

Wk14 Exit ticket: Heart transplant allocation debate

Your goal: Debate how donor hearts should be allocated among competing patients.

One product: Written ranking of transplant allocation criteria with a one-sentence justification for the top criterion and acknowledgment of one tradeoff.

Question: How should a fictional committee justify allocation priorities while respecting equal worth and uncertain outcomes?

Start the work

1. Read short profiles of patients awaiting a transplant.
2. Form groups representing the transplant committee.
3. List two criteria you would use to allocate the heart.
4. Defend your ranking against one opposing group.
5. Write your final ranking with one justification.

If access is unavailable, save a dated copy and tell the teacher. Use the supplied practice for the written reasoning. Ask for the group-discussion directions and assigned PLTW task before doing them.

Words you will use

allocation

Distributing a limited resource among competing needs.

donor

A person who provides an organ for transplantation.

recipient

A person who receives an organ.

transplant

Moving an organ or tissue into a recipient to replace or support a body part.

rejection

An immune response that attacks a transplanted organ.

immune system

The body's network of defenses against threats.

blood supply

Blood delivered to a tissue or organ.

oxygen

A gas carried in blood that cells use to release energy from nutrients.

nutrient

A substance the body needs for energy, growth or maintenance.

candidate

A person being considered or listed for transplantation.

eligibility

Meeting the requirements to be considered for a process.

compatibility

Whether donor and recipient characteristics permit a suitable match.

blood type

A classification based on features of red blood cells and related antibodies.

offer

An opportunity for a transplant team to evaluate a donor organ for a candidate.

OPTN

Organ Procurement and Transplantation Network, the US network connecting donation and transplant organizations.

clinical

Related to the assessment or care of patients.

urgency

How promptly a need requires attention.

status

An assigned category; actual adult heart urgency statuses use detailed medical criteria.

likelihood of success

The estimated chance of a specified outcome; here, surgical survival.

prognosis

A prediction of the likely course or outcome of a health condition.

probability

A measure of how likely an outcome is.

percent

A proportion expressed per hundred.

criterion

A rule or standard used to judge or rank options; criteria is the plural.

priority

A choice given greater importance or earlier consideration.

ranking

An ordered list from first to last.

tradeoff

A benefit gained while accepting a competing cost or disadvantage.

equity

Fair treatment that considers relevant needs and barriers.

scarcity

Having less of a resource than the amount needed or wanted.

ethical judgment

A reasoned choice about what should be done.

evidence

Information used to support or challenge a claim.

assumption

A condition accepted for reasoning without establishing it as an observed fact.

fictional

Invented for the exercise rather than describing real people or events.

counterargument

A reason that challenges a position.

rebuttal

A response that addresses a counterargument.

bias

A systematic preference that can distort a judgment.

social worth

A judgment about someone's value to society; it is excluded from this exercise.

weight

A multiplier expressing a factor's importance in a scoring rule.

gate

A required condition that a high score on other factors cannot replace.

tie rule

A stated method for ordering options with equal priority or totals.

validated

Checked with suitable evidence for its intended use.

uncertainty

What remains unknown or not firmly established.

E1: transplant and blood-supply facts

MedlinePlus explains that an organ transplant replaces a failed organ with one from a donor. The immune system can attack the new organ; this response is called rejection.

MedlinePlus describes heart transplantation as replacing a damaged or diseased heart with a heart from a donor who has died. Surgery carries risks and requires continuing medical care.

NHLBI explains that the heart pumps blood through the body. Blood brings oxygen and nutrients to organs. Inadequate pumping can leave organs without enough blood to work normally.

This blood-supply fact explains why restoring heart function matters. It does not tell us which of four people is more worthy or guarantee any surgical result.

E2: actual US allocation has several separate decisions

HRSA describes evaluation by a transplant hospital before a candidate is placed on the waiting list. Being listed and receiving an organ offer are separate steps.

An OPTN matching program sets the order of organ offers using organ-specific rules. The transplant team then reviews the donor information and accepts or declines an offer.

HRSA's adult heart FAQ describes medical urgency, donor blood-type compatibility and distance between hospitals. Within a match level, longer waiting gives priority among candidates with the same urgency status.

The six adult urgency statuses use medical and treatment criteria. The three classroom urgency labels in S1 are not those statuses. Children have a separate system.

Heart matching is not a classroom vote or a universal tissue-match score. Clinical suitability and an organ offer do not guarantee surgery or survival.

HRSA's general matching page excludes financial and celebrity status from matching factors. Today's exercise also excludes family role, popularity and judgments about a person's social worth.

These are public explanations, not every provision of current policy. Real teams need detailed clinical information; no patient decision can be made from this lesson.

S1: four fictional profiles and one discussion heart

Every profile and value below is invented. There is no real hospital, donor or patient. The exercise asks how competing priorities can change a ranking.

For discussion only, assume all four fictional adults have cleared the same eligibility and compatibility checks for this one fictional heart. That assumption is not a clinical finding.

Profile P: urgency high; likelihood of surgical success lower; waiting time 2 months.

Profile Q: urgency medium; likelihood of surgical success higher; waiting time 4 months.

Profile R: urgency medium; likelihood of surgical success medium; waiting time 18 months.

Profile S: urgency lower; likelihood of surgical success higher; waiting time 24 months.

Urgency means relative need for prompt treatment in this exercise. Likelihood labels are stipulated assumptions about surgical survival, not calculated or validated predictions. No exact probability is supplied for these profiles.

The invented pattern does not establish that greater urgency causes lower success. All four people have equal worth. No age, occupation, family role or personal history may be added.

Choose two criteria from urgency, likelihood of success and waiting time. Rank those criteria first, explain which takes priority, and use the second to break ties.

Then rank all four profiles from first to fourth using that same rule. If both criteria tie, state a transparent tie rule. Keep the criteria ranking and patient ranking separately labeled.

Write one sentence justifying each chosen criterion and one genuine tradeoff. Explain which profile bears that tradeoff. More than one consistent ethical ranking is defensible.

R1: three sides with two points each

Urgency, point 1: prioritizing the most immediate need can protect someone whose need cannot wait. In S1 this favors P, given the assigned urgency label.

Urgency, point 2: need can be a fair priority independent of how long someone has waited. Its tradeoff is that a person with a longer wait or higher assumed success may be delayed.

Likelihood of success, point 1: seeking a better chance of successful surgery can support using a scarce opportunity effectively. In S1 this favors Q and S under the invented assumptions.

Likelihood of success, point 2: applying the same outcome criterion to everyone can make reasoning consistent. Its tradeoff is disadvantaging someone with greater need; uncertain estimates can also be wrong.

Waiting time, point 1: recognizing time already spent waiting gives a clear queue-based reason. In S1 this favors S, then R, based on the fictional months.

Waiting time, point 2: waiting can resolve otherwise similar cases without judging social worth. Its tradeoff is that a recent arrival may have a more urgent need.

For the absence route, record two points for each of the three sides. Identify a benefit and a concern within each pair, then apply your own two chosen priorities to all four profiles.

Group route: act as a fictional committee, prepare two criteria and present your top priority. Record an actual opposing group's criterion and the precise value difference.

Solo route: select the strongest opposing statement in T1 and write a labeled rehearsal. You can use the supplied written reasoning alone; ask how to join any required group discussion.

T1: supplied challenges and a separate self-check

Challenge to an urgency-first rule: Your rule puts P ahead of S despite S's longer wait and higher assumed success. Why should immediate need outweigh those two concerns?

Challenge to a success-first rule: Your rule may delay P even though P has the greatest immediate need. What protects those with high need when estimates favor others?

Challenge to a waiting-first rule: Your rule puts S ahead of P even though P has higher urgency. Why should time in the queue outweigh that immediate need?

Reply by fairly stating the concern, naming your value priority, using an S1 fact and acknowledging a cost of your choice. Do not invent a peer statement or a clinical outcome.

Separate hypothetical self-check: A is the sickest and is assigned a 20 percent chance of surviving surgery; B is less sick and is assigned 80 percent. Give one defensible argument for each.

The two percentages are given solely for ethical practice. They are not validated individual predictions and do not describe P, Q, R or S. No actual outcome or time to death is known.

Check: for each choice, name the value it puts first and the cost it accepts, using the R1 urgency and likelihood-of-success points. Neither estimate guarantees survival or death.

Neither person's life is wasted or worth less. These two invented numbers do not establish a general link between urgency and surgical survival.

If you explained only one choice, add the strongest reason for the other. Name the tradeoff instead of declaring a guaranteed winner.

W1: optional weighted-rule extension

This is an original classroom calculation, not the OPTN algorithm. Eligibility and compatibility are gates: if either is not met, a high score cannot cancel that problem.

All S1 profiles pass those gates by assumption. For this optional model, urgency points are high 3, medium 2, lower 1. Success points are higher 3, medium 2, lower 1.

Waiting points are 1 for 0 through 6 months, 2 for more than 6 through 18 months, and 3 for more than 18 months.

A trial rule uses urgency weight 3, success weight 2 and waiting weight 1. Total equals 3 times urgency points plus 2 times success points plus waiting points.

P: 3 times 3 plus 2 times 1 plus 1 equals 12. Q: 3 times 2 plus 2 times 3 plus 1 equals 13.

R: 3 times 2 plus 2 times 2 plus 2 equals 12. S: 3 times 1 plus 2 times 3 plus 3 equals 12.

Tie rule: use longer waiting time among equal totals. The resulting order is Q, S, R, P. The most urgent profile is last, an effect that an urgency-first view could challenge.

Propose your own nonnegative weights for urgency, success and waiting, and state the compatibility gate. Calculate all four totals, rank them, and name one unfair effect from a stated ethical perspective.

The chosen bins and weights express values; correct arithmetic cannot prove fairness. Compare your rule with the trial rule and explain one difference.

C1: warmups, recovery and finish check

Warmup 1: imagine one heart and three fictional patients. Name one fact you would want for each before choosing. Use P, Q and R as placeholders; do not supply personal medical histories.

Warmup 2: is waiting longest or being sickest a fairer first priority? Pick one and give a reason. You may revise that position after reading.

Prerequisite: in an invented clinic line or team selection, name one fair rule and one unfair rule. Explain what makes the rule consistent or biased.

Recovery: compare only P and Q using one criterion. Write a choice and a tradeoff. Then add the second criterion, R and S to complete the required four-profile and criteria rankings.

On-grade finish: defend all four placements using two named criteria. Name where your values differ from an opposing group or the supplied solo challenge.

Exit check: label the criteria ranking separately from the profile ranking. Include a sentence per criterion and a tradeoff. Defend your criteria using one E1 MedlinePlus Organ Transplantation fact about transplantation or rejection, plus the E1 NHLBI blood-supply connection.

Lost your place? Return to S1, write your two priorities, and check each profile against them. Then answer T1 and revise the exit ticket.

Reflect: identify one assumption you kept visible and one sentence you revised to avoid claiming a guaranteed medical result. Share the ranking when a group is available.

P1: Work and submission checks

Today's original debate does not complete Activity 3.1.1 Go With the Flow. Its introduction addresses cardiovascular structures, functions and blood paths through heart, lungs and body.

Its navigation lists Get Your Blood Pumping, Give Your Maniken a Heart, Vital Vessels, Building the Oxygen Superhighway and Conclusion, plus a separate Conclusion Questions page.

Ask the teacher which portion of 3.1.1 to begin today before claiming official completion.

Follow the actual official prompts and models, and keep notes, conclusions and a note or screenshot from that work for the tracker. A viewing badge and this exit ticket are not proof of that work.

The April 19-23 week also requires the heart model, EKG work, cardiovascular calculations and data check, plus Friday tracker and evidence through 3.1.3. Those are separate tasks.

The teacher-posted data or model packet and selected circulatory-system or EKG resources remain needed for the weekly absence route. This ethical exercise does not replace them.

April 20 is a catch-up day. Follow the current class schedule. Do not assume prior Lesson 2.3 work is complete.

No homework is due before this class. Before April 21, complete the separate 25-minute Heart structure and cycle preparation in Lab Notebooks when assigned materials are available.

On April 23, plan 25 minutes to submit tracker and evidence in Class Records. Today's exit ticket goes in Exit Tickets. Keep the requested evidence and ask the teacher if a location is unclear.

Submit Wk14 Exit ticket: Heart transplant allocation debate through your enrolled section. Section 1292: <https://app.schoology.com/assignment/8544590021> . Section 6792: <https://app.schoology.com/assignment/8544590045> .

Confirm the live assignment. If access or a required group discussion is unavailable, save the dated practice response and ask the teacher for what you need. Do not mark a draft as submitted.

M1: a different ranking problem, library repair slots

A fictional library can repair one printer first. Printer J is fully broken and has waited 2 days; printer K has a minor fault and has waited 8 days. Both repairs are possible.

Criteria ranking: first, severity of lost service; second, waiting time. Justification: restore unavailable service before a minor fault, then use waiting to order equal needs.

Item ranking: J first, K second. Tradeoff: K waits longer despite its earlier request. An opposing waiting-first rule would put K first.

Rebuttal: the longer wait matters, but this rule gives priority to a complete loss of service. I would retain the waiting criterion for ties and acknowledge the delay to K.

This model demonstrates separate criteria and item rankings, a consistent rule and an honest tradeoff. Printer repair supplies no transplant facts, patient values or clinical predictions.

Try the decision

Which statement can guide this classroom ranking without overstating the supplied evidence?

- State a priority, apply it to all four fictional profiles and acknowledge both the tradeoff and uncertainty.
- Use the highest classroom total as proof of the real US heart recipient and guaranteed survival.
- Rank people by family role because the provided source proves some lives have more social worth.

Explain your choice using the reading. Discuss it or say it to yourself. This practice does not add another submission.

Your 80-minute flow

0–8 minutes	Complete short warmups; read S1 and name one missing real-world fact.
8–22 minutes	Read the source cards and M1; prepare two criteria and the six R1 points if absent.
22–40 minutes	Rank all four profiles and defend the top criterion with a MedlinePlus transplant/rejection fact, the NHLBI blood-supply connection and your reason.
40–55 minutes	Answer an actual opposing group or a labeled T1 solo challenge.
55–70 minutes	Write individual criteria and profile rankings, sentence per criterion and tradeoff.
70–80 minutes	Answer T1, reflect and share; extend with W1 when ready and save/submit through P1.

Your response record

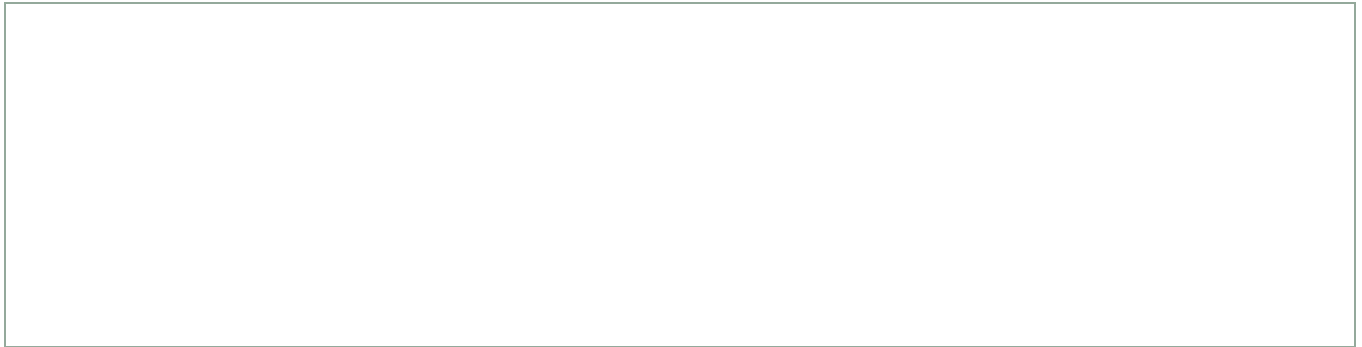
Use these labels on paper or in your document. The space below also works when this page is printed.

Read profiles and establish the boundary

Complete both C1 warmups and the fair/unfair prerequisite. Read E1, E2 and all four S1 profiles; label the source facts and fictional assumptions.

Use coded profiles only. Real matching has clinical gates and offer decisions that the exercise assumes rather than performs.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

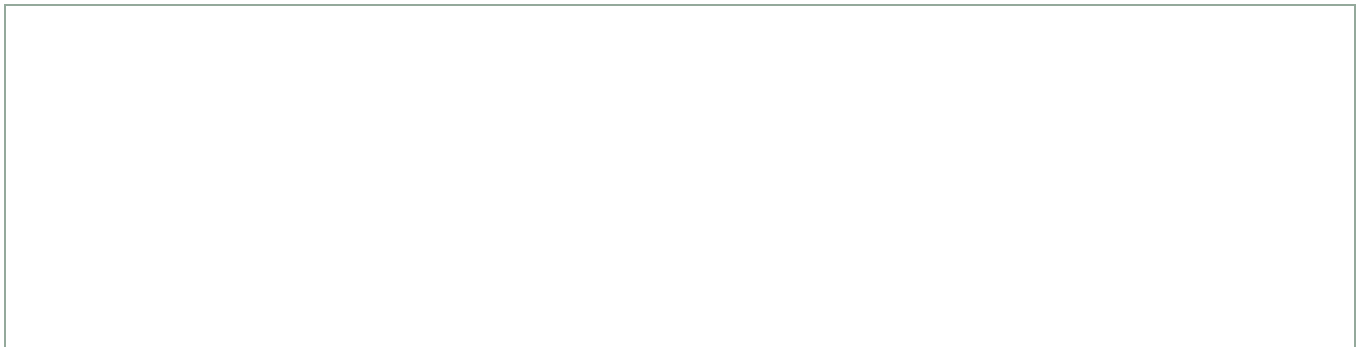


Prepare two allocation criteria

Rank two chosen criteria and prepare a sentence justifying each. Record two points for each R1 side for the absence route, including each side's concern.

There are three sides: urgency, likelihood of success and waiting time. Use the supplied six points; do not collapse them into one preferred position.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

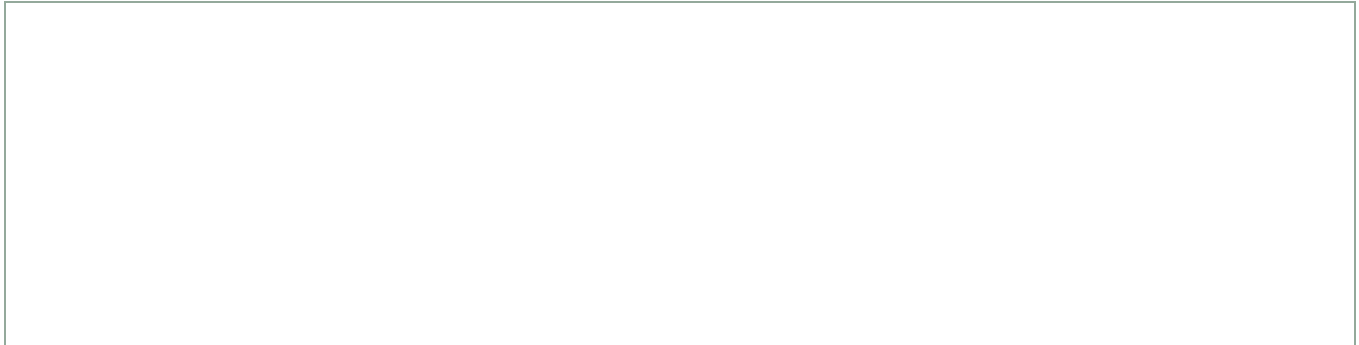


Apply priorities to all four profiles

Rank P, Q, R and S using your two criteria. Present the top criterion with a reason. Use one E1 MedlinePlus Organ Transplantation fact about transplantation or rejection to defend your criteria, alongside the E1 NHLBI blood-supply connection.

M1 shows the difference between criteria and item rankings. Name a tie rule if needed. Physiology explains the stakes but does not choose the only fair priority.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Defend against an opposing criterion

Record an actual opposing group's criterion and where your values differ. Respond with an S1 fact, your reason and an acknowledged tradeoff. Alone, use T1 and label the response a solo rehearsal.

Choose the strongest supplied challenge to your position. Use the solo route for written practice. Ask the teacher how to join any required group exchange.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

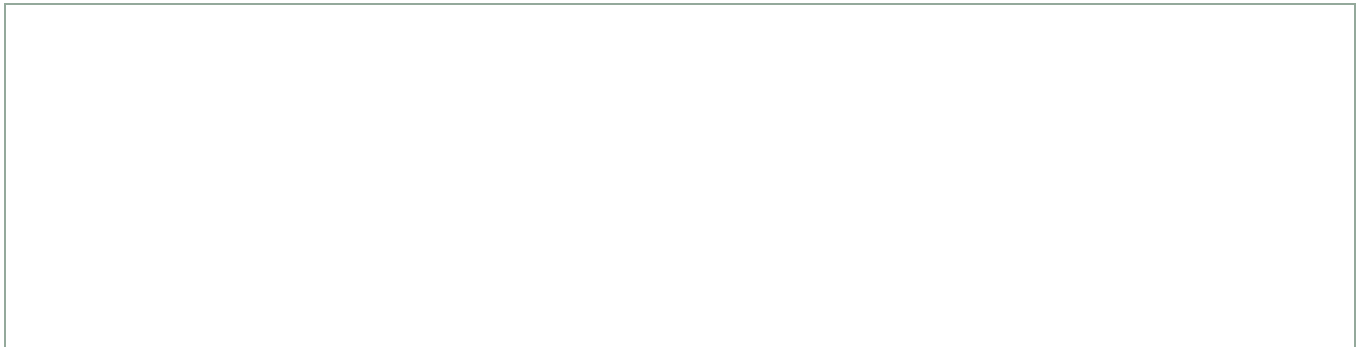


Write the final ranking and justification

Write the final criteria ranking with one sentence per criterion, a justification for the top criterion and one tradeoff. Include the separate all-four profile ranking. Defend your criteria with one E1 MedlinePlus Organ Transplantation fact about transplantation or rejection and the E1 NHLBI blood-supply connection.

The exact exit product ranks criteria. The supporting on-grade record also ranks all four profiles. Different consistent priorities are acceptable.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Check, reflect and record completion honestly

Answer both sides of T1's separate 20/80 self-check. Complete the C1 reflection and share when possible. Attempt W1 when ready; keep the P1 official-work and submission steps separate.

The two probabilities are hypothetical and do not describe the four profiles. Optional weights need all four calculations, a tie rule and an unfair effect from a named perspective.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Check your product

- Each student defends an allocation criterion.
- Groups acknowledge one tradeoff in their ranking.
- The response separately ranks criteria and all four fictional profiles with a consistent rule.
- Evidence, fictional assumptions and ethical judgments are distinguished.
- The response does not invent clinical outcomes, peer exchange or official completion.

Keep the limit: Original ethical simulation with invented profiles and scores. It cannot establish real patient prognosis, allocation decision, clinical eligibility, actual peer exchange, submitted work or PLTW completion.

Turn in your work

Submit the criteria-ranking exit ticket and supporting profile/debate notes to the confirmed enrolled section: 1292 <https://app.schoology.com/assignment/8544590021> or 6792 <https://app.schoology.com/assignment/8544590045> . Preserve actual official note or screenshot tracker evidence separately.

If access is unavailable, save a dated copy and tell the teacher. Use the supplied practice for the written reasoning. Ask for the group-discussion directions and assigned PLTW task before doing them.

[Section 1292: Wk14 Exit ticket: Heart transplant allocation debate](#)

[Section 6792: Wk14 Exit ticket: Heart transplant allocation debate](#)

Carry forward

State the priority behind a ranking, apply it consistently, and acknowledge the tradeoff without treating an estimate as a guaranteed outcome.

Use blood-flow and heart-function evidence in the next cardiopulmonary model and data work; keep actual assigned activities separate. How do blood flow and electrical timing relate in the heart model?

Sources and resources

[Open today's page](#)

MP-ORGAN · Organ Transplantation

MedlinePlus, National Library of Medicine

<https://medlineplus.gov/organtransplantation.html>

MP-HEART · Heart Transplantation

MedlinePlus, National Library of Medicine

<https://medlineplus.gov/hearttransplantation.html>

HRSA-HEART · Adult Heart Allocation System FAQs

HRSA / OPTN; reviewed December 2025, accessed September 12, 2026

<https://www.hrsa.gov/optn/patients/resources/heart/heart-allocation-faqs>

HRSA-MATCH · Donor Matching System

HRSA / OPTN; reviewed December 2025, accessed September 12, 2026

<https://www.hrsa.gov/optn/patients/organ-donation/donor-matching-system>

NHLBI-FLOW · How the Heart Works: The Heart

National Heart, Lung, and Blood Institute

<https://www.nhlbi.nih.gov/health/heart>