

# Hyperkalemia in Heart and Kidney Care

## Confirm, Respond, and Preserve Treatment

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60-minute design target; timed pilot pending. CME/CE credit has not been designated. This edition provides a noncredit completion record.

A high potassium result can trigger two opposite errors: delayed emergency care or unnecessary permanent loss of beneficial therapy. Three fictional women show how to recognize urgency, examine the evidence and make the next step happen.

This activity focuses on adult outpatient and transition decisions. It does not replace a local emergency treatment protocol. The cases feature women without claiming that the evidence establishes sex-specific treatment effects.

Read or listen to the complete case teaching, answer two decisions in each case, then finish six final questions and a brief evaluation. Short video recaps are optional.

## Required reading: recording clarification

Required reading for both routes: complete the full written teaching or full podcast adaptation, plus this note. Short recaps supplement the lesson and do not replace it; this corrects the broader wording near the end of the existing recording.

Both patiomer and sodium zirconium cyclosilicate labels advise avoiding use in severe constipation, bowel obstruction or impaction, including abnormal postoperative bowel motility. Review Margaret's bowel history for either option. This shared label caution supplements the recording. Sources: current US prescribing information, references 7 and 8.

## Learning objectives

Differentiate an uncertain potassium result from a presentation requiring urgent emergency assessment.

Select a cause-directed hyperkalemia strategy and interpret binder evidence without overstating clinical outcomes.

Construct a medication, laboratory and communication plan with patient-specific safety checks and accountable follow-up.

CASE 01 · CONFIRM & RESPOND

# The alert is red. What happens next?

Evelyn is at her kitchen island when the patient portal flags a potassium result. She feels well and assumes someone will call. The clinic sees a hemolysis flag. Between those two assumptions, an important result could go unreviewed.

| Case information | Details                                                                            |
|------------------|------------------------------------------------------------------------------------|
| Initial result   | Potassium 5.7 mmol/L; specimen reported hemolyzed                                  |
| Background       | CKD G3b; stable eGFR 38 mL/min/1.73 m <sup>2</sup> ; hypertension; taking losartan |
| At first contact | No new weakness, palpitations, chest discomfort or breathlessness                  |
| Your task        | Determine urgency, verify the result and close the communication loop              |

## Call the patient, not just the laboratory

Read the actual value, collection time, specimen comment and prior results. A high flag is a starting point for a decision. It does not tell you whether Evelyn is at home, has new symptoms, has acute kidney injury, or has already taken a medication that changes the risk. Contact her and document the clinical context while arranging the appropriate next step.

Evelyn describes her usual morning. Ask specifically about new weakness, palpitations, fainting, chest discomfort, breathlessness, vomiting, poor intake and reduced urine output. Review recent illness, medication changes, potassium supplements and nonprescription products. Absence of symptoms does not establish a safe potassium concentration. A clinically stable first conversation and an emergency presentation require different pathways.

Decide who owns the alert before ending the call. If you request repeat blood work, name the clinician or team who will receive and review it, the expected time, the backup if that person is unavailable, and what Evelyn should do if symptoms develop. A portal message without confirmed follow-through is an incomplete response.

Sources: [1]

## A hemolysis flag creates a question, not an answer

Collection or processing problems can increase measured potassium. Ask the laboratory about the specimen and arrange a promptly obtained, properly collected repeat using its recommended approach. Avoid assuming that the original value is either certainly true or certainly false. Review the trend and renal function at the same time.

Evelyn's stable presentation makes prompt reassessment feasible, but the repeat test is not an excuse for an open-ended delay. Local urgency protocols and the clinical presentation govern timing. If severe hyperkalemia is suspected or concerning symptoms appear, urgent evaluation and treatment must not wait for an ideal confirmatory specimen.

Pause and make the first decision below. Compare the information each option supplies with the information still missing. The useful response resolves uncertainty and assigns an action; it does not simply relabel the laboratory result.

Sources: [1]

## The case changes: update the plan immediately

Before the repeat result returns, Evelyn calls with new weakness. The laboratory reports a nonhemolyzed potassium of 6.6 mmol/L. Her creatinine is above baseline. This is a new clinical situation. The earlier stable phone call does not justify staying on the original outpatient pathway.

Arrange emergency assessment and monitored treatment through the appropriate local route. Do not ask a symptomatic patient to drive herself. Communicate the potassium value, specimen reliability, symptoms, kidney trend and current medicines to the receiving team. A normal-looking ECG, if already obtained, does not reliably exclude serious hyperkalemia.

UK Kidney Association guidance classifies potassium of at least 6.5 mmol/L as severe and recommends urgent hospital assessment. This activity identifies that source explicitly rather than presenting one country's entire protocol as a universal US rule. Evelyn's severe confirmed value and symptoms make the emergency decision clear across the case's context.

Sources: [1]

## Separate stabilization from longer-term prevention

Emergency teams assess rhythm and instability, protect the myocardium when indicated, shift potassium intracellularly and remove potassium according to the presentation and local protocol. These actions have different purposes. A treatment that temporarily changes distribution does not remove the underlying potassium burden, and recurrence can occur. Definitive management may require specialist input, including consideration of dialysis in appropriate circumstances.

This activity is not an emergency dosing protocol. The practical outpatient competency is recognizing when to escalate and communicating enough information for timely care. Patiromer and sodium zirconium cyclosilicate are not labeled as emergency treatment for life-threatening hyperkalemia. Do not substitute a home binder prescription for the monitored response Evelyn needs.

If acute therapy includes insulin, the receiving team must also manage hypoglycemia risk with protocol-directed glucose monitoring. Handing off a potassium value without the treatments already given, their times and subsequent results can create another safety problem.

Sources: [1], [7], [8]

## Practice the handoff in one minute

A concise case handoff could say: Evelyn, 67, with CKD and losartan exposure, now has new weakness and a repeat nonhemolyzed potassium of 6.6, with kidney function worse than baseline. Emergency assessment is being arranged. The previous value was hemolyzed. Here are the collection times, recent symptoms, medication list and contact details.

Notice what is absent: an unsupported diagnosis of permanent ARB intolerance or a promise that one treatment will solve the problem. The immediate handoff should preserve uncertainty where it remains and communicate the facts that change urgency.

Reflection: imagine the repeat result arrives after your shift. Identify the actual person or queue that would receive it in your practice. Is the queue monitored? Who contacts the patient? What happens if the telephone call is unanswered? Think through that workflow before continuing; no written submission is required.

Sources: [1]

## A small change in the story changes the destination

Compare three fictional telephone calls. The first patient feels well, has an unexpected hemolyzed result and can obtain a prompt repeat with a clinician assigned to review it. The second has the same reported number but is vomiting, passing less urine and becoming weak. The third has a confirmed severe value but says she feels fine. The laboratory number is part of each decision; it is not the entire triage assessment.

For the first call, the unresolved question is the reliability and clinical meaning of the result. For the second, acute illness and possible kidney deterioration change the urgency. For the third, absence of symptoms does not neutralize a dangerous confirmed concentration. The exercise is to identify which facts move the patient out of a routine outpatient pathway.

Now remove a logistical assumption: the first patient cannot get to the laboratory today, the clinic is closing, and no one is assigned to the weekend inbox. A plan that was reasonable with prompt testing and reliable follow-through may no longer be safe. Escalate to a clinician who can arrange an appropriate alternative. Access is part of the clinical decision, not an administrative detail to solve after the plan is signed.

A useful note distinguishes facts from inference. "Hemolyzed specimen; actual potassium uncertain" records a limitation. "No new symptoms reported on direct telephone assessment" records what was asked and when. "Probably fine" records neither. The goal is a defensible handoff that another clinician can understand without reconstructing the entire conversation.

Sources: [1]

## What a closed result loop looks like

The loop begins when someone acknowledges the abnormal result, continues through patient assessment and the chosen action, and ends only when the result and plan have reached the person who needs to act. A repeat laboratory order is one step inside that loop. It is not the endpoint.

For Evelyn, the record should connect the first result, the reason for confirmation, the new symptoms, the repeat result and the change to emergency assessment. Preserve the timeline. If another team calls, it should be clear which value was hemolyzed and which was reliable. If treatment has already been given, communicate what and when rather than sending an undifferentiated list of orders.

After the emergency episode, ask whether the outpatient team received a usable medication list and a follow-up responsibility. If the hospital note says a medicine was held but the outpatient list still says "continue," the discrepancy needs resolution. Do not leave Evelyn to reconcile conflicting instructions by herself.

Think of the failure you can prevent in your own setting: an unmonitored inbox, a result sent to the wrong prescriber, a missed transport arrangement or two conflicting medication lists. Choose one process to check. You are not being asked to redesign the entire system during this activity.

Sources: [1], [2]

## Close the episode without closing the indication

After stabilization, the team will need to distinguish the acute trigger from the chronic risk. A temporary medication hold during acute illness is not automatically a lifelong prohibition. Record why each medicine was interrupted and what must be reassessed before any restart. The next case examines that longer-term decision.

Carry forward both parts of Evelyn's story: possible artifact still required verification, and a later severe result required immediate escalation. Neither a reassuring first impression nor a normal-looking ECG should override the updated presentation.

Sources: [1], [2]

## Carry this into practice

Triage the patient, verify uncertain results and name the result owner. Severe or symptomatic hyperkalemia needs emergency assessment; a reassuring ECG cannot exclude danger.

CASE 02 · FIND CONTRIBUTORS & PRESERVE BENEFIT

# The potassium is up. Must the protection come off?

Sofia has CKD and albuminuria. She has worked hard to reduce sodium, switching to a salt substitute she thought was healthier. Now two reliable potassium results are elevated, and the refill note says “stop losartan.” She asks whether the kidney medicine was a mistake.

| Case information | Details                                                                   |
|------------------|---------------------------------------------------------------------------|
| Results          | Potassium 5.5 and 5.6 mmol/L on reliable samples; eGFR 39, near baseline  |
| Kidney context   | Persistent albuminuria; losartan has an established indication            |
| New exposures    | Potassium-containing salt substitute and frequent ibuprofen for knee pain |
| Clinical state   | Stable, no acute symptoms; timely reassessment is available               |

## Start with the indication and the change

Sofia’s question deserves a direct answer: an adverse laboratory result does not mean the original indication was wrong. It means the current balance of benefit and risk needs review. Establish why the ARB was prescribed, what dose she takes, the prior potassium and creatinine trend, and what changed before the abnormal results.

Review the actual containers rather than relying only on the medication list. Ask about over-the-counter pain medicines, supplements, electrolyte powders, herbal products and salt substitutes. Sofia has two actionable exposures. Arrange a safer pain-management discussion and review the salt substitute’s ingredients. A product advertised as lower in sodium may contain potassium chloride.

The case’s stable kidney function and lack of acute symptoms support a structured prompt outpatient response with a reliable safety net. If acute illness, rapidly worsening renal function, severe potassium elevation or concerning symptoms develop, urgency changes. A chronic-management plan is valid only while its assumptions remain true.

Sources: [2]

## Do not turn one class warning into a permanent stop rule

KDIGO recommends addressing potassium when feasible rather than reflexively reducing or stopping an indicated ACE inhibitor or ARB. It also recognizes limits: symptomatic hypotension or hyperkalemia that remains uncontrolled despite treatment may justify reduction or discontinuation. The objective is safe, appropriate treatment, not continuation at any cost.

For routine initiation or dose increase of a RAS inhibitor, KDIGO suggests blood pressure, creatinine and potassium review within two to four weeks, tailored to renal function and potassium. That routine interval is not permission to wait weeks after a new clinically important abnormal result. Sofia's active problem needs an earlier individualized reassessment.

Make the first case decision. Which option addresses both reversible contributors and the indication? Which options either add risk or discard a beneficial therapy without enough reasoning?

Sources: [2]

## The measured gap: useful, but not causal proof

In a retrospective cohort of 5,728 people with CKD and new hyperkalemia, 13.5% discontinued RAAS inhibitors within three months. Discontinuation was associated with higher mortality, with an adjusted hazard ratio of 1.34 and a 95% confidence interval of 1.14 to 1.56. The cohort's mean age was 76. These findings describe a defined clinical population, not the future learners in this activity.

People who stop treatment may be sicker in ways that statistical adjustment cannot fully capture. The study therefore does not prove that continuing a medicine would prevent an individual patient's death. Its educational value is to make unreviewed discontinuation visible as a process worth examining.

For Sofia, the actionable question is narrower: have we addressed the contributors, specified reassessment, and documented the reason if treatment must be interrupted? A statement that stopping is associated with worse outcomes cannot override an unsafe potassium result.

Sources: [4]

## Build a plan with several options, not one product

Dietary counseling should be practical and individualized. Review potassium additives and the patient's usual foods, portion sizes, nutrition, affordability and cultural preferences. A renal dietitian can help. A blanket instruction to stop all fruits and vegetables is easy to give and difficult to justify as a complete strategy.

The clinician may consider a diuretic when clinically appropriate for blood pressure or volume management, correction of relevant metabolic acidosis, or a potassium binder for persistent or recurrent hyperkalemia. Each option has its own contraindications and monitoring needs. Do not add a diuretic solely to chase a laboratory number in a volume-depleted patient, or assume bicarbonate is appropriate without assessing the acid-base and volume context.

Sofia and the clinician agree on exposure changes, a specific repeat laboratory appointment and a same-day result review once that test is available. The exact interval and medication decisions belong to the treating clinician. She knows which symptoms require urgent care and whom to contact if the laboratory appointment cannot happen.

Sources: [2]

## HFrEF MRA rules are a separate decision

Do not carry an ACE inhibitor or ARB practice point over to every MRA without checking the specific indication and guidance. For symptomatic HFrEF, the 2022 US HF guideline recommends initiating spironolactone or eplerenone when eGFR is above 30 and potassium is below 5.0. If potassium cannot be maintained below 5.5, the guideline recommends discontinuing the MRA to avoid life-threatening hyperkalemia.

These boundaries concern the specified HFrEF steroidal MRA context. They are not a universal dosing table for finerenone, every phenotype of HF, or every kidney indication. Use the current product-specific label and indication-specific monitoring instructions. A binder does not abolish those safety requirements.

Sofia is not being asked to start an MRA while the current potassium problem is unresolved. The distinction matters because “preserve treatment” can otherwise become an overly broad instruction to intensify every cardioprotective medicine at once.

Sources: [3]

## Use a trend without treating it as a guarantee

Imagine Sofia’s last three reliable values were 4.7, 5.2 and 5.6. The rising pattern helps establish that the current result is not an isolated flag, but it does not identify one cause by itself. Align the dates with medication changes, illness, supplement use and renal function. The time relationship is a clue to investigate, not proof of causation.

In a different version of the case, the result returns to the prior range after the salt substitute and nonprescription exposure are addressed. That supports a practical response to the contributors, while leaving a need for continued surveillance. In another version, potassium remains elevated and kidney function worsens. The clinician must reassess the patient and the treatment balance, rather than repeatedly issuing the same advice.

Ask what the chart would show to a colleague who opens it next month. Can that person tell whether the ARB is active, temporarily held or stopped after a considered review? Can the person see why, which result prompted the decision and what would trigger reassessment? Medication status is clinical information; ambiguous status can lead to duplicate instructions or an indefinite interruption.

Sofia’s preference also belongs in the discussion. She wants kidney protection but worries that every healthy change she makes will be criticized. Acknowledge the intention behind the salt substitute, explain the specific potassium concern and offer an achievable alternative. Invite her to bring packaging or photographs to the next visit, rather than expecting her to remember every ingredient.

Sources: [2]

## Make the counseling actionable without making food the villain

A useful dietary conversation begins with what the patient actually eats and can afford. Ask who shops and cooks, whether appetite has changed, and whether the patient is already restricting several food groups. Consider a dietitian referral when available. The aim is a plan the patient can carry out while maintaining nutrition.

Give Sofia one or two specific actions that match the identified problem, then check understanding. For example, she can review the salt substitute with the clinical team and ask before adding electrolyte products. Avoid replacing the whole conversation with an unsorted list of foods to avoid. The laboratory follow-up remains necessary even when the dietary discussion goes well.

The same principle applies to medicines. “Avoid anti-inflammatory pain medicines” may be too vague for someone who knows only a brand name. Review the actual product and arrange an appropriate pain-management alternative with the treating clinician. Do not simply remove a coping strategy without addressing the symptom that led to it.

Before ending, ask Sofia what could prevent the repeat test from happening. If the answer is work hours or transportation, resolve that constraint or choose a clinically appropriate alternative pathway. A plan that relies on an unavailable test has not yet solved the safety problem.

Sources: [2]

## Work through the counterfactual

Suppose Sofia’s repeat potassium remains high despite the agreed measures. Recheck what actually happened: did she obtain the test, stop the relevant exposure, understand the plan and have access to the prescribed treatment? Then reassess clinical stability, renal function and the need for specialist advice. Persistent uncontrolled hyperkalemia can warrant medication reduction or interruption.

Now suppose potassium normalizes after the exposures are addressed. Document the result, communicate it, and continue an appropriate monitoring plan. Neither branch ends with “no further follow-up needed.” The recurrence risk and the medication indication still exist.

Reflection: select one phrase you would use to explain the plan without blaming Sofia. For example: “The lower-sodium product changed your potassium exposure. Let’s choose an alternative and check that the plan is working.” The case assesses clinical decisions, not a written counseling assignment.

Sources: [2]

## Carry this into practice

Review why the medicine is indicated, remove reversible contributors, individualize potassium management and reassess. If a hold is needed, document a deliberate review and restart decision.

CASE 03 · APPRAISE EVIDENCE & CLOSE THE LOOP

# A better potassium number is only part of the plan.

Margaret has HFrEF and CKD. After recurrent hyperkalemia, spironolactone was held. Her clinician is considering a binder-supported treatment plan. She wants to know whether the new powder will help her live longer, and how it fits around her morning medicines.

| Case information        | Details                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------|
| Heart and kidney status | LVEF 32%; CKD G3b; recent hyperkalemia now stabilized                                     |
| Safety context          | Intermittent edema; magnesium near the lower limit of normal; constipation history        |
| Daily life              | Several oral medicines at breakfast; pharmacy copay and laboratory transport are concerns |
| Your task               | Explain the evidence accurately, individualize safety and assign follow-through           |

## Begin with the question the patient actually asked

Margaret’s question about living longer is different from a question about lowering potassium. Explain which outcome each piece of evidence addresses. A treatment can improve a laboratory result or make another medicine easier to use without having established its own mortality benefit.

Before considering reintroduction of spironolactone, the clinician reassesses current potassium, kidney function, blood pressure, volume status, the cause of the prior episode and the indication-specific safety requirements. Her case does not authorize an automatic restart or an exact dose. Decisions require a clinician who can review the current measurements and arrange follow-up.

Ask Margaret to describe the morning routine. Which medicines are prescribed, which are taken together, and who helps organize them? A theoretically appropriate regimen can fail when its administration schedule, cost or testing arrangements cannot be carried out.

Sources: [3], [5], [6]

## DIAMOND: potassium control and treatment optimization

DIAMOND randomized 878 patients with HFrEF and current or previous RAAS inhibitor-related hyperkalemia after a patiomer-assisted run-in and treatment optimization. Compared with withdrawal to placebo, continuing patiomer improved potassium control and reduced recurrent hyperkalemia and MRA dose reductions.

The selected run-in population matters: participants who reached randomization had already navigated an optimization phase. The trial's primary endpoint was changed from a clinical-outcomes endpoint to change in potassium during the study. It therefore does not establish a mortality benefit from adding patiomer.

For Margaret, the relevant discussion is whether a potassium-management strategy can support an otherwise appropriate regimen safely and practically. It is not a promise that the binder itself has been shown to extend her life. Make the evidence-interpretation decision below before comparing the next study.

Sources: [5]

## REALIZE-K: read the benefit and the safety finding together

REALIZE-K randomized 203 selected participants with HFrEF after an open-label run-in. The estimated optimal-response proportions were 71% with sodium zirconium cyclosilicate and 36% with placebo. Optimal response combined normokalemia, spironolactone of at least 25 mg daily and no rescue therapy during the specified follow-up.

The exploratory cardiovascular-death or worsening-HF outcome occurred in more participants receiving SZC: 11 versus 3. The trial was not powered to establish clinical-outcome effects, and the imbalance is a safety signal rather than proof of a causal mortality effect. It must still inform interpretation, particularly in someone with volume concerns.

Only about one quarter of randomized participants were women. Do not claim a women-specific benefit or compare the trial's effect size directly with DIAMOND to rank binders. These are different studies, not a head-to-head comparison.

Sources: [6], [9]

## Translate the labels into a feasible daily schedule

Patiomer can cause hypomagnesemia and gastrointestinal adverse effects; monitor magnesium and potassium. Its US label generally separates other oral medicines by at least three hours, except medicines shown not to have a clinically important interaction. Avoid use in severe constipation, obstruction or impaction. Margaret's bowel history and low-normal magnesium deserve review.

SZC contains approximately 400 mg sodium per 5 g dose, with uncertain absorbed proportion, and carries an edema warning. Monitor volume status, especially with HF or renal disease. Its label generally separates

other oral medicines by at least two hours; exceptions concern medicines without pH-dependent solubility. Review the current label and pharmacist's interaction assessment rather than inventing a universal schedule.

Both require preparation as directed, potassium monitoring and dose adjustment when needed. Neither replaces emergency care for life-threatening hyperkalemia. Access, preferences, cost, preparation burden and the clinician's assessment all belong in the choice. Do not display a brand as the default answer.

Sources: [7], [8]

## Turn a medication plan into a shared calendar

The discharge or clinic plan should list what is continued, held, started or being considered, with the reason for each decision. Specify the laboratory tests and date, who reviews the result, who covers that person, how Margaret receives the decision, and what happens if the sample is missed. Use a concrete appointment arranged by the clinical team, not an educational generic interval pasted into every case.

For a held medicine, document the criteria and clinician responsible for reassessing restart. The decision should consider the original indication, updated potassium and renal function, blood pressure, volume status, interacting medicines and whether the trigger has resolved. A hold without a review date can become an unintended permanent discontinuation.

Ask Margaret to explain the plan back in her own words: which medicines go together, which require separation, when she will have blood drawn and whom she will call. If transport or cost blocks the plan, solve that before treating the plan as complete. A pharmacy fill is not evidence that a complex schedule was understood.

Sources: [2], [3], [7], [8]

## A four-question evidence check at the bedside

First ask who was studied. Margaret has HFrEF, but a trial that selected participants after a run-in does not describe every patient with a new potassium alert. People who could not complete optimization may be underrepresented in the randomized comparison. That selection limits how confidently the result can be transferred to a patient with unstable illness or major practical barriers.

Second ask what was compared. Continuing a binder versus withdrawing it to placebo after run-in is not the same experiment as starting one binder versus another in an unselected clinic population. The comparator helps explain what the result can answer. It cannot support a head-to-head ranking that the investigators did not test.

Third ask what changed. Potassium concentration, recurrence of hyperkalemia, persistence on an MRA and a clinical event are distinct outcomes. Do not convert success on one into an unstated claim about another. If Margaret asks about longevity, answer that question directly and then explain the more limited outcome the trial supports.

Fourth ask what could go wrong and what remains uncertain. A positive efficacy result and a concerning safety finding can coexist. REALIZE-K's exploratory HF imbalance belongs beside the potassium result in the discussion, not in an omitted footnote. The appropriate response is a balanced clinical judgment with

monitoring, rather than either a promise of benefit or a categorical causal claim the trial cannot establish.

Sources: [5], [6], [9]

## Work through a pharmacy and laboratory handoff

Suppose Margaret cannot afford the prescribed binder at the first pharmacy. The team should not count the prescription as an implemented plan or assume the medicine is being taken while adjusting other treatment. Ask the pharmacist and prescribing team to resolve access, consider clinically appropriate alternatives and update the monitoring plan. Document what Margaret actually has, not only what was ordered.

Suppose she can obtain it but cannot fit the separation interval around breakfast medicines. A pharmacist can review which medicines truly require separation under the current label and help construct a feasible schedule. The goal is accurate administration, not a complicated calendar that the patient quietly abandons. Provide the final agreed schedule in a format she can use.

Suppose the follow-up potassium result is available, but the ordering clinician is away. A backup reviewer should already be identified. That person needs the indication, recent medicine changes, prior results and the intended decision. A single normal value does not by itself authorize every previously held medicine to restart; the clinical context still matters.

Finally, suppose Margaret reports worsening edema or new breathlessness. Reassess the presentation and urgency. Do not dismiss a new symptom because the potassium result improved. Her outcome is a whole clinical state, including congestion, kidney function, symptoms, treatment burden and the ability to follow the plan.

Sources: [2], [3], [7], [8]

## Evaluate the care process without claiming patient outcomes

In the activity, success means selecting a safe next step and an accountable plan. In a later voluntary follow-up, clinicians can report whether they adopted a result-owner workflow or documented a restart review. Those reports are useful implementation evidence, but they are not verified reductions in hospitalization or mortality.

Reflection: compare two plans. "Repeat blood work and see cardiology" leaves ownership and timing open. "The clinic has arranged the laboratory visit; the named clinician reviews it that day, a backup covers absence, and Margaret receives a call with the medication decision" describes a closed process. The latter still needs patient-specific timing and escalation instructions.

The final six questions revisit recognition, evidence interpretation and follow-through. Read the full teaching or listen to its complete podcast adaptation; short recaps are optional supplements. Media playback does not determine completion, and repeating the teaching in another format does not create a second activity or extra credit.

Sources: [2], [3]

## Carry this into practice

Keep biochemical efficacy, treatment optimization and clinical outcomes separate. Match the binder to safety and daily life, and make every test and medication reassessment someone's responsibility.

# References

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