding antigens are not usually noted on antibody identification panels due to their low prevalence in the population (exceptions to this are Kp(a) and Lu(a)).
In most cases, selecting another unit for transfusion is sufficient. However, if there are multiple incompatible units or further assistance is required, please contact RCI.

Has consideration to above resolved/explained the incompatibility?

YES

NO

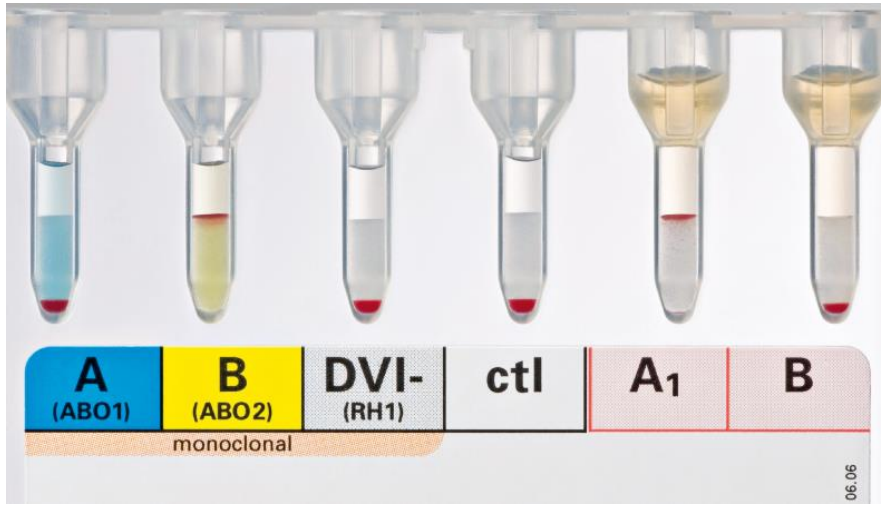
Input Result on LIMS

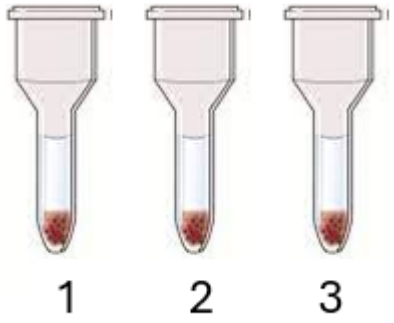
END

Hope that wasn’t Too Much of something!

Case 5

- 90-year-old female
- Group & Screen
- No blood requested
- “On Dara”
- Extended phenotype results available on LIMS and Sp-ICE
- Known pan-reactive antibody due to monoclonal antibody therapy
- No alloantibodies
- DTT panel performed by RCI 2 weeks ago
- Never been transfused

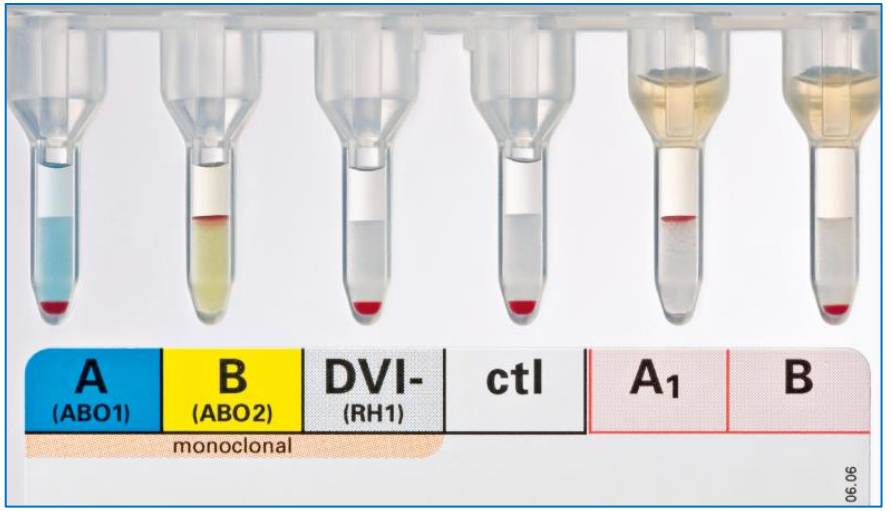


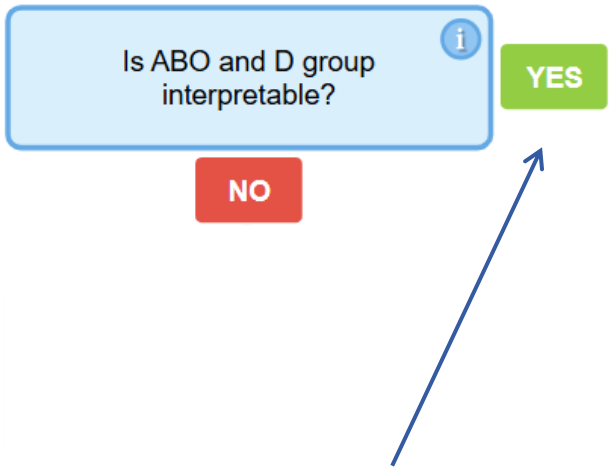


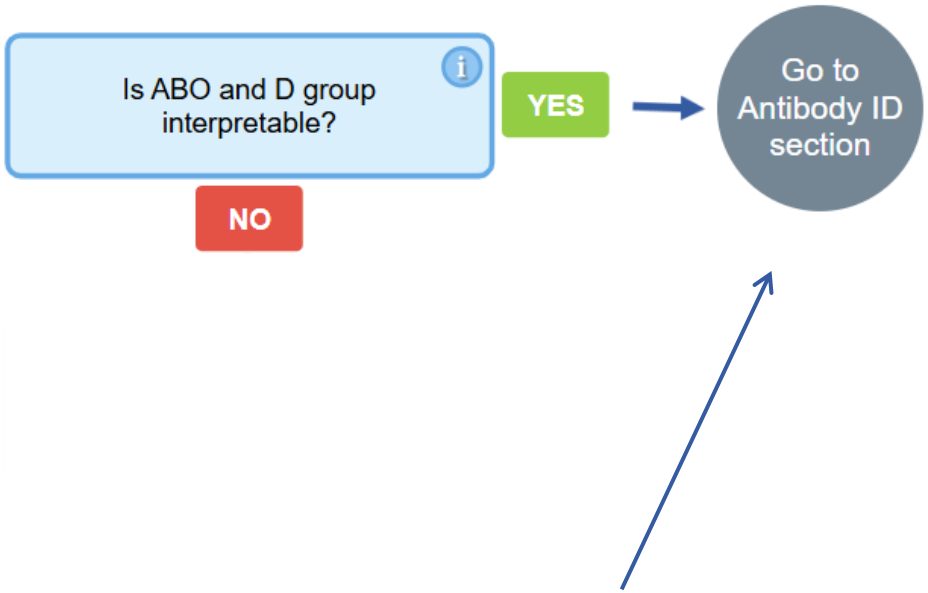
Patient group & screen results

Yes, the ABO and D group is interpretable

The forward and reverse ABO group match in accordance with Landsteiner's law and the D group shows strong positive reactions




Is ABO and D group interpretable?
YES
NO


Is ABO and D group interpretable?
YES
NO
Go to Antibody ID section

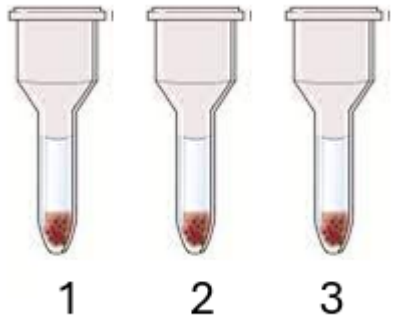
Is antibody screen positive?

YES

NO

Yes, the antibody screen is positive

Positive result obtained by IAT

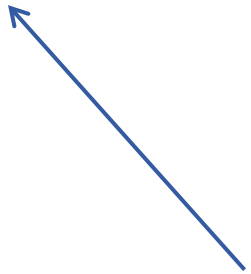


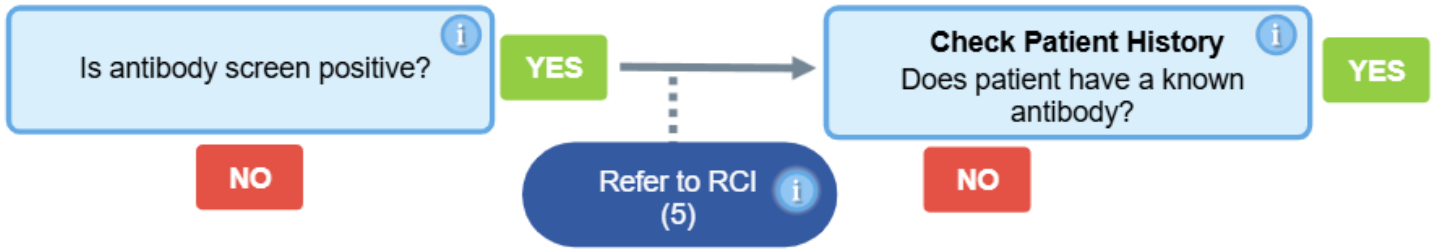
Cell	Rh	D	C	E	c	e	M	N	S	s	P1	K	k	Kp^a	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b	Other	IAT
1	**$R_1^wR_1$**	+	+	0	0	+	0	+	+	0	**0**	**0**	**+**	**0**	**0**	**+**	**0**	**+**	**0**	**+**		1
2	**R_2R_2**	+	0	+	+	0	+	0	0	+	**0**	**0**	**+**	**0**	**+**	**0**	**+**	**0**	**+**	0		1
3	**rr**	0	0	0	+	+	+	0	+	0	**4**	**+**	**0**	**0**	**0**	**+**	**+**	**0**	**+**	**0**		1

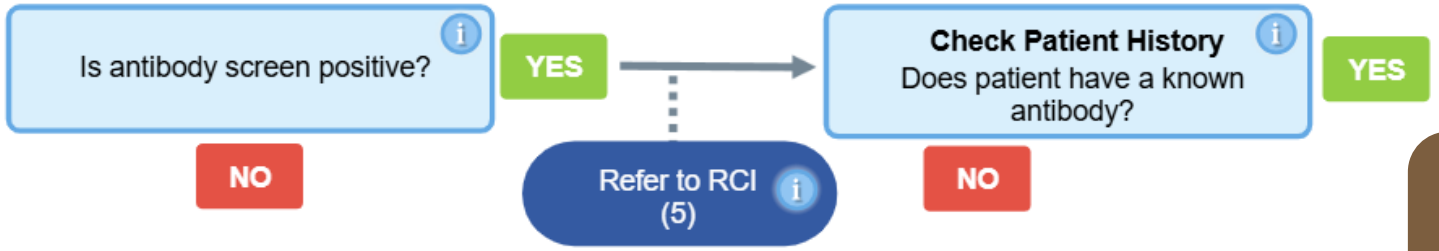
Is antibody screen positive?

YES

NO




Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO



90-year-old female

Group & Screen

No blood requested

“On Dara”

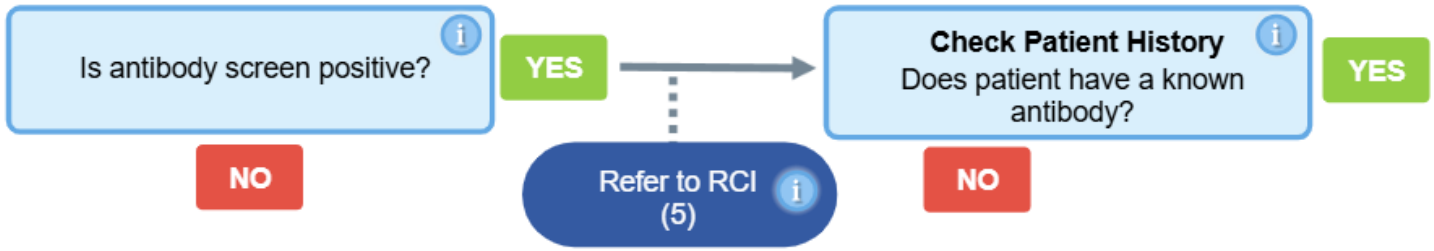
Extended phenotype results available on LIMS and Sp-ICE

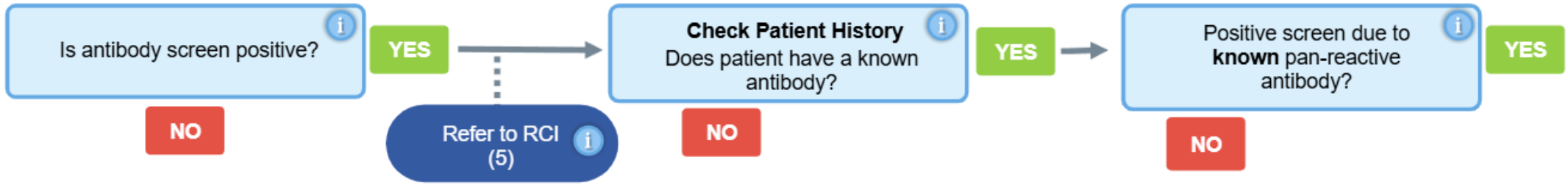
Known pan-reactive antibody due to monoclonal antibody therapy

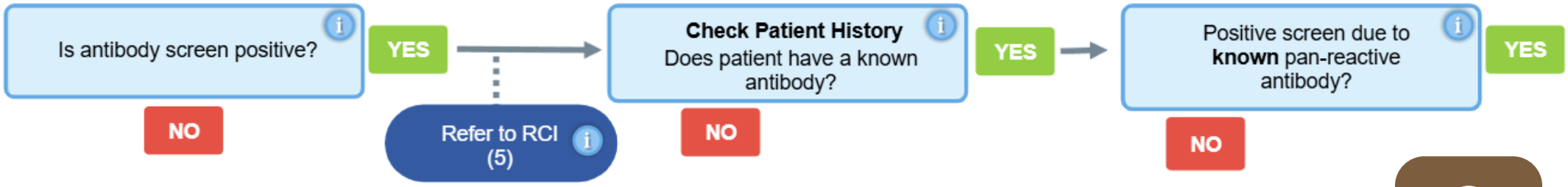
No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO



90-year-old female

Group & Screen

No blood requested

“On Dara”

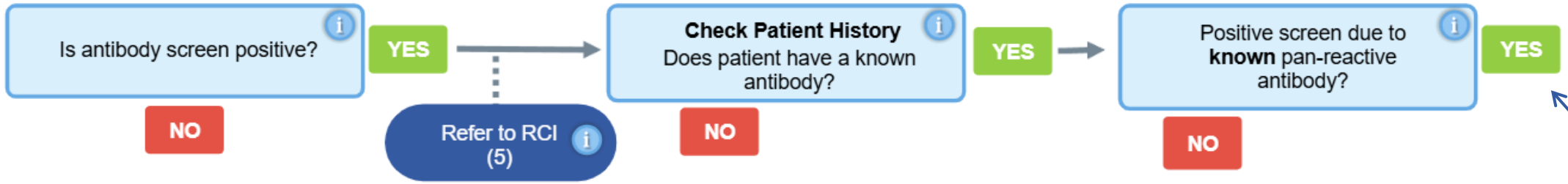
Extended phenotype results available on LIMS and Sp-ICE

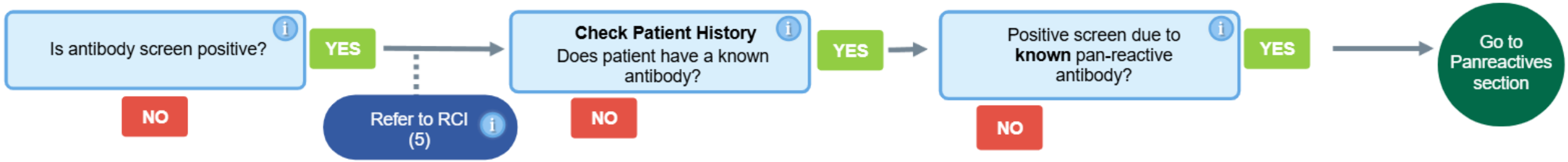
Known pan-reactive antibody due to monoclonal antibody therapy

No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO


Is antibody screen positive?
YES
NO
Refer to RCI (5)
Check Patient History
Does patient have a known antibody?
YES
NO
Positive screen due to known pan-reactive antibody?
YES
NO
Go to Panreactives section

Is patient receiving McAb therapy?

NO

YES

Is patient receiving McAb therapy?

YES

Click to learn more

Is patient receiving McAb therapy?

Monoclonal Antibody (McAb) therapy, such as anti-CD38 or anti-CD47 can interfere with ABO grouping and antibody panels. The effect can persist for up to 6 months following treatment. It is important to check patient history and their diagnosis for evidence of this therapy.

Anti-CD38 is usually used to treat myeloma patients, whilst anti-CD47 is usually used for acute myeloid leukaemia patients.

Commercial names for anti-CD38 include Daratumumab, Darzalex and Isatuximab.

Commercial names for anti-CD47 include Sarclisa.

For further information on managing patients on monoclonal antibody therapies, click here.

Is patient receiving McAb therapy?

NO

YES

90-year-old female

Group & Screen

No blood requested

“On Dara”

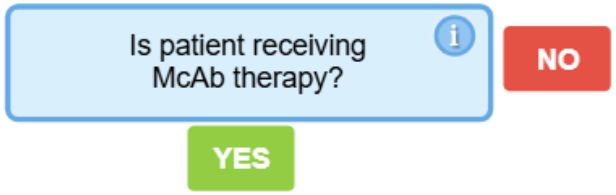
Extended phenotype results available on LIMS and Sp-ICE

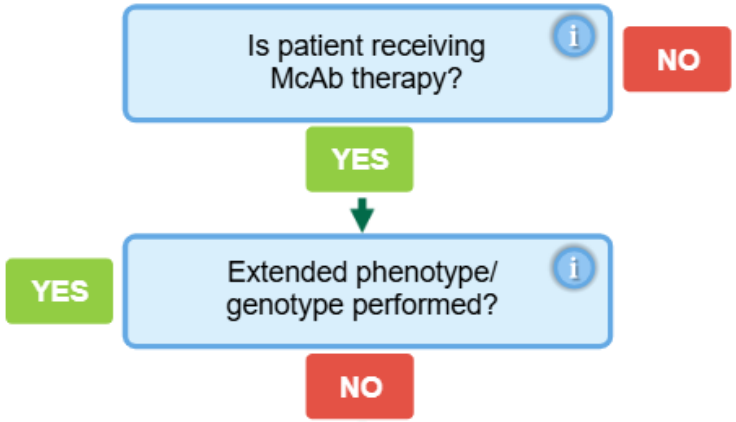
Known pan-reactive antibody due to monoclonal antibody therapy

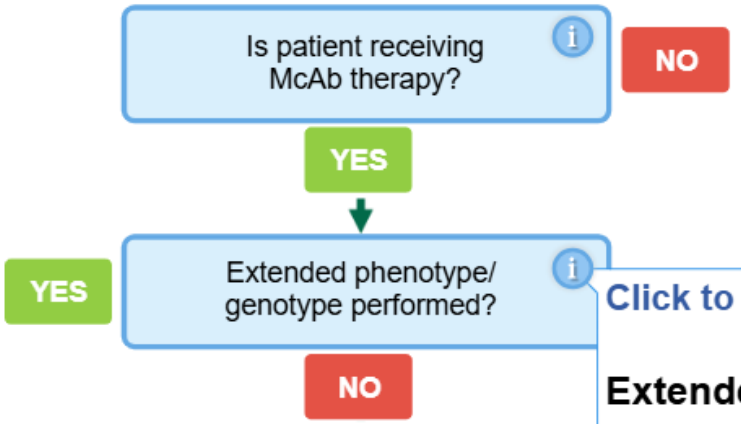
No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is patient receiving McAb therapy?
NO
YES

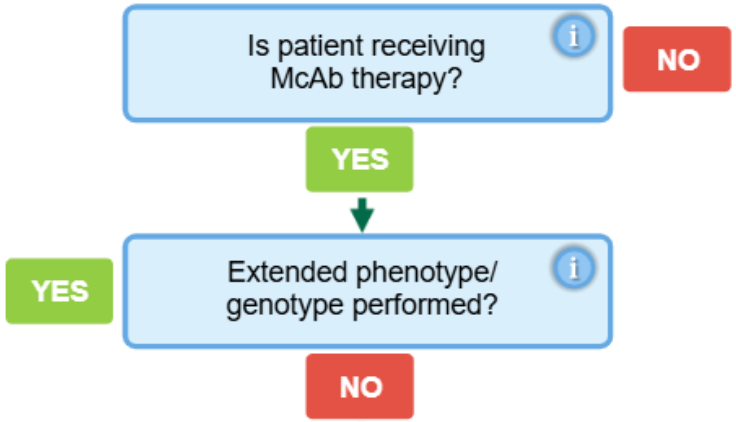

Is patient receiving McAb therapy?
NO
YES
YES
Extended phenotype/ genotype performed?
NO



Click to learn more

Extended phenotype/genotype performed?

Prior to commencing a drug known to interefere with pre-transfusion testing, BSH guidelines recommend establishing the patients ABO, Rh CcDEe, MNSs, Kk, Jk^a, Jk^b, Fy^a and Fy^b groups because it will be difficult to do so afterwards. This will help inform the choice of red cells, although matching for all these antigens may not be desirable or achievable. Red cells should be matched for Rh and K as well as for any alloantibodies.



90-year-old female

Group & Screen

No blood requested

“On Dara”

Extended phenotype results available on LIMS and Sp-ICE

Known pan-reactive antibody due to monoclonal antibody therapy

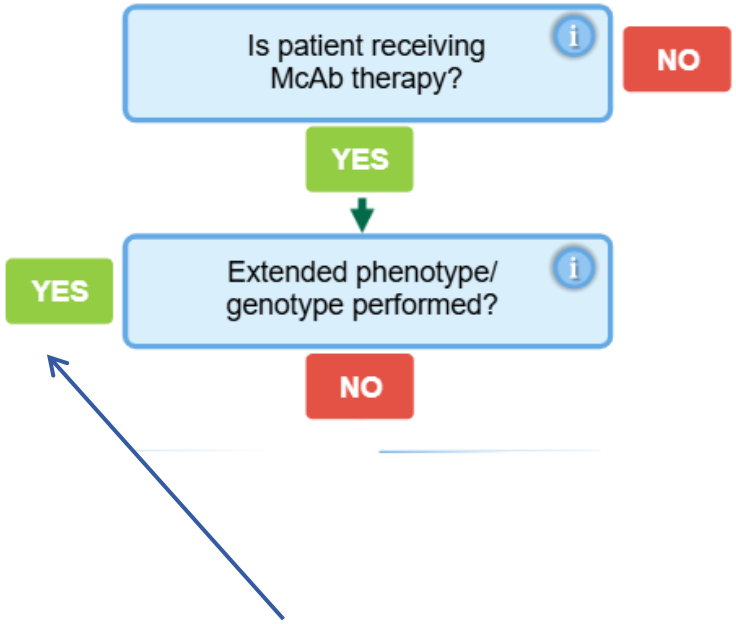
No alloantibodies

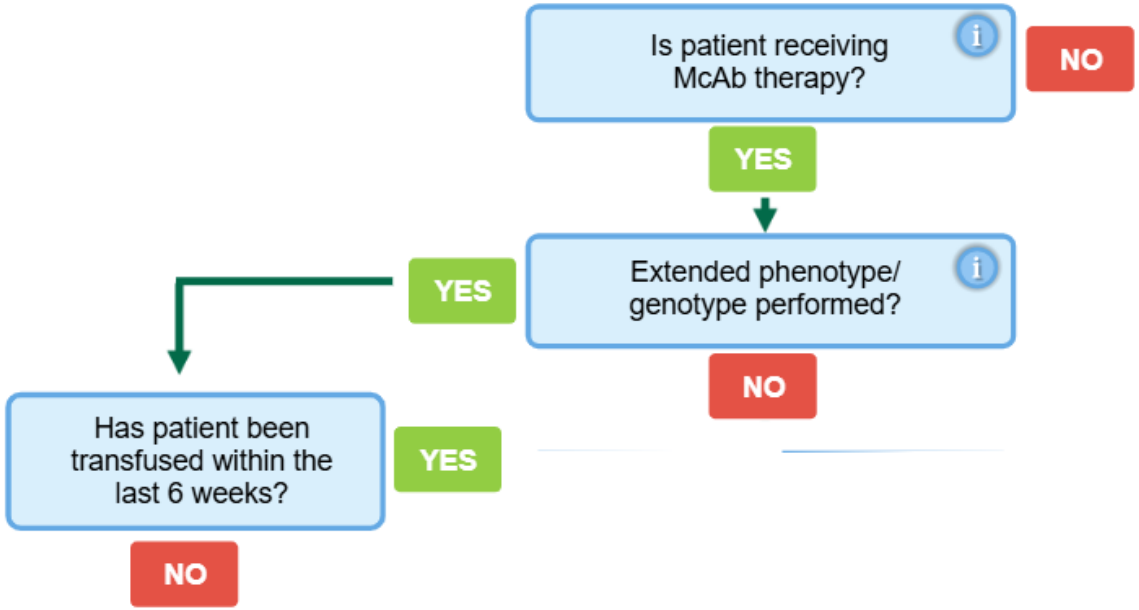
DTT panel performed by RCI 2 weeks ago

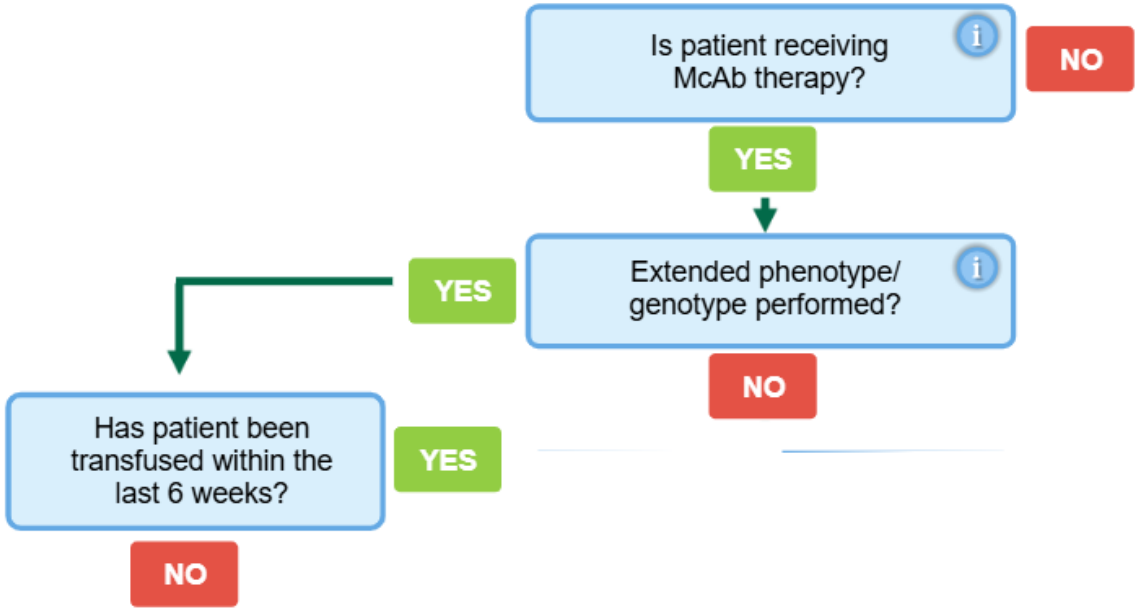
Never been transfused

Extended phenotype

D	C	E	c	e	M	N	S	s	K	k	Le^a	Le^b	Fy^a	Fy^b	Jk^a	Jk^b
+	+	-	+	+	-	+	+	+	-	+	+	+	+	+	+	-


Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO


Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO



90-year-old female

Group & Screen

No blood requested

“On Dara”

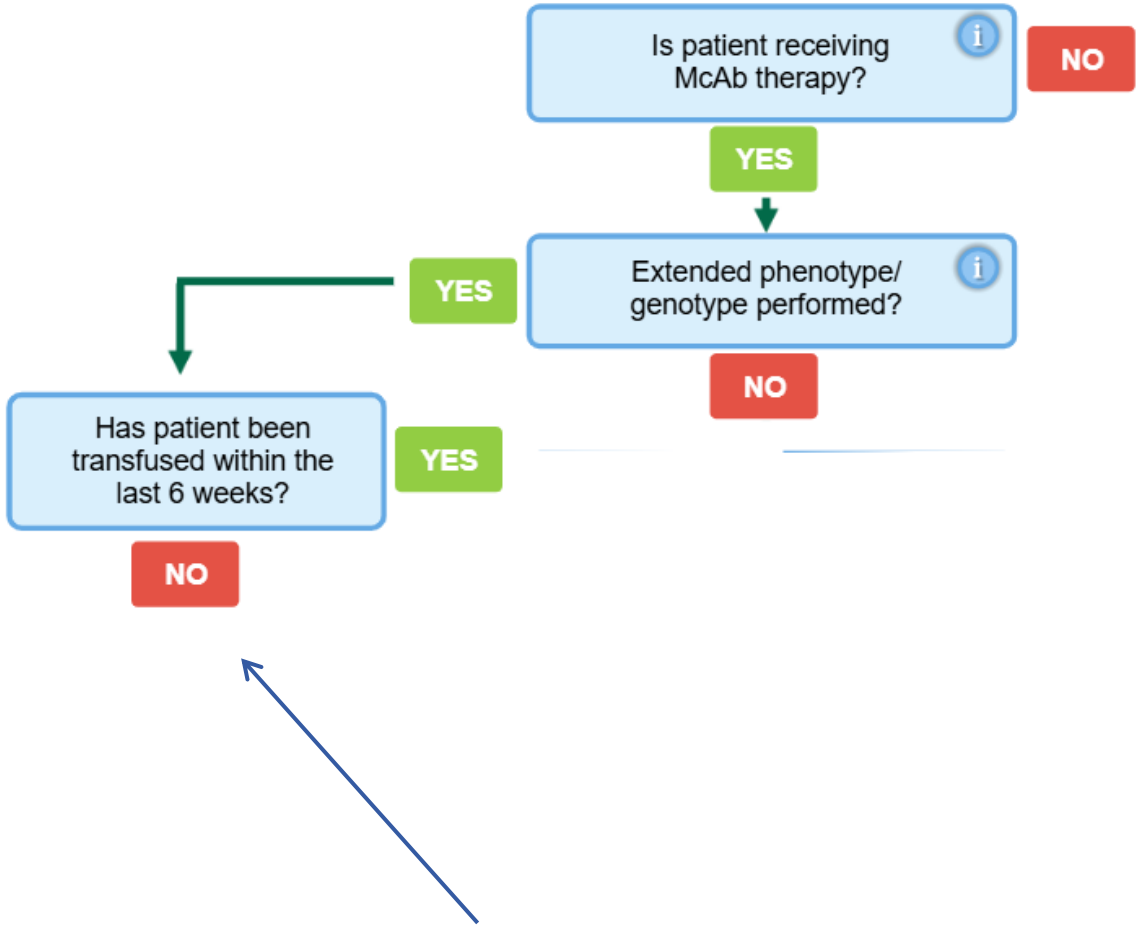
Extended phenotype results available on LIMS and Sp-ICE

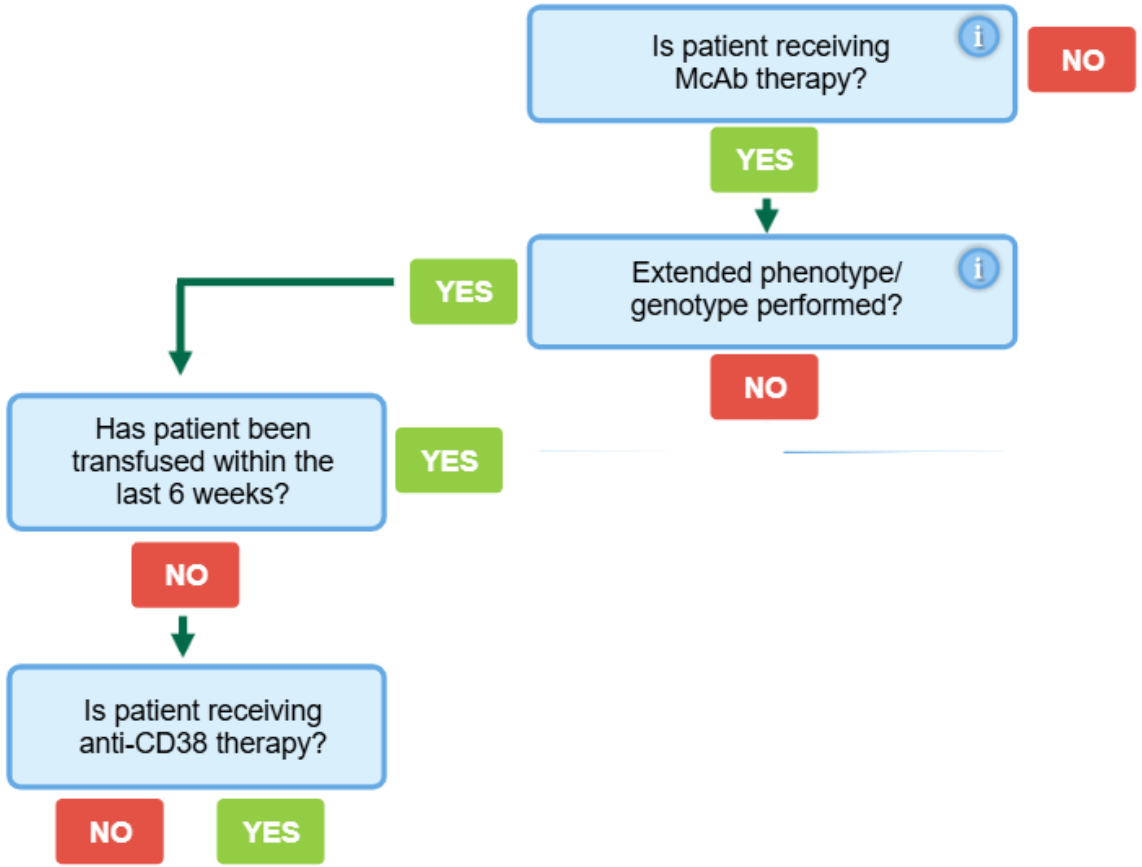
Known pan-reactive antibody due to monoclonal antibody therapy

No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO



90-year-old female

Group & Screen

No blood requested

“On Dara”

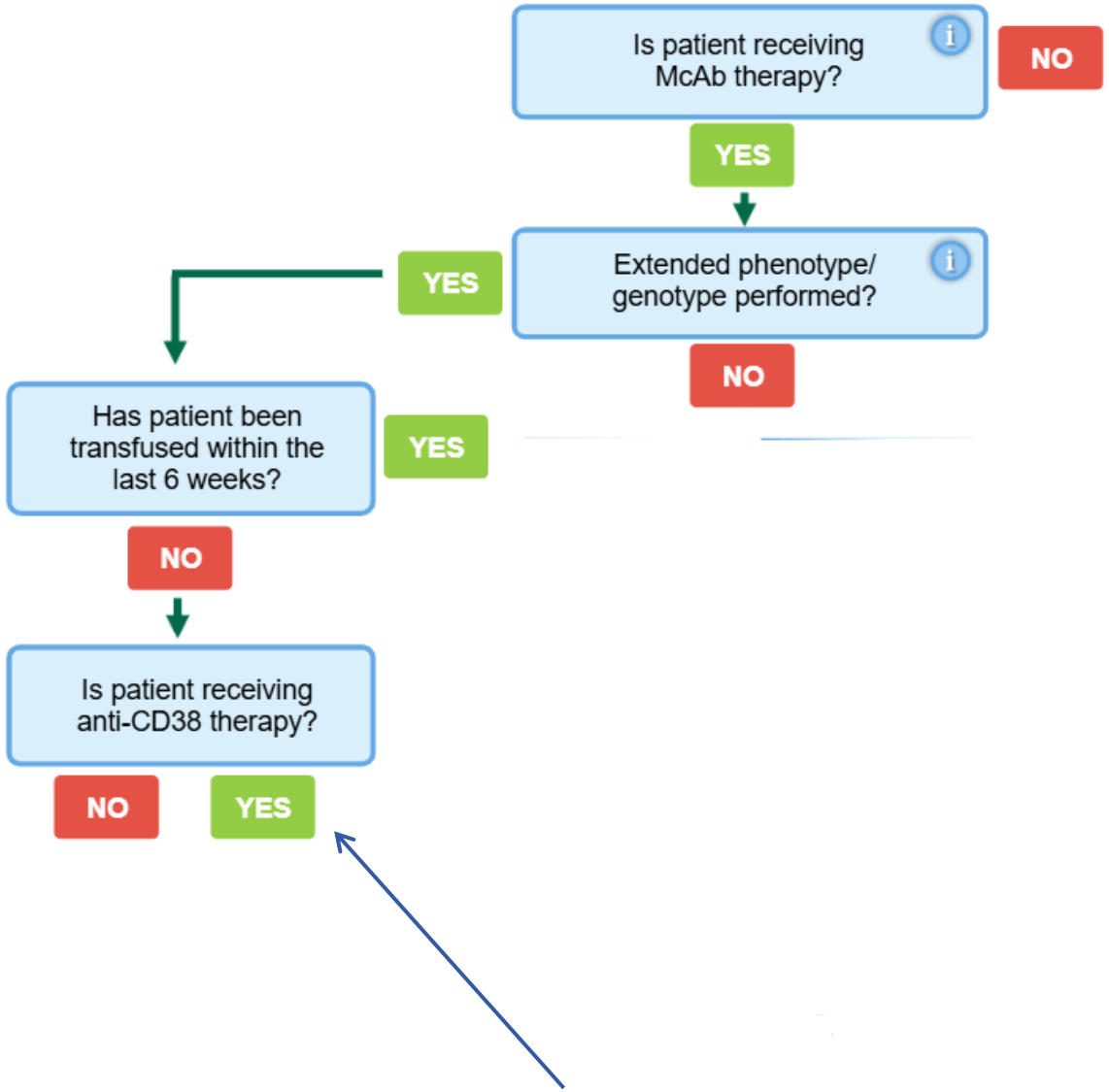
Extended phenotype results available on LIMS and Sp-ICE

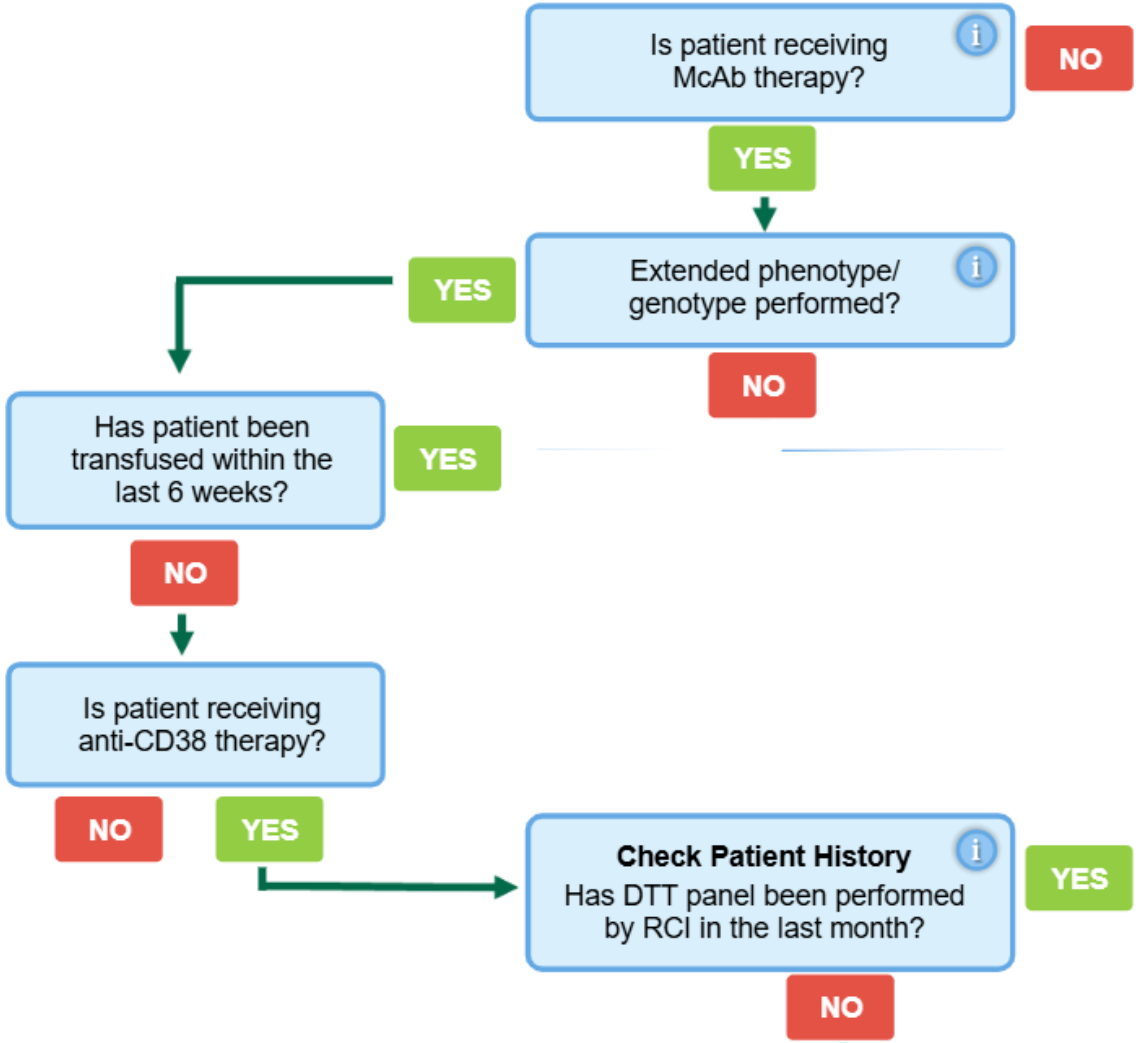
Known pan-reactive antibody due to monoclonal antibody therapy

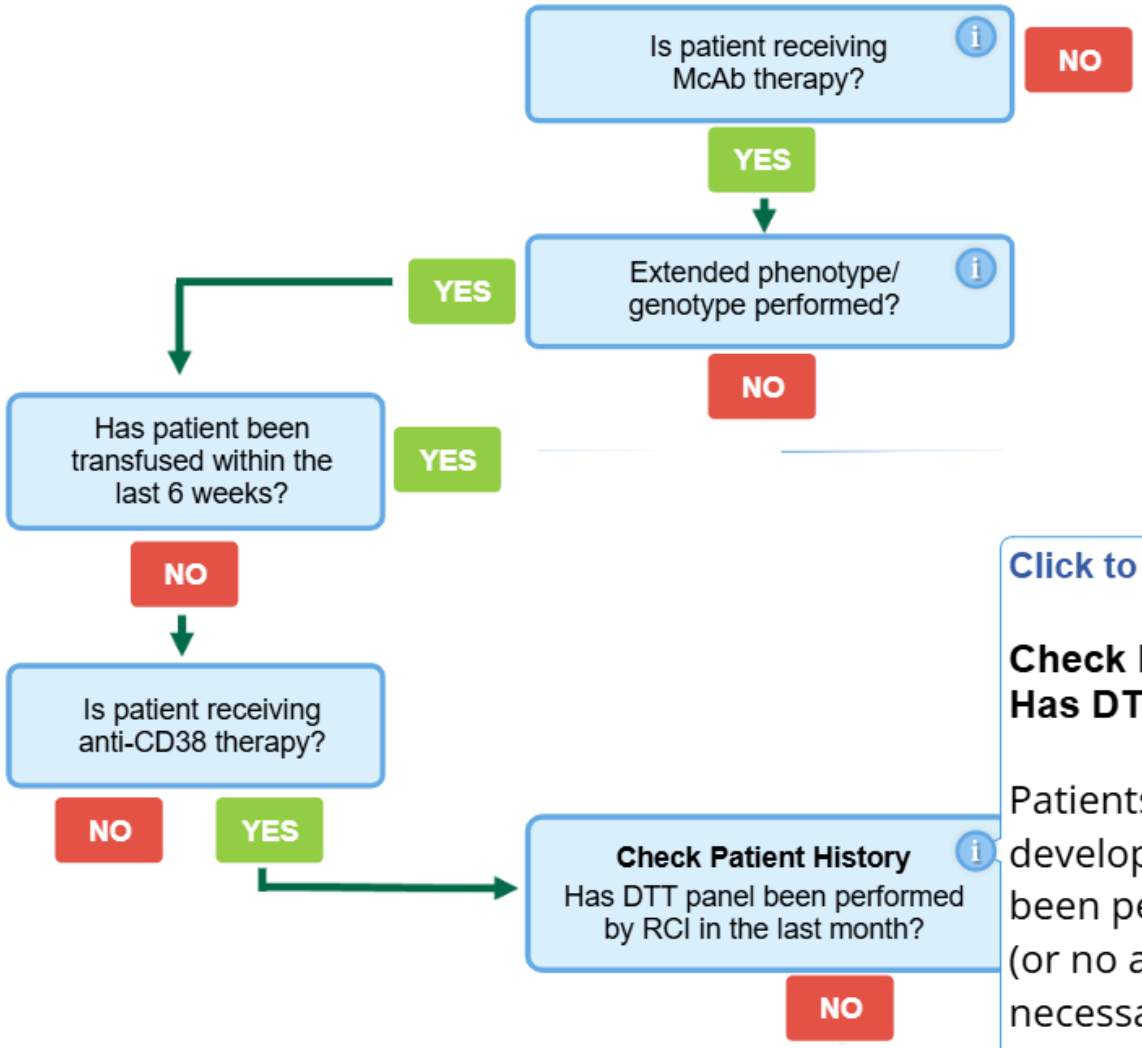
No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO
Is patient receiving anti-CD38 therapy?
NO
YES

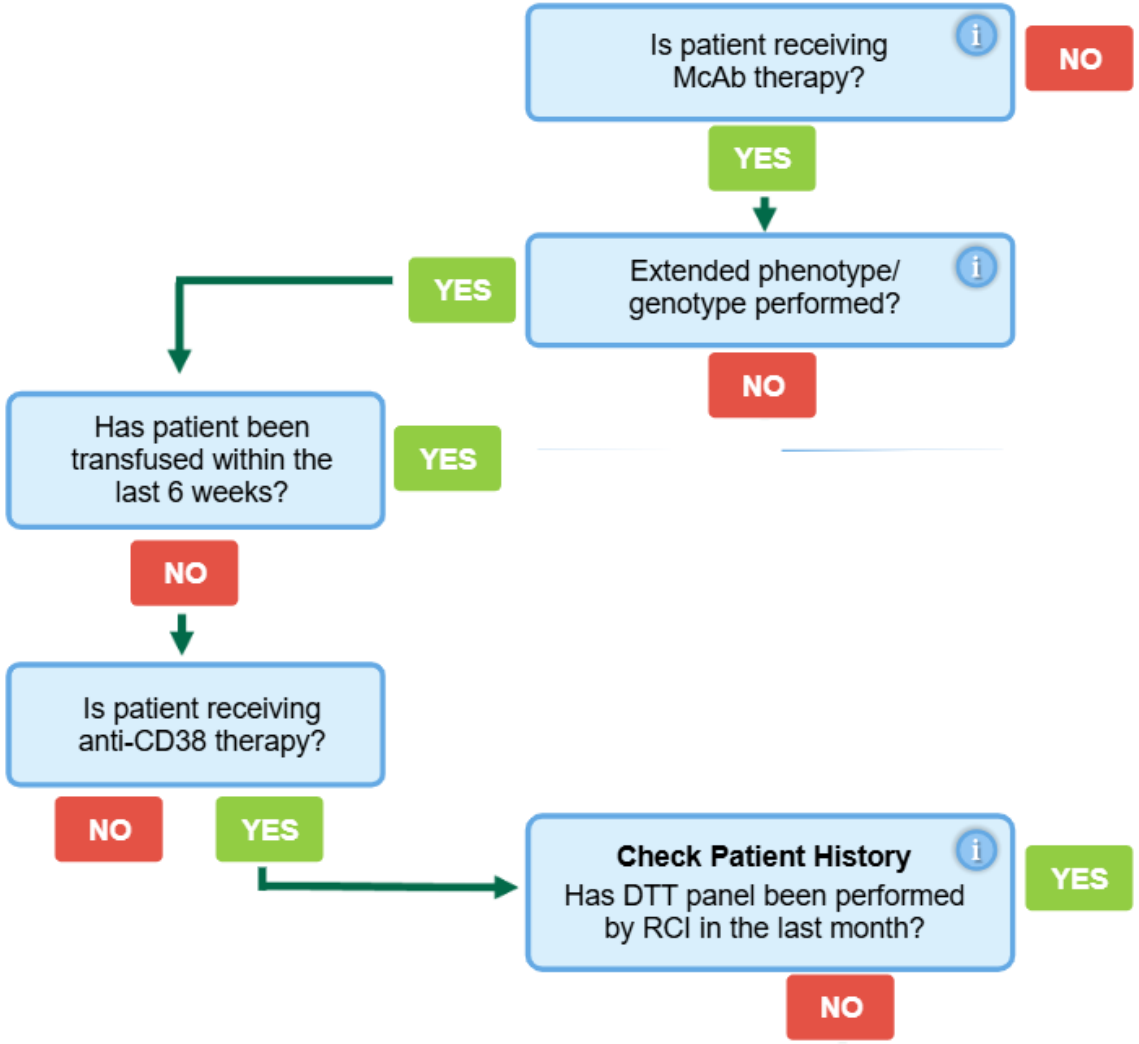

Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO
Is patient receiving anti-CD38 therapy?
NO
YES
Check Patient History
Has DTT panel been performed by RCI in the last month?
YES
NO



Click to learn more

Check Patient History
Has DTT panel been performed by RCI in last month?

Patients receiving monoclonal antibody therapy are unlikely to develop alloantibodies. If a Dithiothreitol (DTT) treated panel has been performed by RCI in the last month and found to be negative (or no additional antibodies have been produced), it is not necessary to refer to RCI for additional exclusion prior to transfusion. However, please ensure a valid sample is used for transfusion crossmatching.



90-year-old female

Group & Screen

No blood requested

“On Dara”

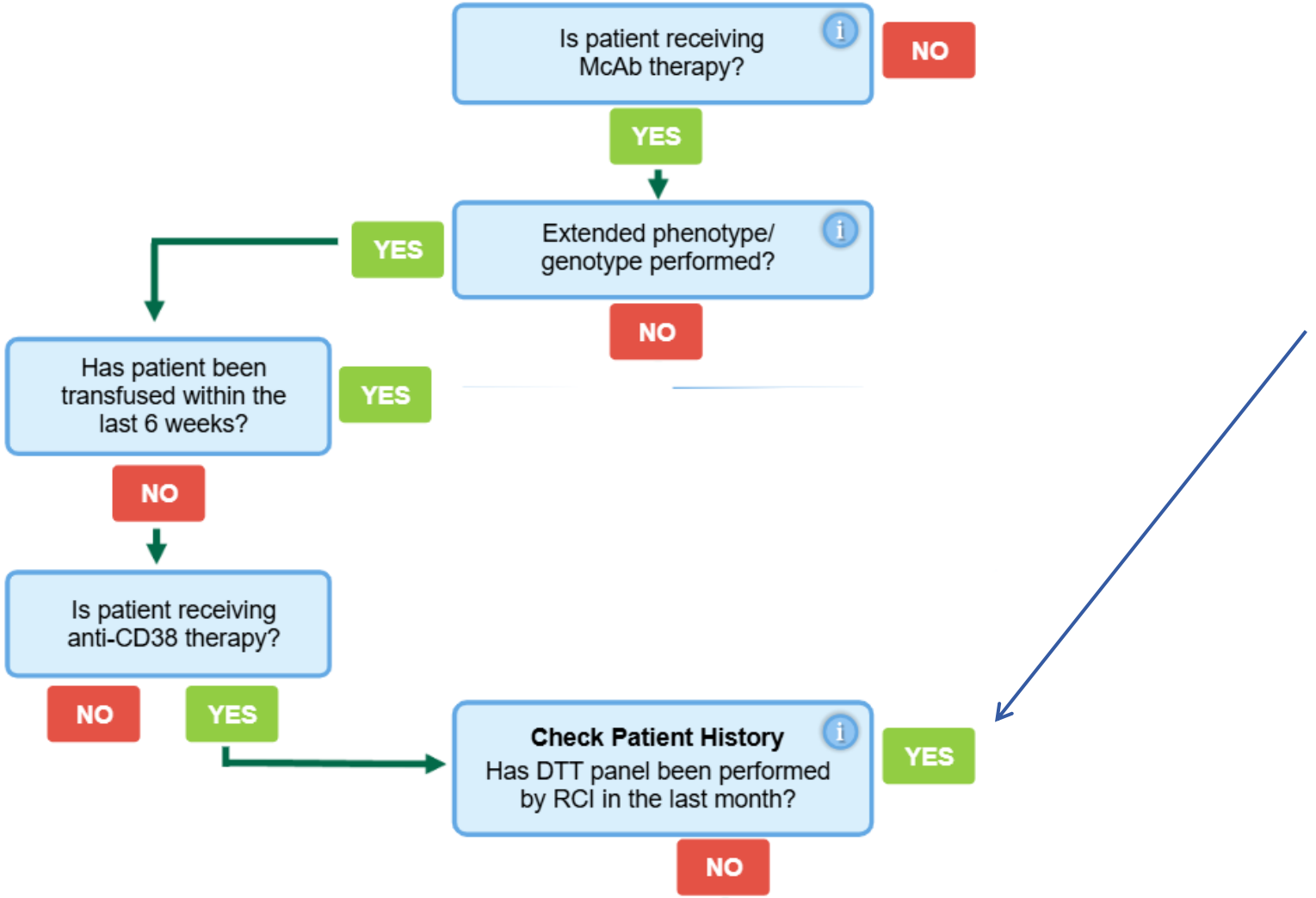
Extended phenotype results available on LIMS and Sp-ICE

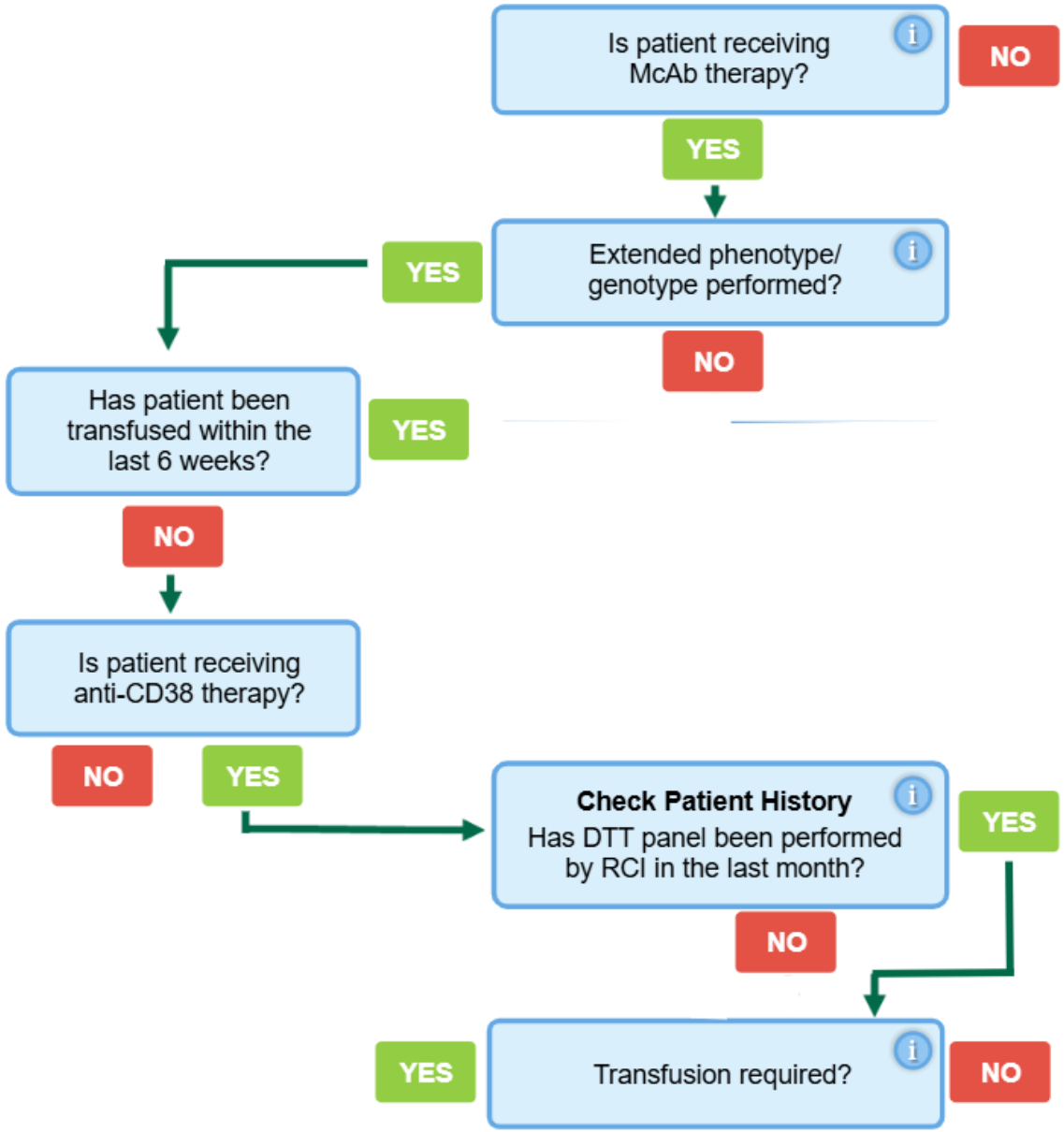
Known pan-reactive antibody due to monoclonal antibody therapy

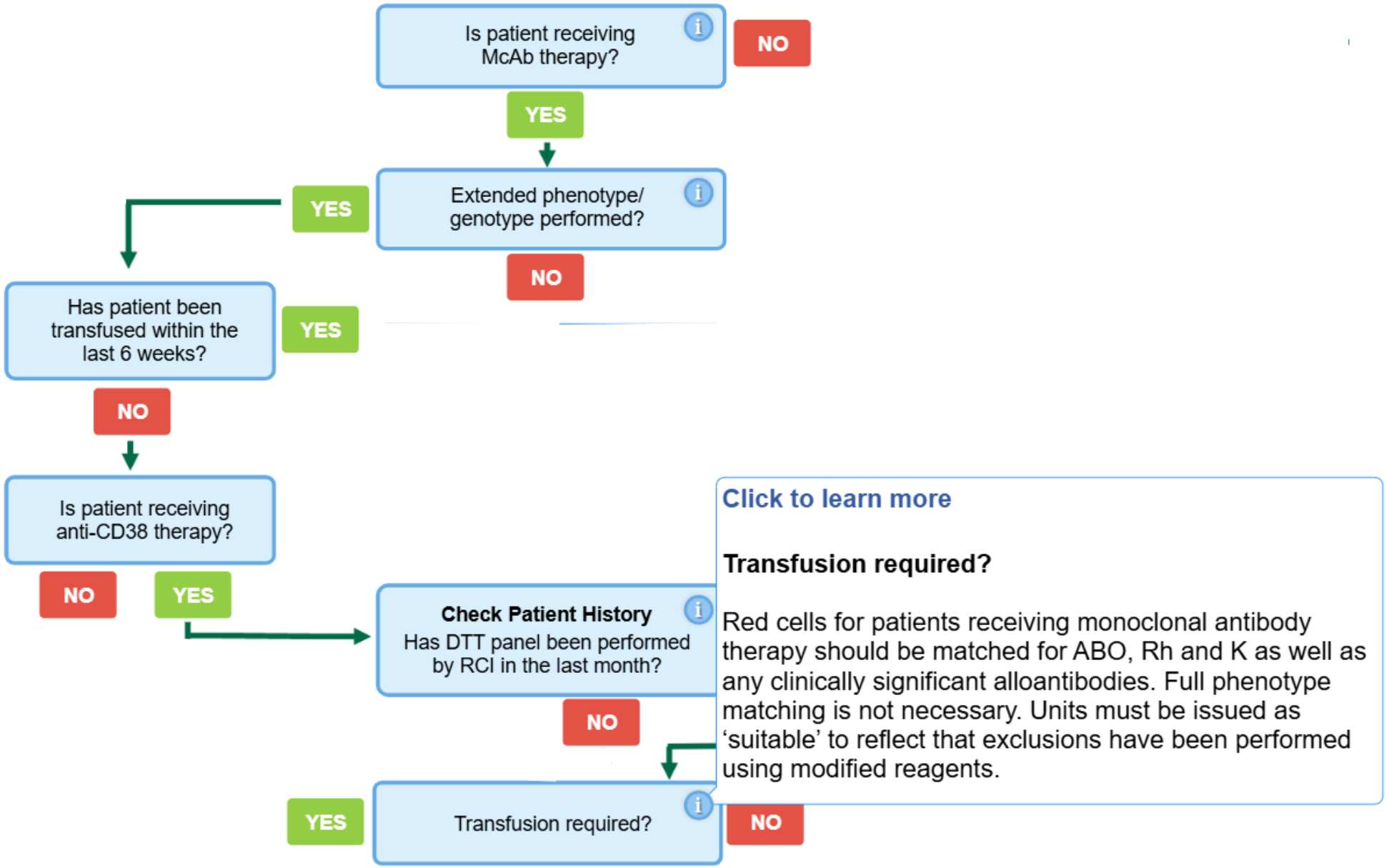
No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO
Is patient receiving anti-CD38 therapy?
NO
YES
Check Patient History
Has DTT panel been performed by RCI in the last month?
YES
NO

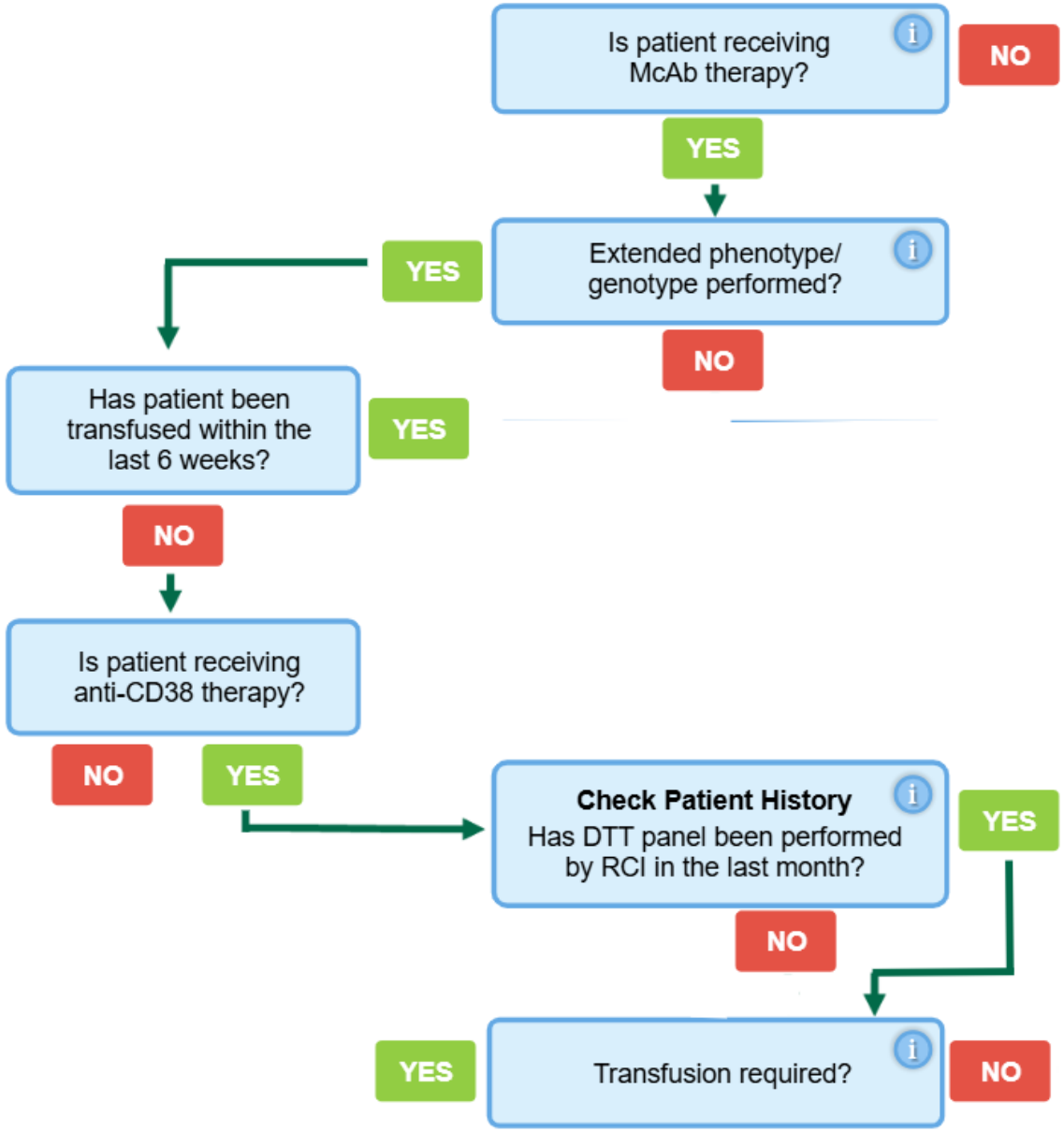

Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO
Is patient receiving anti-CD38 therapy?
NO
YES
Check Patient History
Has DTT panel been performed by RCI in the last month?
YES
NO
Transfusion required?
YES
NO



Click to learn more

Transfusion required?

Red cells for patients receiving monoclonal antibody therapy should be matched for ABO, Rh and K as well as any clinically significant alloantibodies. Full phenotype matching is not necessary. Units must be issued as 'suitable' to reflect that exclusions have been performed using modified reagents.



90-year-old female

Group & Screen

No blood requested

"On Dara"

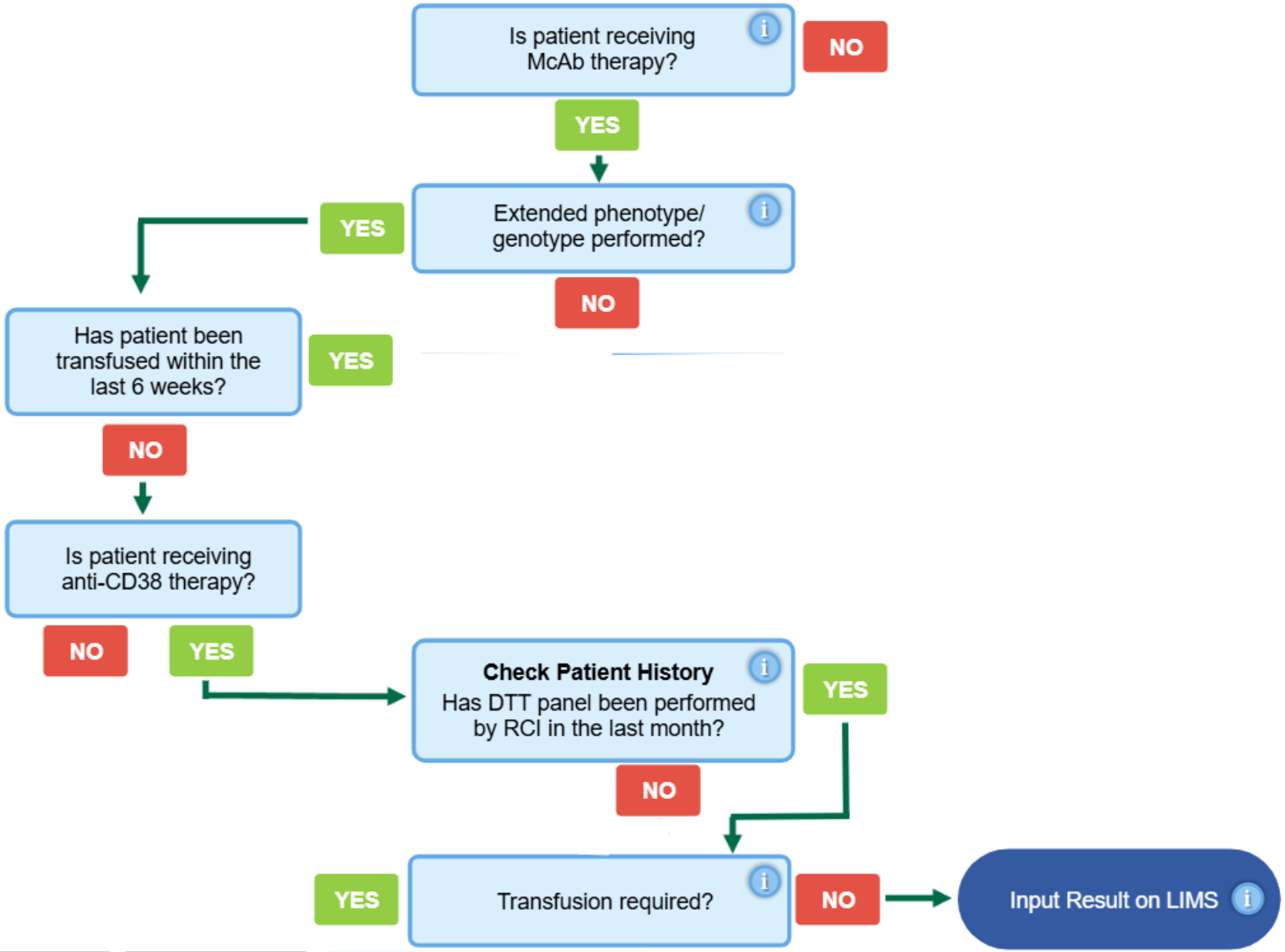
Extended phenotype results available on LIMS and Sp-ICE

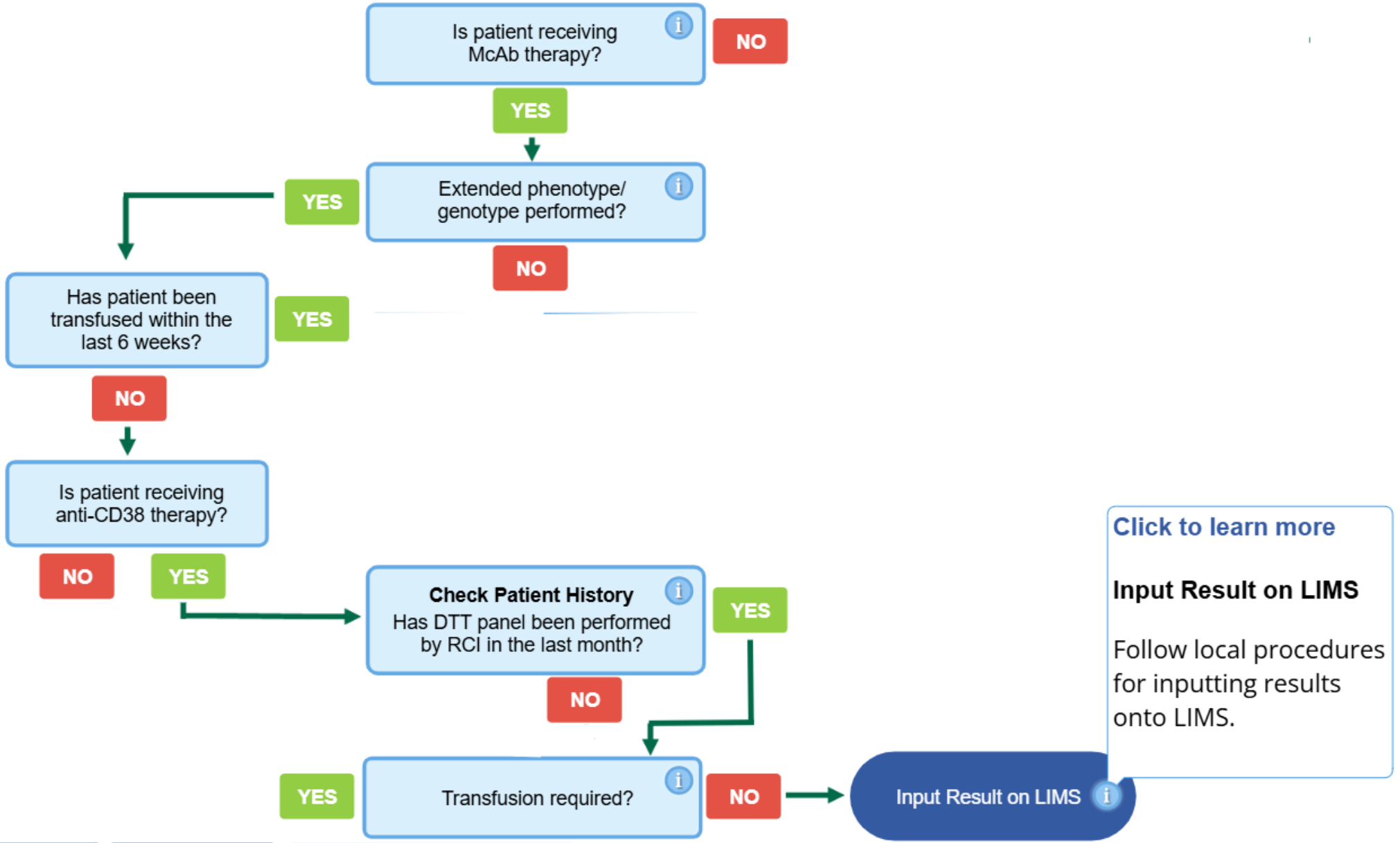
Known pan-reactive antibody due to monoclonal antibody therapy

No alloantibodies

DTT panel performed by RCI 2 weeks ago

Never been transfused


Is patient receiving McAb therapy?
NO
YES
Extended phenotype/ genotype performed?
YES
NO
Has patient been transfused within the last 6 weeks?
YES
NO
Is patient receiving anti-CD38 therapy?
NO
YES
Check Patient History
Has DTT panel been performed by RCI in the last month?
YES
NO
YES
Transfusion required?
NO
Input Result on LIMS



Click to learn more

Input Result on LIMS

Follow local procedures for inputting results onto LIMS.

Stop right now!
Thank you very much

Acknowledgements

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Transfusion 2024, RCI, HCS, DDTS and NHSBT Digital Learning Team

Blood Transfusion

Education and Discussion Group

Meeting 55

NHS Blood and Transplant

#BTEDG

Thank you for listening!

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Antibody identification

[Session 3/3] The weird and the wonderful

DATE: 9th SEPT 2025 / 12:30PM

Registration

To register for this webinar, please click on the link HERE or scan the QR code on the right using your mobile device. A confirmation email with joining instructions will be sent to you automatically after successful registration.

Learning objectives [Session 3/3]

1. Introduction to high incidence antibodies
2. Advanced techniques: alloadsorption, neutralisation, DTT treatment
3. Inhibition studies and their role in antibody ID
4. Case examples

Recording and certificate available for CPD purposes.

Speaker:

Helen Thom

Biomedical scientist and RCI Development Lead – Transfusion 2024

NHSBT

For any questions, please contact Anas Nasir: anas@onlycells.co.uk